



Contingency and Pollution Prevention Plan

Dufferin Aggregates, a division of CRH Canada Group Inc.
Paris Pit

708 Watts Pond Road
Paris, Ontario N3L 3E2

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1.0 **INTRODUCTION**

This Contingency and Pollution Prevention Plan (Plan) has been developed by Dufferin Aggregates (DFA) for the Paris Pit (Pit) in Paris, Ontario. The Plan has been prepared to satisfy the requirements of condition 5 of the Industrial Sewage Works Environmental Compliance Approval (ECA) No. 0302-ALCK5W, dated April 12, 2017. A copy of the ECA is included in Appendix I. The Pit is located on Watts Pond Road in Paris, Ontario. Dufferin Aggregates is a division of CRH Canada Group Inc.

This document provides a description of emergency and contingency plans and procedures for dealing with spills and complaints requirements at the Pit. A site plan as required by condition 5.1 (c) of the ECA is included in Appendix II.

2.0 **PROCEDURES FOR IMPLEMENTING THE PLAN**

This Contingency and Pollution Prevention Plan will be activated in the case of any on-site emergency. In the event of an emergency that requires fire, ambulance, police assistance, 9-1-1 would be notified immediately. Otherwise, in the event of an emergency situation, the Pit shall implement the Emergency Response & Evacuation Procedure, which is included in Appendix III. This procedure establishes and maintains procedures to respond to accidents and other emergency situations.

In the event of a spill emergency situation, it triggers the Pit to implement the Techniques for Controlling Contaminants Plan, which is included in Appendix IV. This plan is a requirement of the Pit's Aggregate Resources Act Licence ID No. 5601 and outlines potential sources of contaminants within the Pit, management techniques on how to control the contaminants, and spill response procedures.

In general, and as outlined in the procedures in Appendix IV, all spills at DFA sites shall be handled as per the requirements in the Spill Response Work Instruction (XA.03.101) in the DFA Environmental Management System (EMS). All spills must be documented using the Investigation Report Form (XA.05.B08.FR.01) and must be reported to the required individuals in CRH Canada Group Inc., and to the MOECC Spills Action Centre if the spill meets reporting requirements. As per condition 6.2 of the ECA, all reportable spills will also be reported to the MOECC District Manager.

In the event of a spill, any equipment involved will be immediately shutdown to prevent any further release of the spilled material. All spills are contained using spill kit materials (i.e. absorbent, spill pads) which are found in spill kits at the Pit, as identified on the site plan in Appendix II. If a spill escapes onto the ground, the spill is contained and the affected material is placed into a container for proper disposal by a 3rd party. If a spill escapes into the settling or storage ponds, pumps would be shut off immediately. Depending on the material spilled, absorbent socks/booms are placed on the surface of the water to absorb the spilled material. At the time of the spill, if 3rd party assistance is required for cleanup, the appropriate party will be contacted (e.g. vacuum truck contractor, sweeper contractor). All used spill kit contents are placed into containers for proper disposal by a 3rd party.

Safety Data Sheets (SDS) for any hazardous material stored on-site are kept at the Pit. The potential hazardous materials that may be stored on-site include: diesel fuel, gasoline (unleaded), propane, engine oils, transmission oil, industrial gear lubricant, greases, antifreeze/coolant, hydraulic fluid, diesel exhaust fluid, brake fluid, parts cleaner, WD40 multi-use aerosol, and water based marking paint. Some of these materials may be used for equipment within the area servicing the Works. Copies of the SDS are included in Appendix V.

3.0 **CONTACT INFORMATION**

Owner information	Dufferin Aggregates, a division of CRH Canada Group Inc. 2300 Steeles Ave West, 4 th floor Concord, Ontario L4K 5X6 Phone: 905-761-7100
Facility information	Dufferin Aggregates Paris Pit 708 Watts Pond Road Paris, Ontario N3L 3E2 Phone: 1 877 332 3004
Site Manager (and person responsible for activating the Contingency Plan)	Name: Martin Bradley Phone: 519-820-0534
Backup person responsible for activating the Contingency Plan	Name: Cody Carey Phone: 519-497-4673
Environment Manager CRH Canada Group Inc.	Name: Maria Topalovic Phone: 647-924-5498
Emergency Contacts	Ambulance - 911 Fire Department – 911 – 1-866-847-5416 Police – 911 – 1-888-310-1122 Willett Urgent Care Centre 238 Grand River St. North, Paris, ON N3L 2N7 519-442-2251 Brantford General Hospital 200 Terrace Hill Street, Brantford, ON N3R 1G9 Phone: 519-751-5544
Spill Emergency Contacts	MOECC Spills Action Centre 1-800-268-6060
Emergency Spill Response Contractors (Vac Truck)	Smits Tank Maintenance: 905-845-6820 Veolia: Hamilton Division (spills): 905-547-5661 General services: 1-800-461-3267 GFL: 1-800-541-2527 Accuworx: 1-877-898-7222 Tesla Environmental: 1-866-663-6697
Emergency Spill Response Contractors (Sweeper)	A&G: 905-857-5756 Centennial: 416-741-4141

4.0 **TRAINING AND RECORD KEEPING**

All employees at the Pit receive annual startup safety training through the CRH Safety Department. All employees at the Pit receive spill response training, which is refreshed annually through tailgate talks and/or Environment talks. Paris Pit employees will receive specific training on this Contingency & Pollution Prevention Plan and the training will be documented in a training form. When training is implemented, training forms will be kept electronically with a copy of this Plan at the Pit.

Records are kept electronically and can be made available on-site if requested. This plan shall be updated when required and a copy be retained at the Paris Pit for the operational life of the Works. When requested by the MOECC, a copy of this plan, training documents, and supporting documentation, shall be made available.

5.0 **REVISION HISTORY**

List of document changes made:		
Date	Revision #	Modifications
25.January.2016		Document Created and draft finalized.
12.April.2017	1	Document revised as per ERT Case 16-048 and 16-052 Decision issued April 11, 2017.
15.May.2017	2	Document revised based on comments received from the County of Brant and issuance of amended ECA (ISW).

APPENDIX I

AMENDED ENVIRONMENTAL COMPLIANCE APPROVALNUMBER 0302-ALCK5W
Issue Date: April 12, 2017

CRH Canada Group Inc.
2300 Steeles Avenue West, 4th Floor
Concord, Ontario
L4K 5X6

Site Location: Dufferin Aggregates - Paris Pit
Lot 26, 27, 1, 2 & 3, Concession 3,2,WGR,
South Dumfries
County of Brant

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

the establishment, use and operation of sewage works for the collection, transmission, treatment and reuse of wash water effluent from an aggregate washing operation, consisting of the following:

- one (1) **settling pond** (comprised of the settling cell(s) and the recirculation cell) constructed above the ground-water table receiving wash water from the Processing Wash Plant and make-up water from the source water pond, and returning settled water back to the Processing Wash Plant.

all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage Works.

all in accordance with the supporting documents listed in Schedule 'A' to this environmental compliance approval.

For the purpose of this environmental compliance approval, the following definitions apply:

"Application" means the application for an environmental compliance approval submitted to the Ministry for approval by or on behalf of the Owner and dated June 03, 2013.

"Approval" means this environmental compliance approval, any schedules attached to it, and the Application;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

"District Manager" means the District Manager of the Guelph District Office of the Ministry;

"EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Owner" means CRH Canada Group Inc., and includes its successors and assignees;

"OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended; and

"Works" means the sewage works described in the Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITION

- 1.1 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- 1.2 Except as otherwise provided by these terms and conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with this Approval.
- 1.3 Where there is a conflict between a provision of this environmental compliance approval and any document submitted by the Owner, the conditions in this environmental compliance approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Owner, the Application shall take precedence unless it is clear that the purpose of the document was to amend

the Application

- 1.4 Where there is a conflict between the documents listed in the Schedule A, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- 1.5 The terms and conditions of this Approval are severable. If any term and condition of this environmental compliance approval, or the application of any requirement of this environmental compliance approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. CHANGE OF OWNER

- 2.1 The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:
 - (a) change of address of Owner or operating authority;
 - (b) change of Owner or operating authority or both, including address of new Owner or operating authority, or both;
 - (c) change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* ; and
 - (d) change of name of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the “Initial Return” or “Notice of Change” filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , shall be included in the notification to the District Manager.
- 2.2 In the event of any change in ownership of the Works, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager.
- 2.3 The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this environmental compliance approval.

3. OPERATIONS MANUAL

- 3.1 The Owner shall prepare an operations manual prior to the construction, use and operation of the Works that includes, but is not limited to, the following information:
 - (a) operating procedures for routine operation of the Works;
 - (b) inspection programs, including frequency of inspection, for the Works and the methods or tests to

be employed to detect when maintenance is necessary;

- (c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;
- (d) contingency plans and procedures for dealing with a potential spill, bypasses or any other abnormal situations, including notifying the District Manager of the situation; and
- (e) procedures for receiving and responding to public complaints.

3.2 The Owner shall review and update the operations manual from time to time and shall retain a copy of the updated manual onsite at the Works. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

3.3 The Owner shall make all reasonable efforts to promptly develop a seal at the bottom of the settling pond (comprised of the settling cell(s) and the recirculation cell) and to maintain the integrity of the seal when removing excess sediment from the bottom of the settling pond.

4. MONITORING AND RECORDING

4.1 The Owner shall monitor the groundwater through seven (7) groundwater monitoring wells. Existing wells may be used or new wells installed. The groundwater monitoring wells shall meet the following requirements:

- (a) the wells shall be screened within the upper sand and gravel aquifer;
- (b) three (3) groundwater monitoring wells shall be located along the northern boundary of the Paris South Pit, one (1) of these wells may be located at the south boundary of the Paris North Pit;
- (c) three (3) groundwater monitoring wells shall be located along the southern boundary of the Paris South Pit, with one of these monitoring wells located up gradient of the County of Brant's Telfer wells P31 and P32 and another located immediately down gradient of the source water pond; and
- (d) existing groundwater monitoring well MW1-12 or a suitable replacement shall be included in the monitoring.

4.2 Within **three (3) months** of the issuance of this Approval, the owner shall submit to the Director and the District Manager a document for approval indicating the location and screened depth intervals for the seven (7) groundwater wells proposed to be used.

4.3 Groundwater samples shall be collected from the seven (7) wells required by Condition 4.1 above in **May, August and December** of each year and sent for analysis in accordance with the table below:

General Chemistry	Metals (1)
Conductivity, pH, Hardness (as CaCO ₃), Total Suspended Solids (TSS), Total Dissolved Solids, Alkalinity - Bicarbonate (as CaCO ₃), Alkalinity - Carbonate (as CaCO ₃), Alkalinity - Hydroxide (as CaCO ₃), Total - Alkalinity (as CaCO ₃), Unionized Ammonia, Total Ammonia (as N), Nitrate-N, Nitrite-N, Nitrate & Nitrite (as N), Phosphate-P (ortho), Sulphate, Anion Sum, Cation Sum, Cation - Anion Balance, Dissolved Organic Carbon, Total Organic Carbon, Turbidity.	Aluminium, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Chloride, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon (total and dissolved silicon), Silver, Sodium, Strontium, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium.

(1) - Groundwater samples are analyzed for dissolved metals. Surface water samples are analyzed for total metals.

4.4 Groundwater samples shall also be analysed for pesticides, including organochlorine pesticides and herbicides, as listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014) (see Schedule A), at detection limits equal to or lower than those listed. In the event of any analytical issue (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.

4.5 Surface water samples shall be collected from SW1B (previously referred to as SW1; see OWRA S53 Environmental Compliance Approval (ECA) Application and Supporting Information, Dufferin Paris Pit, County of Brant, CRA, 2013, See Schedule A) and analysed as follows:

- (a) Samples shall be collected three (3) times per year in **May, August and December**; and,
- (b) Samples shall be analysed for: Field Parameters General Chemistry, Metals and Oil and Grease in accordance with the table below:

Field Parameters	General Chemistry, Metals (1) and Oil & Grease
pH, temperature, conductivity, dissolved oxygen, turbidity	Total Suspended Solids, hardness, alkalinity, nutrients (total phosphorous, total ammonia, total nitrate, total nitrite and calculated unionized ammonia), major ions, metals (unfiltered samples except for aluminium which should be from a clay free sample), Oil and Grease.

- (c) Surface water samples shall also be analysed for the suite of pesticides, including organochlorine pesticides and herbicides, listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014) (see Schedule A). For pesticides, the analytical detection limits shall be equal to or lower than those listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014). In the event of any analytical issue (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.
- 4.6 Within **three (3) months** of the issuance of this Approval, the Owner shall prepare and submit to the Director for approval a sediment sampling plan for sediment accumulated within the settling cell(s). The purpose of the sediment sampling plan is to determine the distribution and concentration of pesticides within the settling cell(s).
- 4.7 The sediment shall be sampled for: atrazine, atrazine plus atrazine desethyl, glyphosate and aminomethylphosphonic acid (AMPA) and the pesticides listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014) (see Schedule A). For pesticides, the analytical detection limits shall be equal to or lower than those listed in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario, CRA (2014). In the event of any analytical issue (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.
- 4.8 The results of the sediment samples shall be compared to the lower of the standards for each of the parameters in Condition 4.7 above to those set out in Alberta Tier 1 Soil Remediation Guideline and Nova Scotia Environmental Quality Standards (as updated or replaced), and shall be provided to the Director and the District Manager, future Ontario or Federal guidelines developed for the parameters set out in Condition 4.7 above shall also be used for comparison. Based on the results of the sediment samples, the Director and Owner shall discuss suitable uses for the sediment for on-site rehabilitation. No sediment shall be used on Site for rehabilitation without complying with all applicable laws in place at the time of reuse.
- 4.9 Water samples shall be collected from the recirculation cell as follows:
- (a) In the first year after operational commencement of the processing wash plant, one (1) sample shall be collected within **one (1) week** of the recirculation cell bottom being sealed and two (2) times thereafter until cessation of aggregate washing for the calendar year. Samples shall be collected at least **thirty (30) days** apart.
- (b) In the second year after operational commencement of the processing wash plant, water samples shall be collected three (3) times during the calendar year between **February 15th** and **December 15th** at approximately equally spaced intervals.
- (c) For each subsequent year, water samples shall be collected two (2) times during the calendar year, between **February 15th** and **December 15th**, with the first sample taken prior to the start of aggregate washing season and the second taken at the end, with the following exception:

- i. if sediment is to be removed from the recirculation cell, the sediment shall be removed prior to the start of the aggregate washing season. A water sample shall be collected **one (1) week** after the bottom of the cell has been sealed and two (2) times thereafter at approximately equally spaced intervals between the first sample date and December 15th.
- 4.10 The water samples collected from the recirculation cell shall be sent for analysis of general chemistry, including nutrients, metals and pesticides, including Glyphosate, Atrazine, Atrazine Desethyl and Aminomethylphosphonic Acid (AMPA). The sampling methods shall have detection limits at levels identical to or lower than those described in Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario , CRA (2014) (see Schedule 1). In the event of any analytical issues (e.g. matrix interference), reasonably achievable laboratory detection limits will apply.
- 4.11 After **three (3) years** of continuous data collection, application may be made to the Director to have the monitoring conditions amended.

5. CONTINGENCY AND POLLUTION PREVENTION PLAN

- 5.1 The Owner shall prepare a Contingency and Pollution Prevention Plan prior to the commencement of operation of the Works that includes, but is not necessarily limited to, the following information:
 - (a) the name, job title and address of the Owner, person in charge, management or control of the facility.
 - (b) the name, job title and 24-hour telephone number of the person(s) responsible for activating the Contingency Plan.
 - (c) a site plan drawn to scale showing the facility, nearby buildings, streets, maintenance access and the Works (including direction(s) of flow in storm events) and any features which need to be taken into account in terms of potential impacts on access and response (including physical obstructions and location of response and clean-up equipment).
 - (d) a listing of telephone numbers for: local clean-up company(ies) who may be called upon to assist in responding to spills; local emergency responders including health institution(s); and MOECC Spills Action Centre 1-800-268-6060.
 - (e) Materials Safety Data Sheets (MSDS) for each hazardous material which may be transported or stored within the area serviced by the Works.
 - (f) the written procedures by which the Contingency and Pollution Prevention Plan is activated and a description of the Trigger Mechanism(s).
 - (g) a description of the spill response and pollution prevention training provided to employees assigned to work in the area serviced by the Works, the date(s) on which the training was provided and to whom.

- (h) the date on which the Contingency and Pollution Prevention Plan was prepared and subsequently, amended.
- (i) any other information the District Manager requires from time to time.

5.2 The Contingency and Pollution Prevention Plan shall be kept in a conspicuous place inside the office building. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

5.3 The Contingency and Pollution Prevention Plan shall be reviewed and amended from time to time, as needed by changes in the operation of the facility.

5.4 A minimum of **thirty (30) days** prior to submission, a copy of the Plan required by Condition 5.1 shall be provided to the County of Brant and posted on the Company's website for a period of thirty (30) days to permit the County of Brant and the public the opportunity to provide comments to the Company.

6. REPORTING

6.1 **One (1) week** prior to the start-up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.

6.2 In addition to the obligations under Part X of the *Environmental Protection Act*, the Owner shall, within **ten (10) working days** of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

6.3 The Owner shall prepare and submit a report to the District Manager on an annual basis within **ninety (90) days** following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

- (a) a summary and interpretation of all monitoring data with a comparison to applicable objectives, guidelines, standards, and modelled predictions;
- (b) an overview of the success and adequacy of the Works;
- (c) a description of any operating problems encountered and corrective actions taken;
- (d) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works; and

(e) any other information the District Manager requires from time to time.

7. SPECIAL CONDITION – PUBLIC ACCESSIBILITY TO REPORT

The Owner shall, make the report required by Condition 6.3 available to the community advisory panel and publicly by posting it on the Company's website at the time specified in Condition 6.3.

SCHEDULE 'A'

This Schedule contains a list of supporting documentation / information received, reviewed and relied upon in the issuance of this Approval.

1. Environmental Compliance Approval Application for Industrial Sewage Works submitted by J. Richard Murphy, P.Eng., of Conestoga-Rovers & Associates Ltd., and signed by Kevin Mitchell, Manager Environment and Properties, of Holcim (Canada) Inc., dated June 03, 2013; and all supporting documentation and information.
2. CRA. 2013. OWRA S53 Environmental Compliance Approval (ECA) Application and Supporting Information, Dufferin Paris Pit, County of Brant, Ontario, signed and stamped by Michael R. Tomka, P. Eng., signed and stamped by Gary Lagos, P. Geo. and signed by J. Richard Murphy, P. Eng. of Conestoga-Rovers & Associates, June 2013, #078410, Report Number: 3.
3. CRA (2014). Assessment of Herbicide and Pesticide Concerns, Dufferin Paris Pit, County of Brant, Ontario; signed and stamped by Gary Lagos, P. Geo. and signed by J. Richard Murphy, P. Eng. of Conestoga-Rovers & Associates, July 2014, #078410, Report Number: 5.
4. CRA. 2015. Re: Modifications to Works for Existing ECA Application Dufferin Paris Pit, Paris, Ontario; letter addressed to Mr. Adedoyin Adenowo, Senior Wastewater Engineer, Ministry of Environment and Climate Change from Michael Tomka, P. Eng. of Conestoga-Rovers & Associates, April 16, 2015, Reference No. 078410.
5. AE. 2010. Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Alberta Environment, December 2010, ISBN: 978-0-7785-9015-6 (Printed Edition) ISBN: 978-0-7785-9947-0 (On-line Edition), Retrieved May 6, 2015 from: <http://environment.gov.ab.ca/info/library/7751.pdf>
6. NSE. 2014. Environmental Quality Standards for Contaminated Sites Rationale and Guidance, Nova Scotia Environment, Environmental Quality Standards for Contaminated Sites, April 2014, retrieved May 6, 2015 from: <https://novascotia.ca/nse/contaminatedsites/docs/EQS-Contaminated%20Sites-Rationale-and-Guidance-NSE-2014.pdf>

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.
2. Condition 2 is included to ensure that the Ministry records are kept accurate and current with respect to approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the works in compliance with it.
3. Condition 3 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works.
4. Condition 4 is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained and so that the Works do not cause any impairment to the environment. The Condition is also included for the following purposes:
 - a) To determine the chemistry of groundwater flowing onto and from that part of the Paris Pit property located south of Watts Pond Road. This area is known as the Paris South Pit.
 - b) To determine whether the sedimentation, recirculation and source ponds have an effect on groundwater chemistry.
5. Condition 5 is included to ensure that the Owner will implement the spill contingency plan, such that the environment is protected and deterioration, loss, injury or damage to any person(s) or property is prevented.
6. Condition 6 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.
7. Condition 7 is included to provide the general public with the report required in Condition 6.3.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s).
1400-9VNPVY issued on October 29, 2015.**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 12th day of April, 2017



Fariha Pannu, P.Eng.

Director

appointed for the purposes of Part II.1 of the
Environmental Protection Act

AA/

c: District Manager, MOECC Guelph

J. Richard Murphy, Conestoga-Rovers & Associates Ltd.

APPENDIX II

DFA Paris Pit
Traffic Control Plan
 708 Watts Pond Rd, Brant, ON N0E
 905-761-7100



- Tarping Area
- Yield
- PPE Free Area
- AED Location
- Oil and WHMIS Products Storage
- Over load Area
- Employee Parking Lot
- Fire Extinguisher Locations
- First Aid Kit
- Scale Area
- Emergency Meeting
- Eyewash Stations
- One Way highway Traffic (Haul Road)
- Two Way highway Traffic (Haul Road)
- Spill Kit Locations
- Fuel Station

DRIVERS MUST REMAIN INSIDE TRUCKS
 EXCEPT WHILE ON SCALES, IN TARPING STATIONS AND OVERLOAD AREA

ALL VISITORS MUST SIGN IN AND OUT AT THE SCALE HOUSE

Updated May 2017

Site Rules

- All visitors must sign in at Scalehouse & PPE must be worn on site.
- Vehicles must yield to heavy equipment. Turn on amber lights/ 4-ways.
- Do not override or interfere with any safety provision.
- Highway truck drivers must remain in vehicles unless at tarping or overload station.
- Seat belts must be worn.
- No drug or alcohol use permitted on site.
- No cell phone or audible ear phones permitted while driving or working.
- **All incidents must be reported to management.**
- **In case of emergency report to the "Emergency Meeting Area."**

APPENDIX III



Emergency Response Plan

Emergency Response – DFA Paris

1. Anyone who discovers an emergency situation should make an initial attempt to control the situation.
2. If the situation is unsafe or not within your capacity to control, remain calm, contact the Emergency Response Coordinator and if required, leave the area, warn others along the way.
3. The Emergency Response Coordinator announces “**EMERGENCY – RADIO SILENCE PLEASE**” and proceeds to the emergency area and takes control of the scene and all activities are halted.
4. Employees stop any activity, change their radios to channel **Channel 1** and remain where they are until further instructed and not use the radio unless instructed.
5. If deemed by the Emergency Response Coordinator they will announce “**EVACUATION PLAN - RADIO SILENCE PLEASE**”
 - a. Under evacuation orders everyone on the site shall evacuate all buildings, close the doors and immediately proceed to the Emergency Meeting Location.
 - b. Dispatch will stop or direct all truck traffic away from the area of emergency and if required, halt all shipping activities.
 - c. Once everyone has assembled in the Emergency Meeting Location, attendance will be taken by each supervisor to ensure everyone has been accounted for including visitors and contractors.
 - d. If persons are missing the Search & Rescue Team will search the area. Once the Emergency Services arrive they will be informed of the missing individual(s) and assist with the search.
6. If person is injured Emergency Response Coordinator ensures first aid is given and 911 called.
7. Emergency Response Coordinator will ensure that a person with a radio will be posted at the entrance of the site to guide emergency services into the site directly to the emergency scene.
8. Emergency Response Coordinator obtains and deploys the Critical Incident Management Package, if required.
9. Supervisor notifies Manager, or their designate, and the Health and Safety Department and others as required of the incident
10. Supervisor will instruct employees when emergency is over and they are to resume work. Radio silence will be lifted at this time.
11. The Critical Incident Management process is followed and Internal Incident Investigation begins by the appropriate people.



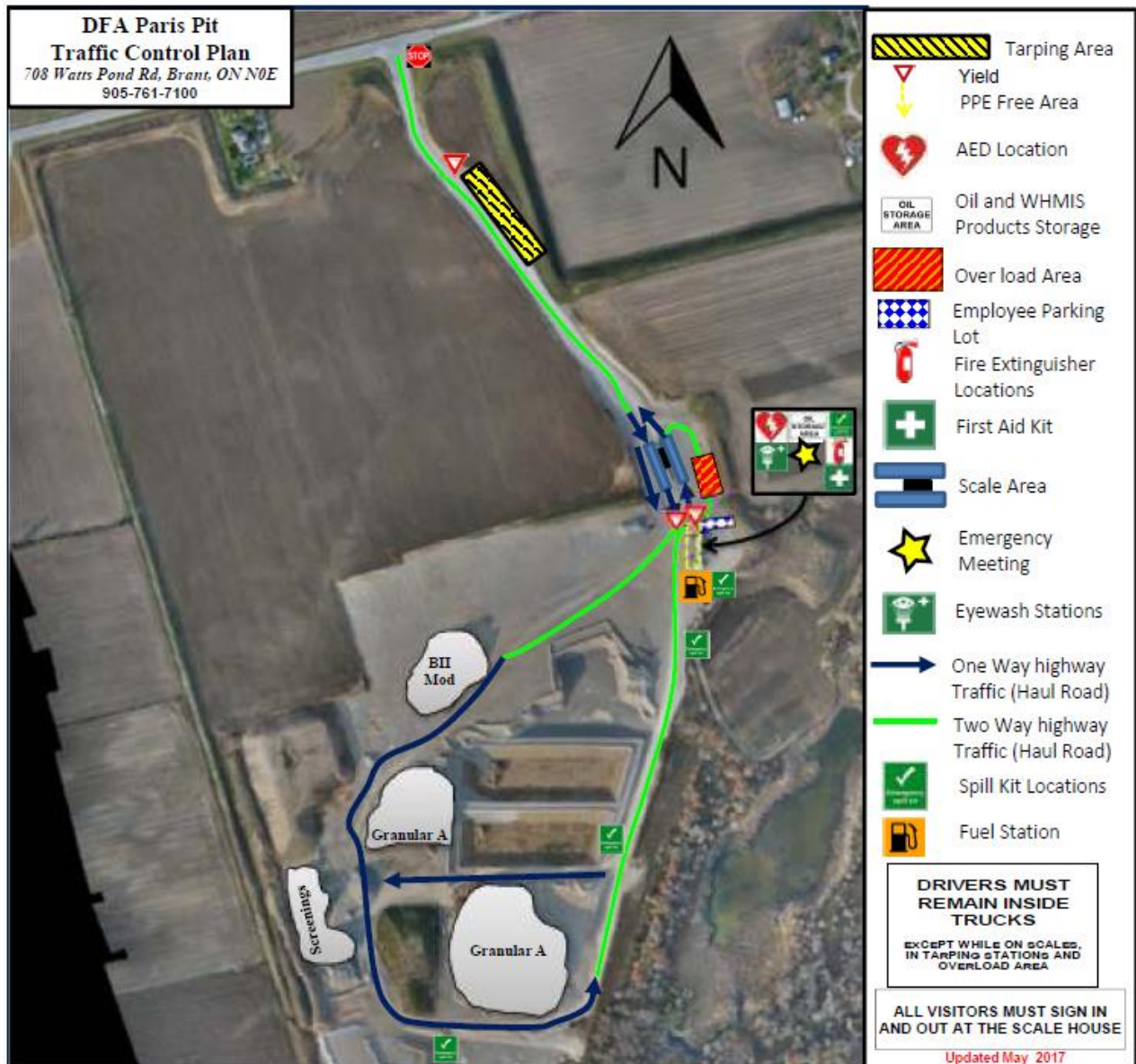
Emergency Response Plan

Emergency Contacts

Site Name:	Paris Pit - 3039	Emergency Meeting Location:	Scale House
911 Address:	708 Watts Pond Road		
Site Phone Numbers:	1-877-332-3004		
Plan Reviewers:	Martin Bradley		
Review Date:	May 15, 2017		
Personnel	Name	Shift / Area / Designate	Phone Number
Emergency Response			911
Emergency Response Coordinator	Martin Bradley		1-519-820-0534
Emergency Response Coordinator			
Supervisor, Customer Service & Dispatch			
Fire Department	Brant Fire Station #1	61 Dundas St E, Paris, ON N3L 3H1	911 519-442-4500
Hospital	Brantford General	200 Terrace Hill Street, Brantford, Ontario, N3R 1G9	911 519-751-5544
Dufferin – Head Office		2300 Steeles Ave W, Concord, ON L4K 5X6	1-800-756-4360 905-761-7500
Electrical	Hydro One	40 Olympic Dr, Dundas L9H 7P5, ON	905-627-6005
MOL - Inspector	Rick Kennedy	1-877-202-0008 24/7 line	1-519-646-3246
First Aider			
First Aider			
First Aider			
Manager	Martin Bradley		1-519-820-0534
Regional Manager	Richard Erdmann		1-647-299-3920
Supervisor	Cody Carey		1-519-497-4673
Environment Dept	Maria Topalovic		1-647-924-5498
Ministry of Labour	Critical Injuries	All	1-877-202-0008
MOECC Spills Action Centre	Reportable Spills	All	1-800-268-6060



Emergency Response Plan



Site Rules

- All visitors must sign in at Scalehouse & PPE must be worn on site.
- Vehicles must yield to heavy equipment. Turn on amber lights/4-ways.
- Do not override or interfere with any safety provision.
- Highway truck drivers must remain in vehicles unless at tarping or overload station.
- Seat belts must be worn.
- No drug or alcohol use permitted on site.
- No cell phone or audible ear phones permitted while driving or working.
- All incidents must be reported to management.
- In case of emergency report to the "Emergency Meeting Area."



Emergency Response Plan

Urgent Care – Walk-In Clinic

The Willett, Paris **238 Grand River St. North**
Paris, ON N3L 2N7 **519-752-7871**

708 Watts Pond Rd

Brant, ON N0E

↑ **Head west on Watts Pond Rd toward Pinehurst Rd/Hwy 24A**

1.4 km

↙ **Turn left onto Pinehurst Rd/Hwy 24A**

➊ **Continue to follow Hwy 24A**

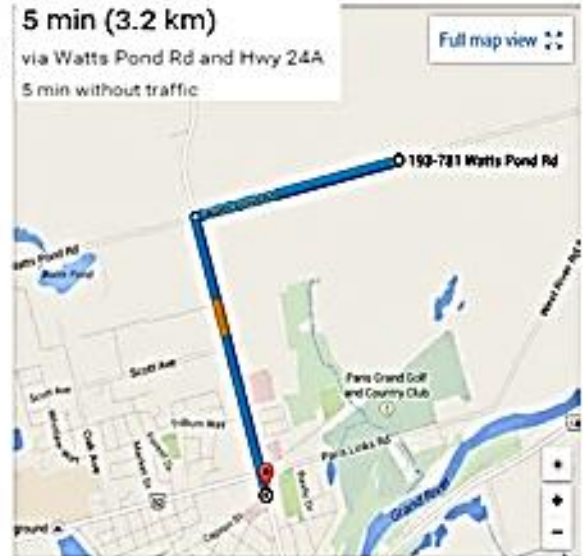
➋ **Destination will be on the right**

1.8 km

5 min (3.2 km)

via Watts Pond Rd and Hwy 24A

5 min without traffic



Brantford General Hospital

708 Watts Pond Rd

Brant, ON N0E

200 Terrace Hill Street Brantford, ON N3R 1G9

519-751-5544

↑ **Head west on Watts Pond Rd toward Pinehurst Rd/Hwy 24A**

1.4 km

↙ **Turn left onto Pinehurst Rd/Hwy 24A**

➊ **Continue to follow Hwy 24A**

3.0 km

↙ **Turn left onto William St/County Rd 50**

400 m

↘ **Turn right onto Willow St/County Rd 51**

550 m

↙ **Turn left onto Dundas St E/Brant County Hwy 2**

700 m

↘ **Turn right onto Paris Rd/Brant County Hwy 2 (signs for Brantford/County Road 2)**

➊ **Continue to follow Paris Rd**

7.8 km

↙ **Turn left onto Terrace Hill St**

➋ **Destination will be on the right**

750 m

19 min (15.0 km)

via Paris Rd

17 min without traffic





Emergency Response Plan

Types of Emergencies

Chemical Spill:

- Refer to Spill Response Work Instruction and the Techniques for Controlling Contaminants Plan.
- In the event of a reportable spill, contact the MOECC Spills Action Centre and the MOECC District Manager.
- Assess the situation, identify the source of the spill, and if safe to do so, attempt to correct the situation until appropriate response personnel arrive on site.
- Direct response personnel to spill site and assist as required.
- All spills must be reported to the CRH Canada Environment Department.

Gas Leak:

- The person who detects the leak immediately informs their Supervisor.
- The Supervisors inform the Emergency Response Coordinator and initiate an evacuation if the Emergency Response Coordinator deems the situation serious.
- If the situation is safe, the main gas valve is to be shut off.
- If the source of the gas leak is a pressurized vessel, an immediate evacuation is required.
- Supervisors will be responsible for opening all doors and vents.
- The Emergency Response Coordinator will instruct someone to contact Police, Fire and other authorities as required.
- Re-entry to the building is forbidden until authorized, by the Emergency Response Coordinator.

Fall Rescue

- This section is for when a person is required to be rescued from a height.
- Refer to XA.05.B02.PR.05 Working at Heights Procedure for generic fall rescue plan.
- Refer to XA.05.B02.FR.12 Fall Rescue Plan developed for the area or the work.
- Equipment available that may be used for fall rescue at the site (check all that apply):
 - Ladder
 - Scaffold
 - Rescue Pole
 - Crane
 - Rescue Rope
 - Elevated Work Platform
- Communication will be use of radios, then cell phone and as required hand signals.
- Conduct annual tests of fall rescue plans and document the findings to improve the plans.

Water Rescue

- Follow work instructions for work where there is a risk of workers falling into water.
- Have the following equipment available when working near water:
 - A ring buoy attached to 15 metres (50 feet) of polypropylene rope 9.5 millimetres (3/8 inch) in diameter
 - A pole or boat hook
 - Lifejackets for each person in the rescue team.
- Lifejackets must be worn by workers exposed to the danger of drowning in water deep enough for the lifejacket to be effective. Workers must use an approved lifejacket when travelling on water or while at a project over or adjacent to water.



Emergency Response Plan

Flood:

- The person who discovers the flood immediately notifies their Supervisor.
- The Supervisor immediately notifies the Site Manager who assesses the damaged and photographs the scene, if necessary.
- The Supervisor will “rope off” the area to be cleaned.
- Maintenance and Janitorial staff will be called to initiate the clean-up.

Electrocution – Power Line Contact:

- Keep others away. Warn everyone not to touch the equipment or its load. That means buckets, outriggers, load lines, and any other part of the machine. Beware of time-delayed relays, even after line damage trips breakers, relays may still try to restore power automatically two or three times.
- Stay on equipment. Don't touch equipment and ground at the same time. In fact, touching anything in contact with the ground can be fatal. If possible, try to move the machine and break contact.
- Break contact. If possible, break contact by moving the equipment clear of the wires or switch off current or turn off master switch. This may not be feasible where contact has welded conductors to equipment, hoist line, or load.
- Move Injured. Using non-mental object move injured person away from electrical contact. Check for breathing and pulse. Administer CPR if necessary.
- Call local utility. Get someone to call the local electrical utility for help. Stay on the equipment until the utility shuts down the line and confirms that power is off. Report every incident of power line contact so that the utility can check for damage that could cause the line to fall later.
- Jump clear. If an emergency such as fire forces you to leave the equipment, jump clear. If part of your body contacts the ground while another part touches the machine, current will travel through you. In cases of high-voltage contact, jump clear and shuffle away in small steps. With voltage differential across the ground, one foot may be in a higher voltage area than the other and the difference could kill you.

Workplace Violence:

- When encountered with an aggressive or violent situation calmly ask the aggressor to stop immediately, once out of harm's way walk away and seek assistance.
- If the aggressor fails to stop, the victim must seek assistance from anyone in the area or if they are alone contact external emergency services.
- Report all cases of violence to your Supervisor and Human Resources.

Emergency Responsibilities

Employees:

- Report the emergency immediately to their Supervisor and / or Management.
- Assisting in emergency response as instructed.
- Participate in emergency preparedness training / drills as required.



Emergency Response Plan

Supervisors:

- Ensure Management and the OH&S Department are aware of emergency immediately.
- In the event of an evacuation, ensure movement to designated areas is orderly.
- Confirm evacuation is complete and all persons are accounted.
- Maintain a copy of this Emergency Response Plan prominently located in the workplace.
- Inspect and maintain all emergency response equipment in the workplace.
- Conduct incident investigations.
- Perform and document test mock exercises annually to ensure the emergency response and evacuation procedures are effective.
- At the conclusion of the test, the findings & recommendations will be evaluated by Site Management and the Joint Health & Safety Committee.

Emergency Response Coordinator:

- Assumes overall command of the emergency and / evacuation.
- Removal and / or protection of any vital equipment and / or records, if possible.
- Orders the evacuation, if required.
- Requests emergency services (i.e. ambulance, fire, clean-up contractors, etc.).
- In the event of an evacuation, ensuring employees move to designated areas in orderly fashion.
- Confirming evacuation is complete and all employees are accounted for.

Plant Manager

- Develop Emergency Response Plan procedures for the work location.
- Review and update procedures on an annual basis or as required.
- Maintain an up-to-date copy of Emergency Response Plan.
- Provide emergency response training to appropriate employees.

District Manager

- Coordinating investigation process of major accidents.
- Notifying appropriate levels of management.

Occupational Health and Safety Department:

- Contact the Ministry of Labour, if required.
- Assist with the investigation process and notifying upper management.

Related Documentation

- XA.05.B08.PO.01 Incident Investigation & Corrective Action
- XA.05.B08.PR.01 Critical Incident Management
- XA.05.B16.PO.01 Early and Safe Return to Work (ESRTW) Occupational Rehabilitation
- XA.05.B06.FR.02 Emergency Response Performance Evaluation
- XA.05.B02.PR.05 Working at Heights Procedure
- XA.05.B02.FR.12 Fall Rescue Plan

APPENDIX IV



Techniques for Controlling Contaminants Plan

Dufferin Aggregates, a division of CRH Canada Group Inc.
Paris Pit

Brant County, Ontario

Date of First Issue: August 18, 2014

Revision Date: May 15, 2017

Revision #: 5

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APPENDICES

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APPENDIX B	EXAMPLE CIRCLE CHECK INSPECTION
APPENDIX C	SPILL RESPONSE WORK INSTRUCTION

1.0 INTRODUCTION

The following report details the Techniques for Controlling Contaminants prepared for the Dufferin Aggregates Paris Pit (Pit) located in Brant County, Ontario. The Pit is licensed under the Aggregate Resources Act (ARA) Licence ID No. 5601. Operations at the Pit include site preparation, aggregate extraction, processing, stockpiling, and shipping, equipment maintenance and fueling, progressive rehabilitation, and field crop production.

This document is being prepared as a Best Management Practice Plan (BMPP) to meet license requirements for developing a plan outlining techniques for controlling contaminants. The purpose of the BMPP is to identify potential sources of contaminants within the Pit and provide details about management techniques used to control these contaminants.

2.0 PROCESS DESCRIPTION

Dufferin Aggregates plans to operate a sand and gravel pit that produces and supplies aggregate to the local market. Operations within the Pit will include:

- Site preparation (removal of overburden)
- Aggregate extraction
- Hauling of aggregate from the extraction face to the processing plant (loaders and or conveyors);
- Aggregate processing (crushing and screening at the processing plant);
- Aggregate stockpiling (depositing of aggregate material using conveyor systems); and
- Aggregate shipping (loading of highway trucks for shipment of aggregate material off-site).
- Progressive rehabilitation

3.0 POTENTIAL SOURCES OF CONTAMINANTS & CONTROL TECHNIQUES

Sources of potential hazard areas at the site that have been identified for the Pit activities include the following:

- Central Portable Processing Equipment
- Portable Crushing Equipment (outside central processing area)
- Mobile Equipment
- Farming & Rehabilitation

3.1 Hazard Identification

A map of the Paris Pit is included in Appendix A, which identifies the potential hazard areas identified above, as well as the wellhead protection areas (WHPA). Table 1 below identifies activities that can take place in each area of the site and should accompany the map when providing training to site staff and contractors. The activities will be discussed thoroughly in the following sections.

Source Water Protection (SWP) policies for Brant County¹ will be followed at the Pit, see Table 1. No activities will take place inside the WHPA-A, see Map in Appendix A. Fuel handling and storage will not take place within the WHPA-A and no fuel storage will take place in any of the WHPAs. There will also be no chemical storage and handling, and snow storage within the WHPAs. Salt storage will not take place at the Pit in any area. The chemical storage and fuel storage will be done in the central processing area only. Mobile fueling activities can only take place for the portable crusher and dragline. All other equipment must be fuelled at the designated fuel station in the central processing area.

Table 1: Hazard Identification Table

Site Area	Approved Activities	Prohibited activities	Spill Control	Additional Notes
Central Processing Area	<ul style="list-style-type: none"> ▶ Fuel handling & storage ▶ Chemical storage ▶ Snow storage 	<ul style="list-style-type: none"> ▶ Salt storage 	<ul style="list-style-type: none"> ▶ Spill kits at plant, fuel station, chemical storage shipping container ▶ Secondary containment on all tanks and drums ▶ Circle check inspections 	Outside WHPAs
Portable Crusher Area	<ul style="list-style-type: none"> ▶ Fuel handling ▶ Minor routine maintenance 	<ul style="list-style-type: none"> ▶ Fuel & chemical storage ▶ Salt storage ▶ Snow storage 	<ul style="list-style-type: none"> ▶ Spill kit and pad ▶ Spill pad/tray used during fueling and minor routine maintenance ▶ Circle check inspections 	Within WHPA-B, C, D
Mobile Equipment (throughout site)	<ul style="list-style-type: none"> ▶ Fuel handling & minor routine maintenance in central area 	<ul style="list-style-type: none"> ▶ Fuel handling & minor routine maintenance outside of central area 	<ul style="list-style-type: none"> ▶ Spill kits or spill pads on all equipment ▶ Circle check inspections 	Potentially within WHPA-B, C, D
Farming & Rehabilitation (throughout site)	<ul style="list-style-type: none"> ▶ Fuel handling & minor routine maintenance in central area ▶ Spreading of manure (farming) or silt pond fines (rehab) 	<ul style="list-style-type: none"> ▶ Salt storage ▶ Pesticides, fuel, chemical storage ▶ Manure storage ▶ Sludge from sewage treatment storage ▶ Fuel handling & minor routine maintenance outside of central area 	<ul style="list-style-type: none"> ▶ Spill kits or spill pads on all equipment 	Potentially within WHPA-B, C, D

3.2 Equipment Inspection

Regular equipment inspections will be completed at the site, which will include circle check inspections of all equipment (mobile, processing equipment). These circle checks will be conducted and documented at the start-up of each shift, before beginning work. The inspections will include checking hydraulic functions of equipment and checking for evidence of fluid leaks or damage that may lead to fluid leaks. An example of a Circle Check Inspection document is included in Appendix B. As a best management practice, a visual circle check inspection will be conducted after an operator's break or lunch, as well as at shut-down, to ensure potential issues are identified prior to starting up the equipment again.

¹ County of Brant SWPP can be accessed here: <http://www.sourcewater.ca/index/document.cfm?Sec=7&Sub1=11>

Any observed leak will be immediately contained with appropriate spill control materials. Any equipment with leaks or damage that could lead to leaks will be immediately removed from service and not returned until repairs are completed.

3.3 Equipment Maintenance

Major equipment maintenance will not take place on-site. Any major repairs will be done off-site by a 3rd party contractor. Routine maintenance (e.g. oil changes) and minor repairs on equipment will be done on-site by a 3rd party contractor. The 3rd party will be provided with spill response training, as discussed in Section 3.7. Drip pans, containers, and/or absorbent pads will be used appropriately during all maintenance or repairs to catch any drips or spillage. If the routine maintenance involves work that needs to be done at the portable crusher (outside of the central processing area) a spill pad/tray must be placed under the area being worked on. Otherwise, routine maintenance will occur in the central processing area, outside of the WHPAs. All equipment maintenance will be documented.

3.4 Fuel & Chemical Storage

Chemical and fuel storage will only be done within the central processing area. All tanks (fuel, used oil, portable tanks on equipment) must have secondary containment, including 3rd party equipment. Chemical storage (oils, antifreeze, windshield washer fluid, used oil) will be stored in a shipping container equipped with secondary containment. The fuel tank will be aboveground, double-walled, and either be stored on a concrete pad or have a containment pad/container installed to catch any spillage from the fuel nozzle and fuel filler ports during fueling. Fuel tanks must be maintained in accordance with the Technical Standards and Safety Act (TSSA).

The significant threat policies identified under Source Water Protection (SWP) will be adhered to at the Pit. As mentioned in section 3.1, fuel handling and storage will not take place within the WHPA-A and no fuel storage will take place in any of the WHPAs. Table 2 below lists the proposed SWP significant threat policies for Brant County regarding fuel.

Table 2: Proposed SWP significant threat policies for fuel (Brant County)

Potential Threat	Area of Concern	Potential Activities	SWP Policy (Brant County)*	Paris Pit Requirements
Fuel Handling	▶ WHPA-A, B	▶ Above grade handling in quantities >2500 Litres	Policy BC-CW-8.1 The handling and storage of fuel of ≤2,500L within a WHPA-A/B must comply with County's education and outreach program outlining requirements for proper maintenance of tanks and steps to be taken if there is a spill or leak detected.	Outside WHPA-A, only in WHPA-B,C,D when portable crushing is outside central processing area
Fuel Storage	▶ WHPA A, B	▶ At or above grade storage in quantities >2500 Litres	Policy BC-CW-8.2 The handling and storage of fuel >2,500L within a WHPA-B will require a Risk Management Plan. Policy BC-CW-8.3 The handling and storage of fuel >2,500 L within a WHPA-A will be prohibited.	Outside WHPAs

*Policies taken from Chapters 13-15 of the Grand River Proposed Source Protection Plan²

² Grand River Proposed SPP can be accessed here: <http://www.sourcewater.ca/index/document.cfm?Sec=7&Sub1=11>

Fuel storage and most fuel handling at the Pit will be located outside of the municipal well capture zones in an area where no SWP policies apply (outside WHPA-D, ie. in the central processing area). Where mobile fueling does occur at the site, it could occur within the WHPA-B, however it will involve quantities less than 2500L and will be conducted in accordance with the education and outreach program, once in place.

3.5 Housekeeping & Inventory

Housekeeping will be a priority at the Pit, to ensure that all work areas are kept in order and to assist site staff with spill prevention. Minimum storage requirements for chemicals (oils, antifreeze, windshield washer fluid) will be implemented, so that only what is required is stored on-site. There will be no excess chemical storage to minimize the potential of larger spills if there is catastrophic failure of storage drums.

3.6 Spill Response & Control Materials

All site staff and 3rd party contractors will adhere to this plan of Techniques for Controlling Contaminants, as well as the Spill Response Work Instruction in Appendix C.

Spill kits will be stationed throughout the site at areas where there is a potential for a spill, which includes the following:

- Fuel station
- Central processing plant
- Chemical storage shipping container

As discussed in section 3.5, all tanks (fuel, used oil, portable tanks on equipment) must have secondary containment, including 3rd party equipment. Chemical storage (oils, antifreeze, windshield washer fluid, used oil) will be stored in a shipping container equipped with secondary containment. The fuel tank will be aboveground, double-walled, and either be stored on a concrete pad or have a containment pad/container installed to catch any spillage from the fuel nozzle and fuel filler ports during fueling.

All equipment (mobile, processing plant) shall contain at minimum a spill pad in order to contain any spills from equipment throughout the site. All 3rd party equipment is required to maintain the same standards. If the 3rd party does not have a spill pad or kit for their equipment, they will be provided with the materials upon arrival at the site. The site will store extra pads for this purpose.

Mobile fueling activities can only take place for the portable crusher when it is outside of the central processing area. All other equipment must be fueled at the designated fuel station (within the central processing area). When mobile fueling activities take place, a containment pad/tray must be placed under the fuel nozzle and fuel filler port while the portable crusher and dragline are being fueled. Drip pans, containers, and/or absorbent pads can all be used during mobile fueling if required. Fueling operations will not be left unattended.

As discussed in section 3.3, during routine maintenance on the portable crusher outside of the central processing area, a spill pad/tray must be placed under the area being worked on. Drip pans, containers, and/or absorbent pads will be used appropriately during all maintenance or repairs on any equipment to catch any drips or spillage.

If spills occur to soil, the following guidelines will be used:

- ▶ Shut-off equipment causing the spill
- ▶ Contain the spill with a drip pan/container
- ▶ Remove solid material by shovel or machine and remove liquids using absorbent materials
- ▶ Excavate all impacted soil (by hand or machine) and place into appropriate waste container/bin/drum to be disposed of properly according to O. Reg. 347.
- ▶ In the event that impacts extend into the water table or there is any doubt about the extent of the impacts, immediately contact a Qualified Person under O. Reg. 153/04 to be retained for further assessment.

If spills occur to water, the following guidelines will be used:

- ▶ Shut-off equipment causing the spill
- ▶ Contain the spill with absorbent booms (petroleum impacts will be visible as a film or sheen on the water surface, therefore booms will limit the impacts)
- ▶ Remove spilled material impacts with absorbent pads or by skimming with a 3rd party vacuum truck
- ▶ Contact a 3rd party emergency response contractor if required
- ▶ For spills that are not easily remediated or for non-petroleum product spills to water, immediately contact a 3rd party emergency response contractor and/or a Qualified Person to assess impacts and direct remediation.

In the event of a spill, the Site Manager and Environment Manager must be notified.

- ▶ Martin Bradley, Site Manager – 519-820-0534
- ▶ Maria Topalovic, Environment Manager – 647-924-5498

3.7 Contractors

All contractors are required to be Browz approved to ensure that they have met all health and safety requirements. Contractors will be provided with a site orientation, which will include spill response training. They will be provided with the hazard identification map in Appendix A so they are aware of activities that are prohibited in certain areas of the site.

As mentioned in Section 3.6, if the contractor does not have a spill pad or kit for their equipment, they will be provided with these materials. If they do have a spill kit, it will be inspected by site staff to ensure it is adequate. All 3rd party equipment with portable fuel tanks must have secondary containment.

4.0 TRAINING

As part of maintaining best management practices for controlling contaminants, training shall be supplied to all site employees as follows:

- Annual training for site employees on this BMPP and the Spill Response Work Instruction
- Annual Environment Talk (Toolbox Talk) for site employees
- New hires to receive training on this BMPP and the Spill Response Work Instruction
- Site Management and applicable employees will review the components of this BMPP on an annual basis, during site audits

Training records will be documented and kept on-site.

CRH Canada Inc. employees will review the components of this BMPP and the annual refresher training materials with site management on an annual basis, during EMS audits.

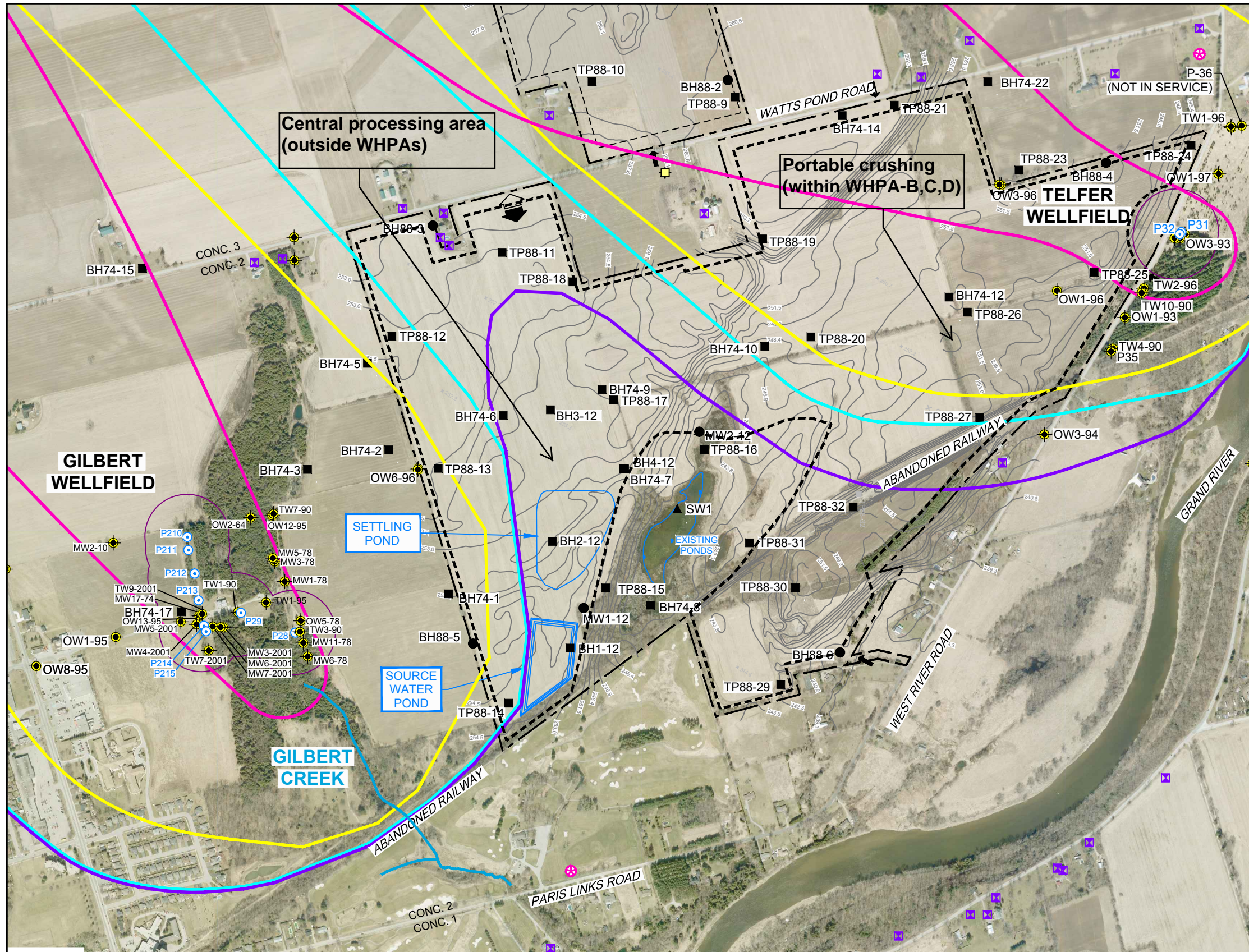
5.0 IMPLEMENTATION SCHEDULE

The Techniques for Controlling Contaminants Plan will be implemented when activities begin at the site. This BMPP is intended as a guide to commit the site to continuous improvement in spill response. As processes change over time, annual reviews of this plan should be carried out and modifications to this plan should be considered.

6.0 REVISION HISTORY

List of document changes made:		
Date	Revision #	Modifications
Sept 4, 2014	1	Added reference to the County of Brant SWPP in Section 3.1 and reference to the Grand River Proposed SPP in Section 3.4. Minor revisions made to clarify wording in sections 3.1 and 3.6 based on communication with the Ministry of Environment & Climate Change.
Oct 6, 2015	2	Updated company name and logo to CRH Canada Group Inc.
Feb 24, 2016	3	Updated staff titles and contacts. Updated Spill Response Work Instruction as part of EMS update for company name change.
April 12, 2017	4	Updated contact info in section 3.6 due to staffing changes.
May 15, 2017	5	Updated based on comments received from the County of Brant.

APPENDIX A



- LEGEND**
- 253.0 — CONTOUR ELEVATION
 - - - LICENSED BOUNDARY
 - - - LIMIT OF EXTRACTION
 - - - EASEMENT
 - ➡ PROPOSED ENTRANCE/EXIT
 - ➡ EXISTING FIELD ENTRANCE
 - SPOT ELEVATION
 - WELLFIELD WHPA-A (100m) (FUTURE PUMPING RATES) (FIGURE 4-1, WNMC, 2010)
 - ZONE BOUNDARY WELLFIELD WHPA-B (2 YEARS) (FUTURE PUMPING RATES) (FIGURE 4-1, WNMC, 2010)
 - ZONE BOUNDARY WELLFIELD WHPA-C (5 YEARS) (FUTURE PUMPING RATES) (FIGURE 4-1, WNMC, 2010)
 - ZONE BOUNDARY WELLFIELD WHPA-D (25 YEARS) (FUTURE PUMPING RATES) (FIGURE 4-1, WNMC, 2010)
 - EXISTING CAPTURE ZONES (2006 - 2008 PUMPING RATES) (FIGURE 5-1, WNMC, 2010)
 - MW2-12 MONITORING WELL (CRA, JULY 2012)
 - BH1-12 BOREHOLE (CRA, JULY 2012)
 - TP88-11 TEST PIT (JAGGER HIMS LTD., 1988) (APPROXIMATE LOCATION)
 - BH88-5 MONITORING WELL (JAGGER HIMS LTD., 1988)
 - BH74-10 BOREHOLE (FARVOLDEN, 1974) (APPROXIMATE LOCATION)
 - ▲ SW1 SURFACE WATER MONITORING LOCATION
- WWR PRIMARY USE**
- ⊗ DOMESTIC WATER SUPPLY WELL (APPROXIMATE LOCATION)
 - ⊙ MUNICIPAL MONITORING WELL
 - ⊕ PUBLIC WATER SUPPLY WELL
 - ⊗ IRRIGATION WELL (APPROXIMATE LOCATION)
 - ⊕ LIVESTOCK WELL (APPROXIMATE LOCATION)

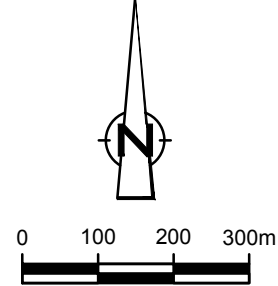


figure 2.1
 STUDY AREA
 PTTW SUPPORTING HYDROLOGIC AND HYDROGEOLOGIC STUDY
 DUFFERIN PARIS PIT
 County of Brant, Ontario

APPENDIX B



GENERAL EQUIPMENT DAILY LOG

EQUIPMENT ID#:
EQUIPMENT NAME:
HR. METER (FINISH):
HR. METER (START):
TOTAL HRS (F-S):

DATE:
SHIFT:
OPERATOR:
SUPERVISOR:

- ✓ CHECKED AND OK
- ✗ NOT SATISFACTORY - EXPLAIN IN REMARKS
- NA NOT APPLICABLE

GREASER INITIALS		REMARKS	REMARKS
FUEL			HOSES
ENGINE OIL LEVEL			PINS
HYDRAULIC OIL LEVEL			BUCKET / BLADE / BOOM
GREASER FILLED			TIRES
TRANSMISSION OIL LEVEL			LADDER AND MIRRORS
RADIATOR FLUID			DOORS AND LOCKS
ENGINE BELTS			WINDOWS AND WIPERS
RADIATOR CLEAN			SEAT BELTS
BRAKE TEST			RADIO FUNCTN (CHAN. __)
LIGHTS & HORN			CONTROLS AND SIGNALS
BACK-UP ALARM & STROBE			FIRE EXTINGUISHER
See operators manual for inspection details. Boom inspection specific to the Telehandler.			

OTHER COMMENTS

NOTE: Safety Components of this machine must be checked prior to initial use.
Do not use an unsafe machine. Report defects to your Supervisor for repairs.

OPERATORS INITIALS	
SUPERVISORS INITIALS	

APPENDIX C



Control Number XA.03.101

✓ Classification	Pertains to :		
- Policy	E	Q	OH&S
- Procedure	Yes	No	No
✓ - Work instruction	HAC number		
- Form	N/A		
- Other (describe):			

Subject **Spill Response**
WORK INSTRUCTION

Revision number 5	Date of revision 12.February.2016	Date of 1st issue May 27, 2010
Originating department CRH Canada Group Inc. Environment, Property & Permitting	Prepared by Elizabeth Lopes Title Environmental Coordinator	Approved by Maria Topalovic Title Manager, Environment

Distribution EMS Binder **Page 1 of 9**

1.0 PURPOSE:

To protect human health and safety, prevent or mitigate adverse environmental impacts, and ensure that Dufferin Aggregate (DFA) and Dufferin Concrete (DC)/Ontario Redimix (ORM) sites properly manage spills and follow consistent reporting procedures. To enable better tracking of the causes of spills and facilitate the implementation of improved control measures.

2.0 SCOPE:

This Work Instruction (WI) outlines response actions for potential spills of any size at all DFA and DC/ORM facilities. The WI details spill response procedures that will minimize potential health and safety hazards, environmental damage, and clean-up efforts.

3.0 DEFINITIONS:

- Adverse Impact: the impairment of the quality of the natural environment, injury or damage to property, plant or animal life, harm or material discomfort to any person, loss of enjoyment of the normal use of property or interference with the normal conduct of business.
- Containment: an impervious structure preventing a liquid or material from entering the natural environment
- Corrective Action: action to eliminate the cause of a detected non conformity
- Natural Environment: air, land and water, or any combination or part thereof
- Non – conformity: failure to conform to regulatory requirements, accepted environmental standards, and/or the operating standards established by a company.
- Non Reportable Spill: a spill that needs to be reported internally only
- Reportable Spill: a spill that must be reported to the Ministry of the Environment & Climate Change (MOECC) Spills Action Centre (SAC)
- Spill: a discharge of any substance (liquid, powder or solid) into the natural environment (air, land or water) from a structure, vehicle or other container that is abnormal in quality or quantity.
- Subject Waste: hazardous or liquid industrial waste as defined by O. Reg. 347 (Ex: waste oil, waste antifreeze)

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4.0 RESPONSIBILITY:

All employees at all DFA and DC/ORM sites are responsible for implementing the procedures of spill response described in this WI.

The Manager at each site is responsible for ensuring that the WI is implemented.

The Environment Department is responsible for revising and reviewing the WI.

The Manager, Environment is responsible for authorizing the WI.

5.0 WORK INSTRUCTION:

5.1 Preparedness

5.1.1 Preparation for the possibility of a spill or release of any product at DFA and DC/ORM sites is the key to minimizing impact to the natural environment, employee health and safety, and private property.

5.1.2 Spills can occur at anytime:

- During transportation to or from sites;
- While loading or un-loading products on site and during delivery;
- Leaks from storage containers or piping;
- From third parties working on site; and,
- During regular handling of products.

5.1.3 To be prepared for any spill incident, there are universal product spill kits located at every DFA and DC/ORM site. The spill kits shall be:

- Accessible in areas where activities that pose a risk may occur, with the locations documented in the Site Emergency Response Plan (DFA) or Site Specific Contingency Plan (DC/ORM). Consideration should be given to service vehicles being fitted with compact mobile spill kits.
- Stored in a drum or sealed container, and hold the appropriate materials for the products used in the area, such as:
 - A list of contents;
 - Chemical resistant gloves;
 - Absorbent pillows, pads and socks;
 - Plastic bags, sheets or tarps and ties;
 - Drain covers (for maintenance shops); and,
 - Goggles and/or safety glasses.

5.1.4 Being prepared for a spill includes awareness and understanding of the site specific conditions in which you work, including:

- The locations of the nearest water bodies (creeks, rivers, ditches, catch basins, floor drains and manholes);
- Refer to Site Emergency Response Plan (DFA) or Site Specific Contingency Plan (DC/ORM) for a map of all surrounding environmental receptors (water bodies, residential dwellings, commercial zones, etc.)
- Knowledge and awareness of the products that could be released;
- Location of the on-site spill kit(s) and how to use the equipment in the kits;

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- Locations of Material Safety Data Sheets (MSDS) for all products on site;
- Location of centralized list of hazardous chemicals identified in the EMS;
- Correct reporting procedures for all levels of spills and environmental releases; and,
- Location of the nearest hospital, fire station and police station.

5.1.5 In order to comply with environmental legislation, it is essential that a facility respond quickly and appropriately to a spill, taking all necessary measures to minimize the impact of the spill or release.

Response activities include:

- Internal and external notification;
- Situation assessment (**see Section 5.3 for spill categories**), and;
- Incident specific procedures

5.1.6. The site manager or designee shall ensure that:

- Best management practices are applied to all activities that may result in a spill, such as fuel transfer from storage tanks, vehicle operation, storage of chemical products, handling of subject or hazardous waste and handling of concentrated dust suppressants;
- Third parties handling a regulated substance have a spills management plan and spill kits, or are supervised by trained employees; and,
- MSDS for products used on site (gasoline, diesel, solvents, admixtures, etc.) are available

5.2 Response

The guiding principal of spill response is safety: always know what product you are dealing with, and always use the appropriate personal protective equipment (PPE). If there is uncertainty regarding what the product is, or what PPE is required, refer to the instructions stated on the MSDS, or report the spill and wait for instructions. After assessing the situation for potential hazards (such as fire, explosion, general safety, etc) ***the following response shall be taken for all levels of spills if it is safe to do so:***

5.2.1 Any DFA or DC/ORM employee noticing a spill shall:

- Cease all activities that are fire hazards. Small work areas shall be evacuated immediately as per Health and Safety Procedures until the supervisor is contacted;
- Immediately eliminate the source of the spill (i.e. plug leak, turn off valve, or shut off source);
- If possible, contain the spill and block path to drains or surface water by using the materials provided in the Spill Kits, and begin the cleanup procedure;
- Cease all pumping or gravity discharge of water in the affected area (DFA);
- Communicate to supervisors/managers:
 - Substance spilled, approximate quantity, location and time
 - Status of containment, self contained or free flowing
- Assist the supervisor in completing the Incident Investigation Report (XA.05.B08.FR.01)

5.2.2 The most senior employee at the time of the incident shall:

- Identify the spill category (see section 5.3);
- Notify all applicable parties as per section 5.3.2

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- Supervise the containment and cleanup of the spill (unless a supervisor/manager has arrived to assume this responsibility);
- Report all spills in accordance with site specific permits (i.e. submission of a written report to the MOECC District Manager if it is required under the site Environmental Compliance Approvals). Contact the CRH Canada Environment Department for assistance.
- Contact an Emergency Response Contractor (listed in Appendix A) if cleanup cannot be performed by site staff. Request documentation of spill cleanup and removal of impacted material from site.
- Prepare the Incident Investigation Report for the spill and submit to the CRH Canada Environment Department; and,
- Ensure all cleanup materials are appropriately accounted for and disposed of, and the Spill Kit is restocked accordingly.

5.3 Spills Classification and Notification

For additional information on classifying spills as either reportable or non-reportable, refer to the MOECC Spill Reporting Requirements Flowchart, in Appendix B.

5.3.1 REPORTABLE Spills

A Reportable Spill is an accidental or intentional release of any product, liquid or otherwise, that can possibly cause harm to life, property or the natural environment. A spill is considered REPORTABLE if one or more of the following occurs:

- The release of any product **greater than 100L** into the natural environment;
- The release of any quantity of a product that **enters or has the potential to enter any waters either directly or through drainage structures** (eg: catch basin, floor drain, or direct to a watercourse or DFA settling pond);
- Any **fire** on or off site that requires external assistance to control;
- The release or discharge of any quantity from a **stationary source** that enters the natural environment;
- The release or discharge of any product from a vehicle/mobile equipment when greater than 100L spills outside of an engineered containment structure;
- The release or discharge of any quantity of an **unknown product or any product of unknown quantity**, or;
- The release of **subject waste in any quantity** into the natural environment

5.3.2 Notification for REPORTABLE Spills

If a reportable spill occurs on or offsite, DFA and DC/ORM employees are responsible for ensuring that it is **immediately** communicated to the following parties:

- **Site Manager and/or Supervisor**
- **Environment Department**
- **MOECC Spills Action Centre (SAC) at 1-800-268-6060**
- **Local Municipality (if applicable)**

All employees must be prepared to contact the MOECC SAC in the event of a reportable spill should any of the above listed parties be unavailable. Once personnel have reported a Reportable Spill, they are

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considered the supervisor of the situation and shall remain on-site until an alternative representative arrives to take over the situation.

The DFA or DC/ORM employee responsible for contacting the SAC shall provide the following information:

- Report what you know about the spill including:
 - The name or type of product
 - The quantity of the product released
 - Weather conditions
 - Response measures and status of containment
- Ask the MOECC SAC representative for the Incident Reference Number
- If initial information provided to SAC changes significantly then updated information must be reported as soon as possible under the given circumstances.

5.3.3 Non-Reportable Spills

A non-reportable spill is an accidental or intentional release of any product, liquid or otherwise, that is not likely to cause immediate harm to life, property or the natural environment. A spill is considered NON-REPORTABLE if one or more of the following occurs:

- The off-site release of concrete that does not have the potential to enter a watercourse (as defined in section 5.3.1);
- The on-site release of cement powder from a delivery tanker, silo or dust collection equipment, that does not result in any amount of cement powder migration off-site; or,
- The release of any product on-site that is contained in an engineered containment structure that does not have the potential to affect any watercourse either directly or through drainage structures

Notification for NON-REPORTABLE Spills

All employees must be prepared to coordinate the spill response until the appropriate personnel arrive on site, and follow the response outlined in Section 5.2 of this procedure. Employees shall take all necessary measures to minimize harm to life, property and the natural environment, provided it is safe to do so.

For any level of spill an Incident Investigation Form must be filled out and sent into the CRH Canada Environmental Department within 24 hours of the incident.

5.4 AFTER INCIDENT PROCEDURES

5.4.1 The Site Manager and Manager, Environment is responsible for determining when the spill cleanup is complete, and retaining all documentation and pictures to confirm that cleanup was properly completed, including documentation of the waste removal and disposal.

- For spills to water, the spill cleanup is considered complete when no traces of the spill can be detected. The MOECC may recommend that a water quality analysis be completed by a Canadian Association for Environmental Analytical Laboratories (CAEAL) accredited laboratory to confirm that the water quality complies with MOECC criteria.

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- 5.4.2 Once the spill response and clean-up have been completed, a review will be done to assess the actions undertaken and recorded on the Incident Investigation Report.
- 5.4.3 The review will be scaled to the severity of the incident, and should be completed by all those involved in the incident, including but not limited to the following personnel:
- Individual reporting the spill
 - Site Supervisor and Manager
 - Manager, Environment
- 5.4.4 All reports and MOECC correspondence will be kept on-file in a central location for the duration of the life of the site where the Spill Response occurred.
- 5.4.5 Disposal of all spilled material and any materials used for the cleanup will be done in accordance with the Hazardous Waste Management Work Instruction.

6.0 COMMUNICATIONS:

The CRH Canada Environment Department is responsible for communicating this procedure to the appropriate personnel.

7.0 TRAINING REQUIREMENTS:

Plant teams at all DFA and DC/ORM sites must be trained on this WI by the CRH Canada Environment Department.

Plant and site teams are responsible to communicate the requirements of this WI and the associated Environment Talk when issued.

8.0 RELATED DOCUMENTATION:

These documents shall not be destroyed until as directed by the Documents Management Procedure (XA.08.101):

XA.03.102.TR1 Fuel Handling Training
 XA.03.101.TR1 Spill Response Training
 XA.05.B08.FR.01 Incident Investigation Report
 XA.03.105 Hazardous Waste Management
 Site Specific Contingency Plan (DC/ORM)
 Site Specific Emergency Response Plan (DFA)
 Site Specific Spill Plans (any related plans required by site specific approvals)

9.0 REVISIONS:

List of document changes made:			
Date	Revision #	Revision	Revised by
Dec 21, 2010	1	General cleanup and change of staff titles. Addition of reference to training material in Section 9.0. Document # revised as per XA.08.103.	JD
Mar & Apr 2012	2	Changed "SOP" to "WI", additions to "Records", "Related Documents" and "References" sections, added wording into section 5.1.2. Updated Appendix A. Added reference to Documents Management Procedure.	BT/JD
Aug 5, 2014	3	General cleanup and change of staff. Minor changes throughout sections 5.2 & 5.3 to consolidate and provide clarification.	MT
Nov 27, 2015	4	Additional wording to Section 5.3.3 regarding on-site cement spills	MT
Feb 12, 2016	5	Updated references for company name change to CRH.	EL

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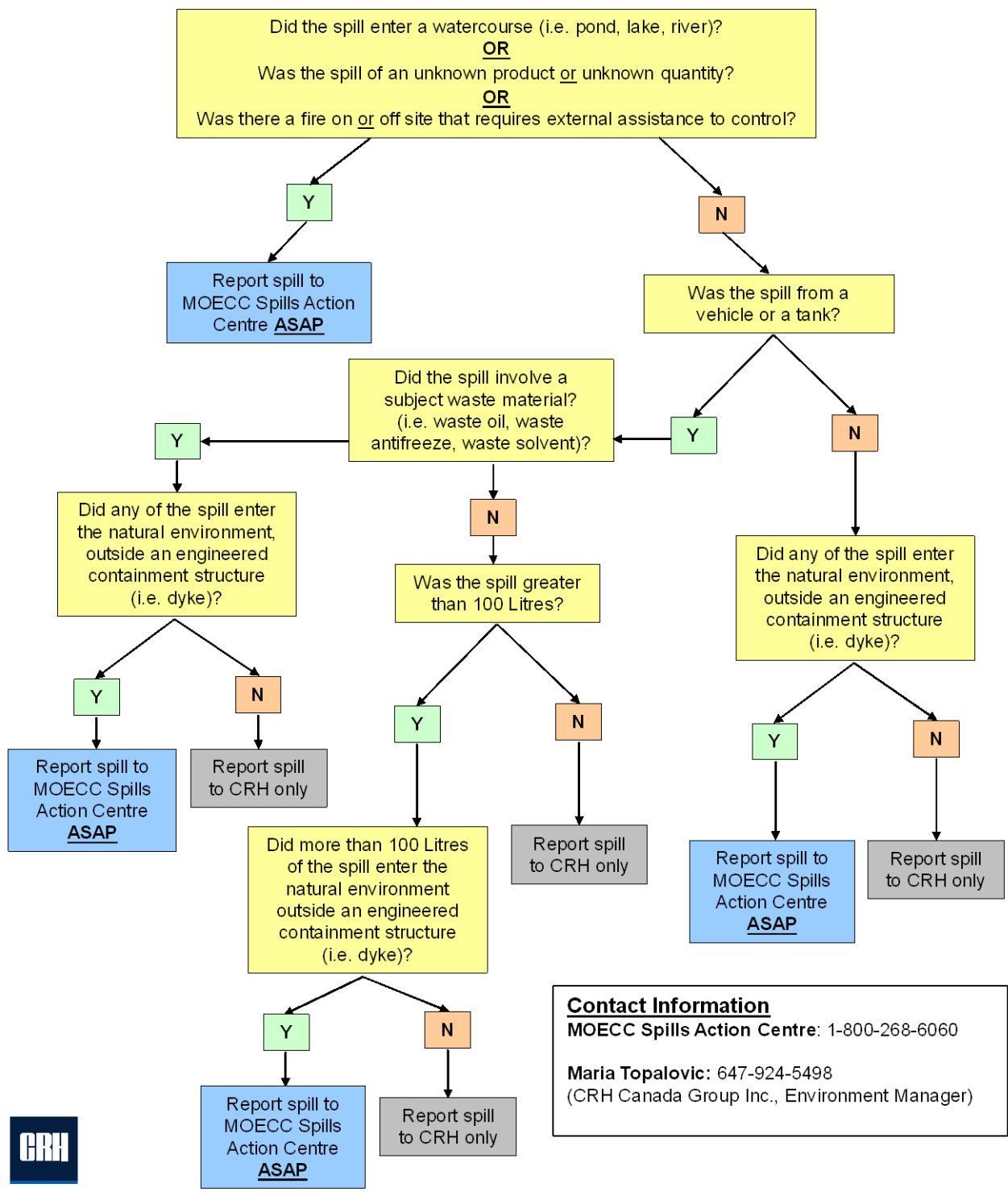
APPENDIX A: EMERGENCY RESPONSE CONTRACTOR LIST

The following contractors are registered with BROWZ and therefore approved by CRH Canada to assist sites in spill response.

Company Name	Location	Phone #	Services
A&G the Road Cleaners	Toronto	905.857.5756	Sweeping, vacuum sweeping, and flushing
Centennial Sweeping	Toronto (Weston)	416-741-4141	Sweeping & flushing, equipment rentals
Safety-Kleen Canada Inc.	Ancaster Brampton Breslau London Oshawa	905-648-3270 905-840-0118 1-800-265-2792 519-685-3040 905-579-3221	Contaminated haulage & disposal, spill response
Smits Tank Maintenance	Oakville	905-845-6820	Wet/dry vac truck, pressure wash, confined space, spill response, hazardous waste disposal
Veolia Environmental Services	Hamilton Division (spills): General services:	905-547-5661 1-800-461-3267	Wet/dry vac truck, pressure wash, hazardous waste disposal, spill response

APPENDIX B: SPILL REPORTING REQUIREMENTS FLOWCHART

SPILL REPORTING REQUIREMENTS



Contact Information
 MOECC Spills Action Centre: 1-800-268-6060
 Maria Topalovic: 647-924-5498
 (CRH Canada Group Inc., Environment Manager)



APPENDIX V

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 3.1

Revision Date 2017/04/20

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SECTION 1. IDENTIFICATION

Product name : DIESEL FUEL

Synonyms : Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed.

Product code : 102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994

Manufacturer or supplier's details
Petro-Canada
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number
Suncor Energy: +1 403-296-3000;
Canutec Transportation: 1-888- 226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes)
Odour	Mild petroleum oil like.

GHS Classification

Flammable liquids : Category 3

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- Acute toxicity (Inhalation) : Category 4
- Skin irritation : Category 2
- Carcinogenicity : Category 2
- Specific target organ toxicity - single exposure : Category 3 (Central nervous system)
- Specific target organ toxicity - repeated exposure : Category 2 (Liver, thymus, Bone)
- Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.

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Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact
Skin Absorption

Target Organs : Skin
Eyes
Respiratory Tract

Inhalation : May cause respiratory tract irritation.
Inhalation may cause central nervous system effects.
Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Skin : Causes skin irritation.

Eyes : Causes eye irritation.

Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Aspiration hazard if swallowed - can enter lungs and cause damage.

Aggravated Medical Condition : None known.

Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

Fuel Oil No. 1

8008-20-6

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
fuels, diesel	68334-30-5	70 - 100 %
fuel oil no. 2	68476-30-2	
kerosine (petroleum)	8008-20-6	
kerosine (petroleum), hydrodesulfurized	64742-81-0	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 25 %
Soybean oil, Methyl ester	67784-80-9	0 - 5 %
Rape oil, Methyl ester	73891-99-3	
Fatty acids, tallow, Methyl esters	61788-61-2	

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.
- In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.
- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO₂)
Water fog.
Foam
- Unsuitable extinguishing media : Do NOT use water jet.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), sulphur compounds (H₂S), smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Use only with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.

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Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
kerosine (petroleum)	8008-20-6	TWA	200 mg/m ³ (total hydrocarbon vapor)	CA BC OEL
		TWA	200 mg/m ³ (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
kerosine (petroleum), hydrodesulfurized	64742-81-0	TWA	200 mg/m ³ (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m ³ (As total hydrocarbon vapour)	ACGIH

Engineering measures : Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

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Hand protection Material	: neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	: Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	: Wash contaminated clothing before re-use.
Hygiene measures	: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Bright oily liquid.
Colour	: Clear to yellow (This product may be dyed red for taxation purposes)
Odour	: Mild petroleum oil like.
Odour Threshold	: No data available
pH	: No data available
Pour point	: No data available
Boiling point/boiling range	: 150 - 371 °C (302 - 700 °F)
Flash point	: > 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	: 225 °C (437 °F)
Evaporation rate	: No data available
Flammability	: Flammable in presence of open flames, sparks and heat. Va-

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pours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.

Upper explosion limit	: 6 %(V)
Lower explosion limit	: 0.7 %(V)
Vapour pressure	: 7.5 mmHg (20 °C / 68 °F)
Relative vapour density	: 4.5
Relative density	: 0.8 - 0.88
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: No data available
Viscosity	
Viscosity, kinematic	: 1.3 - 4.1 cSt (40 °C / 104 °F)
Explosive properties	: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	: Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Reactive with oxidising agents and acids.
Hazardous decomposition products	: May release CO _x , NO _x , SO _x , H ₂ S, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact
Skin Absorption

Acute toxicity

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DIESEL FUEL

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Version 3.1

Revision Date 2017/04/20

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Product:

- Acute oral toxicity : Remarks: No data available
- Acute inhalation toxicity : Remarks: No data available
- Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No data available

Components:

fuels, diesel:

- Acute oral toxicity : LD50 (Rat): 7,500 mg/kg,
- Acute dermal toxicity : LD50 (Mouse): 24,500 mg/kg,

fuel oil no. 2:

- Acute oral toxicity : LD50 (Rat): 12,000 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): 4.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

kerosine (petroleum):

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

kerosine (petroleum), hydrosulfurized:

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 hrs
Test atmosphere: dust/mist
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

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No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water

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courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

Contaminated packaging : Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 1202
Proper shipping name : Diesel fuel
Class : 3
Packing group : III
Labels : Class 3 - Flammable Liquid
Packing instruction (cargo aircraft) : 366

IMDG-Code

UN number : UN 1202
Proper shipping name : DIESEL FUEL

Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

National Regulations

TDG

UN number : UN 1202
Proper shipping name : DIESEL FUEL

Class : 3
Packing group : III
Labels : 3
ERG Code : 128
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

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This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The components of this product are reported in the following inventories:

DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
EINECS	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2017/04/20

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

GASOLINE, UNLEADED



000003000644

Version 2.0

Revision Date 2017/04/20

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SECTION 1. IDENTIFICATION

Product name : GASOLINE, UNLEADED

Synonyms : Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean, SuperClean WinterGas, RegularClean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blendstock for Oxygenate Blending, Conventional Gasoline, RUL, MUL, SUL, PUL.

Product code : 100127, 100126, 101823, 100507, 101811, 101814, 100141, 101813, 101810, 101812, 100063, 101822, 100138, 101821, 100064, 101820, 101819, 100506, 101818, 101816, 101817, 100488

Manufacturer or supplier's details
Petro-Canada
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number
Suncor Energy: +1 403-296-3000;
Canutec Transportation: 1-888- 226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recreational vehicles.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Clear liquid.
Colour	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
Odour	Gasoline

GHS Classification

Flammable liquids : Category 1

Skin irritation : Category 2

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- Germ cell mutagenicity : Category 1B
- Carcinogenicity : Category 1A
- Reproductive toxicity : Category 2
- Specific target organ toxicity - single exposure : Category 3 (Central nervous system)
- Specific target organ toxicity - repeated exposure : Category 1
- Aspiration hazard : Category 1

GHS label elements

- Hazard pictograms : 

- Signal word : Danger

- Hazard statements : Extremely flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Suspected of damaging the unborn child.
Causes damage to organs () through prolonged or repeated exposure.

- Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable

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for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

- Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact
- Target Organs : Blood
Immune system
- Inhalation : Inhalation may cause central nervous system effects.
Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
- Skin : Causes skin irritation.
- Eyes : May irritate eyes.
- Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Aspiration hazard if swallowed - can enter lungs and cause damage.
- Chronic Exposure : Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders.
- Aggravated Medical Condition : None known.

Other hazards

None known.

IARC

Group 1: Carcinogenic to humans

Benzene 71-43-2

OSHA

OSHA specifically regulated carcinogen

Benzene 71-43-2

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NTP Known to be human carcinogen
Benzene 71-43-2

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
gasoline, natural	8006-61-9	95 - 100 %
toluene	108-88-3	1 - 40 %
benzene	71-43-2	0.5 - 1.5 %
ethanol	64-17-5	0.1 - 0.3 %

SECTION 4. FIRST AID MEASURES

If inhaled : Artificial respiration and/or oxygen may be necessary.
Move to fresh air.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.

Most important symptoms and effects, both acute and delayed : None known.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO₂)
Water fog.
Foam
- Unsuitable extinguishing media : Do NOT use water jet.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.
-

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Use only with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

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Conditions for safe storage : Store in original container.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Keep in a dry, cool and well-ventilated place.
 Keep in properly labelled containers.
 To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis		
gasoline, natural	8006-61-9	TWA	300 ppm 900 mg/m ³	OSHA P0		
		STEL	500 ppm 1,500 mg/m ³	OSHA P0		
		TWA	500 ppm 2,000 mg/m ³	OSHA Z-1		
		STEL	500 ppm 1,500 mg/m ³	CAL PEL		
		PEL	300 ppm 900 mg/m ³	CAL PEL		
toluene	108-88-3	TWA	20 ppm	ACGIH		
		TWA	100 ppm 375 mg/m ³	NIOSH REL		
		ST	150 ppm 560 mg/m ³	NIOSH REL		
		TWA	200 ppm	OSHA Z-2		
		CEIL	300 ppm	OSHA Z-2		
		Peak	500 ppm (10 minutes)	OSHA Z-2		
		TWA	100 ppm 375 mg/m ³	OSHA P0		
		STEL	150 ppm 560 mg/m ³	OSHA P0		
		PEL	10 ppm 37 mg/m ³	CAL PEL		
		C	500 ppm	CAL PEL		
		STEL	150 ppm 560 mg/m ³	CAL PEL		
		benzene	71-43-2	TWA	0.5 ppm	ACGIH
				STEL	2.5 ppm	ACGIH
TWA	0.1 ppm			NIOSH REL		
ST	1 ppm			NIOSH REL		
TWA	10 ppm			OSHA Z-2		
CEIL	25 ppm			OSHA Z-2		
Peak	50 ppm (10 minutes)			OSHA Z-2		
PEL	1 ppm			OSHA CARC		
STEL	5 ppm			OSHA CARC		

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		PEL	1 ppm	CAL PEL
		STEL	5 ppm	CAL PEL
ethanol	64-17-5	TWA	1,000 ppm 1,900 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,900 mg/m3	OSHA P0
		STEL	1,000 ppm	ACGIH
		PEL	1,000 ppm 1,900 mg/m3	CAL PEL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of work-week	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI

Engineering measures : Use only in well-ventilated areas.
 Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
 Material : polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness,

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will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	: Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	: Wash contaminated clothing before re-use.
Hygiene measures	: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Clear liquid.
Colour	: Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
Odour	: Gasoline
Odour Threshold	: No data available
pH	: No data available
Pour point	: No data available
Boiling point/boiling range	: 25 - 225 °C (77 - 437 °F)
Flash point	: -50 - -38 °C (-58 - -36 °F) Method: Tagliabue.
Auto-Ignition Temperature	: 257 °C (495 °F)
Evaporation rate	: No data available
Flammability	: Extremely flammable in presence of open flames, sparks, shocks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
Upper explosion limit	: 7.6 %(V)

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Lower explosion limit	:	1.3 %(V)
Vapour pressure	:	< 802.5 mmHg (20 °C / 68 °F)
Relative vapour density	:	3
Relative density	:	0.685 - 0.8
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Vapours may form explosive mixtures with air.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	:	May release CO _x , NO _x , phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: No data available
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

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Components:

toluene:

- Acute oral toxicity : LD50 (Rat): 5,580 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): 7585 ppm
Exposure time: 4 h
Test atmosphere: dust/mist
- Acute dermal toxicity : LD50 (Rabbit): 12,125 mg/kg,

benzene:

- Acute oral toxicity : LD50 (Rat): 2,990 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): 13700 ppm
Exposure time: 4 h
Test atmosphere: dust/mist
- Acute dermal toxicity : LD50 (Rabbit): > 8,240 mg/kg,

ethanol:

- Acute oral toxicity : LD50 (Rat): 7,060 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): > 32380 ppm
Exposure time: 4 h
Test atmosphere: vapour

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

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STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

Contaminated packaging : Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 1203
Proper shipping name : Gasoline
Class : 3
Packing group : II
Labels : Class 3 - Flammable Liquid
Packing instruction (cargo aircraft) : 364

IMDG-Code

UN number : UN 1203
Proper shipping name : GASOLINE

Class : 3
Packing group : II
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

National Regulations

49 CFR

UN/ID/NA number : UN 1203
Proper shipping name : Gasoline

Class : 3
Packing group : II
Labels : Class 3 - Flammable Liquid
ERG Code : 128
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

DSL On the inventory, or in compliance with the inventory
TSCA All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
EINECS On the inventory, or in compliance with the inventory

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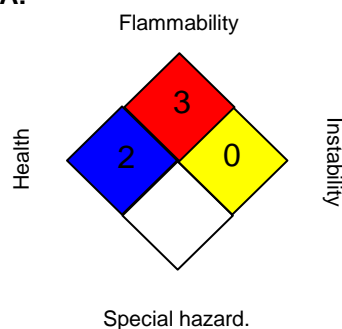
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SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	3
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

For Copy of SDS

: Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by

: Product Safety: +1 905-804-4752

Revision Date

: 2017/04/20

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION 1: Identification

1.1. Product identifier

Product form	: Substance
Name	: Propane
CAS No	: 74-98-6
Formula	: C3H8
Other means of identification	: Propane, Liquefied Petroleum Gas, n-propane, dimethylmethane, propyl hydride, refrigerant gas R290
Product group	: Core Products

1.2. Recommended use and restrictions on use

Recommended uses and restrictions	: Industrial use Use as directed
-----------------------------------	-------------------------------------

1.3. Supplier

Praxair Canada inc.
1200 – 1 City Centre Drive
Mississauga - Canada L5B 1M2
T 1-905-803-1600 - F 1-905-803-1682
www.praxair.ca

1.4. Emergency telephone number

Emergency number	: 1-800-363-0042 Call emergency number 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Praxair sales representative.
------------------	--

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

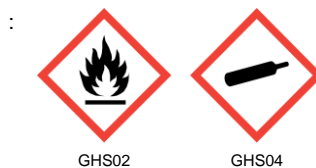
GHS-CA classification

Flam. Gas 1 H220
Liquefied gas H280

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms



Signal word

: DANGER

Hazard statements

: **EXTREMELY FLAMMABLE GAS**
CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION
MAY CAUSE FROSTBITE
MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements

: Do not handle until all safety precautions have been read and understood
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Use and store only outdoors or in a well-ventilated area
Leaking gas fire: Do not extinguish, unless leak can be stopped safely
In case of leakage, eliminate all ignition sources



Propane

Safety Data Sheet E-4646

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 10-15-1979

Revision date: 08-03-2016

Supersedes: 10-15-2013

Protect from sunlight when ambient temperature exceeds 52°C (125°F)
Use a back flow preventive device in the piping
Close valve after each use and when empty
Never put cylinders into unventilated areas of passenger vehicles
Do not open valve until connected to equipment prepared for use

2.3. Other hazards

Other hazards not contributing to the classification : Contact with liquid may cause cold burns/frostbite.

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	CAS No.	% (Vol.)	Common Name (synonyms)
Propane (Main constituent)	(CAS No) 74-98-6	100	Propane liquefied / Normal propane / n-Propane / PROPANE

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : None.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Carbon dioxide, dry chemical powder, water spray, fog.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Fire hazard : **EXTREMELY FLAMMABLE GAS.** If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : **EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents.

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.

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5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.
Protection during firefighting	: Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
Special protective equipment for fire fighters	: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Specific methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems Stop flow of product if safe to do so Use water spray or fog to knock down fire fumes if possible.
Other information	: Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.)

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate air ventilation. Stop leak if safe to do so.
------------------	--

6.2. Methods and materials for containment and cleaning up

6.3. Reference to other sections

For further information refer to section 8: Exposure controls/personal protection

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.
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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking" or "Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g. NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Propane (74-98-6)		
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA - OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Canada (Quebec)	VEMP (mg/m ³)	1800 mg/m ³
Canada (Quebec)	VEMP (ppm)	1000 ppm
Alberta	OEL TWA (ppm)	1000 ppm
British Columbia	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Québec	VEMP (mg/m ³)	1800 mg/m ³
Québec	VEMP (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Safety glasses. Face shield. Gloves.



Hand protection : Wear work gloves when handling containers. Wear heavy rubber gloves where contact with product may occur.

Eye protection : Wear goggles when transfilling or breaking transfer connections. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.



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Skin and body protection	: As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.
Respiratory protection	: Respiratory protection: Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Thermal hazard protection	: Wear cold insulating gloves when transfilling or breaking transfer connections.
Environmental exposure controls	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
Other information	: Other protection : Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of flame resistant anti-static safety clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Molecular mass	: 44 g/mol
Colour	: Colourless.
Odour	: Poor warning properties at low concentrations. Stenchant often added. Sweetish.
Odour threshold	: No data available
pH	: Not applicable.
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available
Freezing point	: -187.69 °C (-305.8°F)
Boiling point	: -42.1 °C (-44.32°F)
Flash point	: -104.4 °C (-155.2°F) TCC
Critical temperature	: 96.8 °C (206°F)
Auto-ignition temperature	: 450 °C (842°F)
Decomposition temperature	: No data available
Vapour pressure	: 8.58 bar (109.73 psig)
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.58
Relative density of saturated gas/air mixture	: No data available
Density	: 0.506 - 0.583 g/cm ³ (at 15 °C)
Relative gas density	: 1.5
Solubility	: Water: 75 mg/l
Log Pow	: 2.36
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Viscosity, kinematic (calculated value) (40 °C)	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Flammability (solid, gas)	: 2.1 - 9.5 vol %

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9.2. Other information

Gas group : Liquefied gas
Additional information : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : No reactivity hazard other than the effects described in sub-sections below.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Can form explosive mixture with air. May react violently with oxidants.
Conditions to avoid : Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Incompatible materials : Air, Oxidiser. Chlorine dioxide.
Hazardous decomposition products : Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Propane (74-98-6	
LC50 inhalation rat (mg/l)	658 mg/l/4h
ATE CA (vapours)	658.00000000 mg/l/4h
ATE CA (dust,mist)	658.00000000 mg/l/4h

Skin corrosion/irritation : Not classified
pH: Not applicable.
Serious eye damage/irritation : Not classified
pH: Not applicable.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

Propane (74-98-6)	
Hydrocarbon	Yes

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

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12.2. Persistence and degradability

Propane (74-98-6)

Persistence and degradability	The substance is biodegradable. Unlikely to persist.
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12.3. Bioaccumulative potential

Propane (74-98-6)

Log Pow	2.36
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Propane (74-98-6)

Mobility in soil	No data available.
Log Pow	2.36
Log Kow	Not applicable.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on the ozone layer : None
Effect on global warming : No known effects from this product

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : UN1978
TDG Primary Hazard Classes : 2.1 - Class 2.1 - Flammable Gas.
Proper shipping name : PROPANE

ERAP Index : 3 000
Explosive Limit and Limited Quantity Index : 0.125 L
Passenger Carrying Ship Index : 110 kg
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : Forbidden

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1978
Proper Shipping Name (IMDG) : PROPANE
Class (IMDG) : 2 - Gases
MFAG-No : 115

IATA

UN-No. (IATA) : 1978
Proper Shipping Name (IATA) : PROPANE
Class (IATA) : 2

SECTION 15: Regulatory information

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15.1. National regulations

Propane (74-98-6)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Propane (74-98-6)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

SECTION 16: Other information

Date of issue : 15/10/1979
Revision date : 03/08/2016
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Indication of changes:

Training advice : The hazard of asphyxiation is often overlooked and must be stressed during operator training.
Ensure operators understand the flammability hazard.

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Other information

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), www.aws.org. Order AWS documents from Global Engineering Documents, global.ihs.com. Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair Canada Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair Canada Inc, it is the user's obligation to determine the conditions of safe use of the product. Praxair Canada Inc, SDSs are furnished on sale or delivery by Praxair Canada Inc, or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.ca. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write Praxair Canada Inc, (Phone: 1-888-257-5149; Address: Praxair Canada Inc, 1 City Centre Drive, Suite 1200, Mississauga, Ontario, L5B 1M2).

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NFPA health hazard

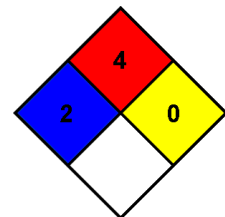
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical

: 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

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SDS Canada (GHS) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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SAFETY DATA SHEET

DURON^{TM/MC} -E 10W-30



000003001098

Version 3.1

Revision Date 2017/03/23

Print Date 2017/03/24

SECTION 1. IDENTIFICATION

Product name : DURON^{TM/MC} -E 10W-30

Product code : DE13ICT, DE13P5R, DE13P20, DE13IBC, DE13DRR, DE13DRM, DE13DCT, DE13C16, DE13C12, DE13, DE13BLK

Manufacturer or supplier's details
Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga ON L5J 1K2
Canada

Emergency telephone number
Petro-Canada Lubricants Inc.: +1 905-403-5770;
CHEMTREC Transport Emergency: 1-800-424-9300;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : A superior performance heavy duty engine oil suitable for 4-stroke diesel, gasoline and natural gas automotive applications where SAE 10W-30 is recommended. Applications include vehicles equipped with exhaust after-treatment devices such as diesel particulate filters and catalytic converters. It is suitable for wet clutch transmission and hydraulic applications in mobile equipment where a 10W-30 engine oil is recommended.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	viscous liquid
Colour	Light amber.
Odour	Mild petroleum oil like.

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Potential Health Effects

Primary Routes of Entry : Eye contact

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DURON™/MC -E 10W-30



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Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	30 - 50 %
White mineral oil (petroleum)	8042-47-5	30 - 50 %
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	20 - 30 %
Zinc alkyldithiophosphate	113706-15-3	1 - 5 %

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

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DURON™/MC -E 10W-30

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- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.
- Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), phosphorus oxides (PO_x), sulphur compounds (H₂S), zinc oxides (ZnO_x), metal oxides, hydrocarbons, smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

SAFETY DATA SHEET
DURON™/MC -E 10W-30



000003001098

Version 3.1

Revision Date 2017/03/23

Print Date 2017/03/24

- Advice on safe handling : For personal protection see section 8.
 Smoking, eating and drinking should be prohibited in the application area.
 In case of insufficient ventilation, wear suitable respiratory equipment.
 Avoid contact with skin, eyes and clothing.
 Do not ingest.
 Keep away from heat and sources of ignition.
 Keep container closed when not in use.
- Conditions for safe storage : Store in original container.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Keep in a dry, cool and well-ventilated place.
 Keep in properly labelled containers.
 To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
White mineral oil (petroleum)	8042-47-5	TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH

- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour filter

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R).

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures : Wash hands and face before breaks and immediately after handling the product.
Wash contaminated clothing before re-use.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous liquid

Colour : Light amber.

Odour : Mild petroleum oil like.

Odour Threshold : No data available

pH : No data available

Pour point : -42 °C (-44 °F)

Boiling point/boiling range : No data available

Flash point : 220 °C (428 °F)

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Method: Cleveland open cup

Fire Point	:	241 °C (466 °F)
Auto-Ignition Temperature	:	No data available
Evaporation rate	:	No data available
Flammability	:	Low fire hazard. This material must be heated before ignition will occur.
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	0.8627 kg/l (15 °C / 59 °F)
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	80.1 cSt (40 °C / 104 °F) 12.00 cSt (100 °C / 212 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	Reactive with oxidizing agents and water.
Hazardous decomposition products	:	May release CO _x , H ₂ S, smoke and irritating vapours when heated to decomposition.

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available
Acute inhalation toxicity : Remarks: No data available
Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

Components:

lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

White mineral oil (petroleum):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

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Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

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Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The components of this product are reported in the following inventories:

DSL

On the inventory, or in compliance with the inventory

TSCA

All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

ELINCS

At least one component is not listed in EINECS but all such components are listed in ELINCS.

SECTION 16. OTHER INFORMATION

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For Copy of SDS : Internet: lubricants.petro-canada.com/sds
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518
Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2017/03/23

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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DURON^{TM/MC} -E 15W-40



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SECTION 1. IDENTIFICATION

Product name : DURON^{TM/MC} -E 15W-40

Product code : DE15CBE, DE15P5R, DE15P20, DE15ICT, DE15IBC, DE15DRR, DE15DRM, DE15DCT, DE15C16, DE15C12, DE15C02, DE15, DE15BLK

Manufacturer or supplier's details
Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga ON L5J 1K2
Canada

Emergency telephone number
Petro-Canada Lubricants Inc.: +1 905-403-5770;
CHEMTREC Transport Emergency: 1-800-424-9300;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : DURON-E 15W-40 is a superior quality heavy duty diesel engine oil specifically designed for '07 EPA engine requirements along with improved performance benefits in legacy engines. Application includes modern low emission diesel engines with cooled exhaust gas recirculation and exhaust after treatment technology. It is suitable also for passenger car and light truck diesel engines, and spark ignition engines.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	viscous liquid
Colour	Light amber.
Odour	Mild petroleum oil like.

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion

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Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
White mineral oil (petroleum)	8042-47-5	30 - 50 %
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	30 - 50 %
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	72623-87-1	30 - 50 %
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	30 - 50 %
Zinc alkyldithiophosphate	113706-15-3	1 - 5 %

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.
- In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

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- Obtain medical attention.
- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.
- Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.
-

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), phosphorus oxides (PO_x), sulphur compounds (H₂S), zinc oxides (ZnO_x), metal oxides, hydrocarbons, smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.
-

SECTION 7. HANDLING AND STORAGE

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- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.
- Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
White mineral oil (petroleum)	8042-47-5	TWA (Mist)	5 mg/m ³	CA AB OEL
		STEL (Mist)	10 mg/m ³	CA AB OEL
		TWAEV (Mist)	5 mg/m ³	CA QC OEL
		STEV (Mist)	10 mg/m ³	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	TWA (Mist)	5 mg/m ³	CA AB OEL
		STEL (Mist)	10 mg/m ³	CA AB OEL
		TWAEV (Mist)	5 mg/m ³	CA QC OEL
		STEV (Mist)	10 mg/m ³	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	72623-87-1	TWA (Mist)	5 mg/m ³	CA AB OEL
		STEL (Mist)	10 mg/m ³	CA AB OEL
		TWAEV (Mist)	5 mg/m ³	CA QC OEL
		STEV (Mist)	10 mg/m ³	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	TWA (Mist)	5 mg/m ³	CA AB OEL

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		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour filter

Hand protection Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R).

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Protective measures : Wash hands and face before breaks and immediately after handling the product.
Wash contaminated clothing before re-use.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Hygiene measures : Wash face, hands and any exposed skin thoroughly after handling.
Remove and wash contaminated clothing and gloves, including the inside, before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous liquid

Colour : Light amber.

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Odour	: Mild petroleum oil like.
Odour Threshold	: No data available
pH	: No data available
Pour point	: -36 °C (-33 °F)
Boiling point/boiling range	: No data available
Flash point	: 228 °C (442 °F) Method: Cleveland open cup
Fire Point	: 247 °C (477 °F)
Auto-Ignition Temperature	: No data available
Evaporation rate	: No data available
Flammability	: Low fire hazard. This material must be heated before ignition will occur.
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Density	: 0.8711 kg/l (15 °C / 59 °F)
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: No data available
Viscosity	
Viscosity, kinematic	: 118.2 cSt (40 °C / 104 °F) 15.6 cSt (100 °C / 212 °F)
Explosive properties	: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	: Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	: No data available

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Incompatible materials : Reactive with oxidizing agents and water.

Hazardous decomposition products : May release COx, H2S, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

Components:

White mineral oil (petroleum):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

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lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

Toxicity to daphnia and other :
aquatic invertebrates Remarks: No data available

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Toxicity to algae :
Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

Not regulated as a dangerous good

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SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The components of this product are reported in the following inventories:

DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
ELINCS	At least one component is not listed in EINECS but all such components are listed in ELINCS.

SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: lubricants.petro-canada.com/sds
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518
Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2017/03/24

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION I-MATERIAL IDENTIFICATION AND USE

Material Name/Identifier:	Dot 5 Silicone Brake Fluid	Stock No.	535
Manufacturer's Name:	Kleen-Flo Tumbler Industries Ltd	Street Address:	75 Advance Blvd.
City:	Brampton	Province:	Ontario
Postal Code:	L6T 4N1	Emergency Phone #:	CANUTEC:- 613-996-6666 (24HR)
Chemical Name:	Modified Polydimethyl Siloxane	Chemical Family:	Siloxane
Chemical Formula:	N.Ap (Mixture)	Trade Names & Synonyms:	none
Material Use:	Brake Fluid	Molecular Weight:	N.Ap

SECTION II-HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	C.A.S.	Approximate Concentration% wt	LD50 Species & Route	LC50 Species & Route
Polydimethyl Siloxane	63148-62-9	60 - 100	64 g/kg rat-oral	N/Av.
Tributyl Phosphate	126-73-8	1-5	3000mg/kg mouse-oral	1300 mg/m3 mouse/1 hr.

SECTION III-PHYSICAL DATA FOR MATERIAL

Physical State:	Liquid	Odour/Appearance:	Musty odour/clear purple liquid
Specific Gravity:	0.95	Odour Threshold(p.p.m.):	N/Av.
Boiling Point:	>40 °C	Evaporation Rate:	N/Av.
Freezing Point:	N/Av.	Solubility in Water:	Insoluble
% Volatile(by volume):	N/Av.	Vapour Pressure(mm)Hg:	N/Av.
Vapour Density(Air=1):	N/E	Coefficient of Water/Oil Distribut:	N/Av.
pH	N.Ap.		

SECTION IV-FIRE AND EXPLOSION HAZARD OF MATERIAL

Flammability Yes/No	No	If yes under which conditions:	N.Ap.
Auto Ignition Temperature:	N/Av.	Means of Extinction:	Carbon dioxide or dry chemical
Flashpoint and Method:	101 °C TCC	Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide Nitrogen oxide, Silicone Dioxide, Formaldehyde, Metal oxides.
Upper Flammable limit (%vol)	N/E	Lower Flammable Limit(% by volume):	N/E
Explosion Data:	Sensitivity to Mechanical Impact: N.Ap	Sensitivity to Static Discharge:	N.Ap.

SECTION V-REACTIVITY DATA

Chemical Stability Yes/No:	Yes	If NO under which conditions?	N.Ap.
Incompatibility to Other Substances Yes/No:	Yes	If so which ones?	Strong Oxidizers
Reactivity and under what conditions?	Hot surfaces, open flame, fire		
Hazardous Decomposition Products:	Carbon oxide, NOx, Silicone dioxide, Formaldehyde, Metal oxides		

N/E: not established N.Ap.: not applicable N/Av: not available

SECTION VI-TOXICOLOGICAL PROPERTIES OF PRODUCT

Route of Entry: ALL Routes	--SKIN CONTACT --SKIN ABSORPTION --EYE CONTACT --INHALATION --INGESTION		
Effects of Acute Exposure:	Prolonged or repeated contact may cause discomfort and local redness on skin, eye irritation. Inhalation may cause pulmonary edema, Swallowing large amount may cause drowsiness.		
Effects of Chronic Exposure:	none known		
LD 50 of Product:	N/E	LC 50 of Product:	N/E
Irritancy of Product:	Skin, eye irritant	Exposure Limits of Product:	N/E
Sensitization of Product:	N/E	Toxicologically Synergistic Materials:	N/A
--CARCINOGENICITY --REPRODUCTIVE EFFECTS --TERATOGENICITY --MUTAGENICITY			None known

SECTION VII-PREVENTIVE MEASURES

Personal Protective Equipment to be used:

Gloves(specify):	nitrile or chemical resistant gloves	Eye(specify):	Safety Glasses
Respiratory(specify):	Not required in normal use	Clothing:	canvas or plastic
Respiratory Protection:	If used indoors or on a continuous basis, use of NIOSH approved respirator is recommended		
Engineering Controls:	Local and mechanical ventilation recommended.		
Leak and Spill Procedure:	Absorb with material such as sand, vermiculite. Collect and disposed according to local or provincial regulation.		
Waste Disposal:	Standard methods as approved in your area.		
Storage Requirements:	Store at room temperature. Keep container closed when not in use.		
Handling Procedures and Equipment:	Handle with care. Keep away from children. Do not inhale or ingest.		
TDG Classification:	Not Regulated		
WHMIS Classification:	Non controlled.		

SECTION VIII-FIRST AID MEASURES

Eye:	Rinse thoroughly with water for 15 minutes. Consult physician.
Skin:	Remove contaminated clothes. Wash with soapy water. Consult doctor if irritation persist.
Inhalation:	Remove patient to fresh air and restore breathing if required seek medical help if discomfort persist.
Ingestion:	DO NOT INDUCE VOMITING. Seek medical help immediately..

SECTION IX-PREPARATION DATE OF M.S.D.S.

Additional Info/Comments:	Sources Used: Supplier's data
Phone Number:	(905) 793-4311
Date Prepared:	January 2, 2015
Prepared By: Quality Control Laboratory	
Kleen-Flo Tumbler Industries Limited	

THIS SHEET SUPERSEDES ANY OTHER M.S.D.S. PREVIOUSLY PREPARED

N/Av.: not available N/Ap.: not applicable N/E: not established



SAFETY DATA SHEET

1. Product And Company Identification

SDS ID: SDS584
 PRODUCT NAME: ACDelco DEX-COOL Extended Life Antifreeze/Coolant
 PRODUCT NUMBER: 88863334, 88862642, 88863342, 10953464, 1000953031, 12377912/F, 12378512/F, 19242091, 19261992, 12346290, 88862171, 88862172, 10953031, 10953527
 FORMULA NUMBER: YA-956B, YA-956B-B

MANUFACTURER:
 Prestone Products Corporation
 Danbury, CT 06810-5109

CANADIAN OFFICE:
 FRAM Group (Canada), Inc.
 Mississauga, Ontario L5L 3S6

MEDICAL EMERGENCIES AND ALL OTHER INFORMATION PHONE NUMBER:

(800)890-2075 (in the US)
 (800)668-9349 (in Canada)

TRANSPORTATION EMERGENCY PHONE NUMBER (Chemical Spills and Transport Accidents only):

CHEMTREC 1-800-424-9300 (in the US)
 CANUTEC (613)996-6666 (in Canada)

SDS DATE OF PREPARATION/REVISION: 09/26/14

PRODUCT USE: Automobile antifreeze – consumer product
 RESTRICTIONS ON USE: None identified

2. Hazards Identification

GHS/HAZCOM 2012 Classification:

Health	Physical
Acute Toxicity Category 4 (oral) Specific Target Organ Toxicity – Repeated Exposure Category 2 Reproductive Toxicity Category 2	Not Hazardous

Label Elements



WARNING!
 Harmful if swallowed.
 Suspected of damaging the unborn child.
 May cause damage to kidneys through prolonged or repeated exposure.

Prevention:
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe mist, vapors or spray.
 Wash exposed skin thoroughly after handling.
 Do not eat, drink, or smoke when using this product.

Use personal protective equipment as required.

Response:

IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.

Rinse mouth.

IF exposed or concerned: Get medical advice.

Storage:

Store locked up

Disposal:

P405 Store locked up.

P501 Dispose of contents and container in accordance with local and national regulations.

3. Composition/Information on Ingredients

Component	CAS No.	Amount
Ethylene Glycol	107-21-1	80-95
Diethylene Glycol	111-46-6	0-5
2-Ethyl Hexanoic Acid, Sodium Salt	19766-89-3	1-5
Neodecanoic Acid, Sodium Salt	31548-27-3	1-5

The exact concentrations are a trade secret.

4. First Aid Measures

INHALATION: Remove the exposed person to fresh air and if they are having difficulty breathing, feel short of breath or have stopped breathing, call 911 immediately.

SKIN CONTACT: Remove contaminated clothing and wash contacted area thoroughly with soap and water. If irritation develops and persists, seek medical attention.

EYE CONTACT: Immediately flush eyes with large amounts of running water for 15 minutes. Get medical attention if irritation persists longer than 2 hours.

INGESTION: Serious toxicity can occur after ingestion. Call (800) 890-2075 for emergency medical advice or seek medical attention immediately at a hospital emergency department. Do not induce vomiting unless directed to do so by a medical professional. Never give anything by mouth to an unconscious or drowsy person.

MOST IMPORTANT SYMPTOMS: Ingestion may cause life threatening adverse effects including abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, malaise, blurring of vision, irritability, back pain, kidney failure, and central nervous system effects. Eye contact may cause eye irritation. Inhalation of mists may cause nose and throat irritation.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NEEDED: In case of ingestion, seek immediate medical attention and call for assistance (800) 890-2075.

NOTES TO PHYSICIAN: In the event of a potentially toxic exposure, call (800) 890-2075 for medical treatment advice. When ingested, the principle toxic effects of the product are due to ethylene glycol and include metabolic acidosis and renal failure. The presence of anion gap with accompanying metabolic acidosis is highly suggestive of significant ingestion. Late presenting symptoms may include evidence of an osmol gap, significant hypocalcemia, cardiac arrhythmias, pulmonary edema, presence of calcium oxalate crystals in the urine or effects on seventh, eighth, and ninth cranial nerves.

Early administration of either ethanol or fomepizole (Antizol ®) as antidotes can prevent development of the toxic metabolites of ethylene glycol that lead to serious systemic toxicity. Call (800) 890-2075 for medical advice regarding treatment and monitoring of patients when administering antidotal therapy. Hemodialysis may be needed for the treatment of severely toxic

patients. The administration of thiamine and pyridoxine is also recommended.

5. Firefighting Measures

SUITABLE EXTINGUISHING MEDIA: For large fires, use alcohol type or all-purpose foams. For small fires, use water spray, carbon dioxide or dry chemical.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: A solid stream of water or foam directed into hot, burning liquid can cause frothing. Burning may produce carbon monoxide and carbon dioxide.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHERS: Do not spray pool fires directly. Firefighters should wear positive pressure self- contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

6: Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Wear appropriate protective clothing and equipment (See Section 8).

METHODS AND MATERIALS FOR CONTAINMENT/CLEANUP: Collect with absorbent material and place in appropriate, labeled container for disposal or, if permitted flush spill area with water.

7. Handling and Storage

PRECAUTIONS FOR SAFE HANDLING:

Harmful or Fatal if Swallowed. Do not drink antifreeze or solution. Avoid eye and prolonged or repeated skin contact. Avoid breathing vapors or mists. Wash exposed skin thoroughly with soap and water after use. Do not store in opened or unlabeled containers. Keep container away from open flames and excessive heat. Do not reuse empty containers unless properly cleaned. Empty containers retain product residue and may be dangerous. Do not cut, weld, drill, etc. containers, even empty.

Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without any obvious ignition sources. Published "autoignition" or "ignition" temperatures cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Use of this product in elevated temperature applications should be thoroughly evaluated to assure safe operating conditions.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store away from excessive heat and oxidizers.

NFPA CLASSIFICATION: IIIIB

8. Exposure Controls / Personal Protection

EXPOSURE GUIDELINES

CHEMICAL	EXPOSURE LIMIT
Ethylene Glycol (as aerosol)	100 mg/m ³ Ceiling ACGIH TLV
Diethylene Glycol	10 mg/m ³ TWA AIHA WEEL
2-Ethyl Hexanoic Acid	None Established
Neodacanoic Acid, Sodium Salt	None Established

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APPROPRIATE ENGINEERING CONTROLS: Use general ventilation or local exhaust as required to maintain exposures below the occupational exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: For operations where the TLV is exceeded a NIOSH approved respirator with organic vapor cartridges and dust/mist prefilters or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select and use in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

GLOVES: Chemical resistant gloves such as neoprene or PVC where contact is possible.

EYE PROTECTION: Splash-proof goggles.

OTHER PROTECTIVE EQUIPMENT/CLOTHING: Appropriate protective clothing as needed to minimize skin contact.

9. Physical and Chemical Properties
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APPEARANCE:	Orange liquid	ODOR:	Characteristic odor
ODOR THRESHOLD:	Not determined	pH:	8.7-9.2
MELTING/FREEZING POINT:	-36°F (-38°C)	BOILING POINT/RANGE:	340°F (171°C)
FLASH POINT:	>254°F (>123°C) TOC >230°F (>110°C) Setaflash	EVAPORATION RATE:	Not determined
FLAMMABILITY (SOLID, GAS)	Not Applicable	FLAMMABILITY LIMITS:	LEL: Not determined UEL: Not determined
VAPOR PRESSURE:	Not determined	VAPOR DENSITY (air = 1):	Not determined
RELATIVE DENSITY:	1.07-1.14	SOLUBILITIES	Water: Complete
PARTITION COEFFICIENT (n-octanol/water)	Not determined	AUTOIGNITION TEMPERATURE:	Not determined
DECOMPOSITION TEMPERATURE:	Not determined	VISCOSITY:	Not determined

10. Stability and Reactivity

REACTIVITY: Normally unreactive

CHEMICAL STABILITY: Stable

POSSIBILITY OF HAZARDOUS REACTIONS: Reaction with strong oxidizers will generate heat.

CONDITIONS TO AVOID: None known

INCOMPATIBLE MATERIALS: Avoid strong bases at high temperatures, strong acids, strong oxidizing agents, and materials reactive with hydroxyl compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide.

11. Toxicological Information

POTENTIAL HEALTH EFFECTS:

ACUTE HAZARDS:

INHALATION: May cause irritation of the nose and throat with headache, particularly from mists. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace, may produce nausea, vomiting, headache, dizziness and irregular eye movements.

SKIN CONTACT: No evidence of adverse effects from available information.

EYE CONTACT: Liquid, vapors or mist may cause discomfort in the eye with persistent conjunctivitis, seen as slight excess redness or conjunctiva. Serious corneal injury is not anticipated.

INGESTION: May cause abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, malaise, blurring of vision, irritability, back pain, decrease in urine output, kidney failure, and central nervous system effects, including irregular eye movements, convulsions and coma. Cardiac failure and pulmonary edema may develop. Severe kidney damage which may be fatal may follow the swallowing of ethylene glycol. A few reports have been published describing the development of weakness of the facial muscles, diminishing hearing, and difficulty with swallowing, during the late stages of severe poisoning.

CHRONIC EFFECTS: Prolonged or repeated inhalation exposure may produce signs of central nervous system involvement, particularly dizziness and jerking eye movements. Prolonged or repeated skin contact may cause skin sensitization and an associated dermatitis in some individuals. Ethylene glycol has been found to cause birth defects in laboratory animals. The significance of this finding to humans has not been determined. 2-Ethyl Hexanoic Acid, Sodium Salt is suspected of causing developmental effects based on animal data.

CARCINOGENICITY LISTING: None of the components of these products is listed as a carcinogen or suspected carcinogen by IARC, NTP, ACGIH or OSHA.

ACUTE TOXICITY VALUES:

Acute Toxicity Estimate for the product

Oral: 509.5 mg/kg

Dermal: 9803.2 mg/kg

Ethylene Glycol: LD50 Oral Rat: 4700 mg/kg

LD50 Skin Rabbit: 9530 mg/kg

Diethylene Glycol: LD50 Oral Rat: 12,565 mg/kg

LD50 Skin Rabbit: 11,890 mg/kg

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH:

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations 150, 1,000 and 2,500 mg/m³ for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentrations, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin, or swallowing of ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1,000 and 2,500 mg/m³) and developmental toxicity in with minimal evidence of teratogenicity (2,500 mg/m³). The no-effects concentration (based on maternal toxicity) was 500 mg/m³. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen; there is currently no available information to suggest that ethylene glycol caused birth defects in humans. Cutaneous application of ethylene

glycol is ineffective in producing developmental toxicity; exposure to high aerosol concentration is only minimally effective in producing developmental toxicity; the major route for producing developmental toxicity is perorally.

Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of carcinogenic potential for ethylene glycol has been supported by numerous invitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects. This product contains less than 0.5% tolytriazole which has demonstrated mutagenic activity in a bacterial test system. A correlation has been established between mutagenic activity and carcinogenic activity for many chemicals. Tolytriazole has not been identified as a carcinogen or probable carcinogen by NTP, IARC, ACGIH or OSHA.

In a study of Wistar rats, adverse developmental results were reported at a dose of 100 mg / kg of body weight for 2-Ethyl Hexanoic Acid, Sodium Salt.

12. Ecological Information

ECOTOXICITY:

Ethylene Glycol: LC50 Fathead Minnow <10,000 mg/L/96 hr
EC50 Daphnia Magna 100,000 mg/L/48 hr
Bacterial (Pseudomonas putida): 10,000 mg/l
Protozoa (Entosiphon sulcatum and Uronema parduczi; Chatton-Lwoff): >10,000 mg/l
Algae (Microcystis aeruginosa): 2,000 mg/l
Green algae (Scenedesmus quadricauda): >10,000 mg/l
Diethylene Glycol: LC50 western mosquitofish >32,000 mg/L/96 hr

PERSISTENCE AND DEGRADABILITY:

Ethylene Glycol is readily biodegradable (97-100% in 2-12 days). Diethylene glycol is readily biodegradable (>70% in 19days).

BIOACCUMULATIVE POTENTIAL:

Ethylene glycol: A BCF of 10, reported for ethylene glycol in fish, Golden ide (Leuciscus idus melanotus), after 3 days of exposure suggests the potential for bioconcentration in aquatic organisms is low.
Diethylene glycol: An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.

MOBILITY IN SOIL: Ethylene glycol and diethylene glycol are highly mobile in soil.

OTHER ADVERSE EFFECTS: None known

13. Disposal Considerations

Dispose of product in accordance with all local, state/provincial and federal regulations.

14. Transport Information

U.S. DOT HAZARD CLASSIFICATION: Not Regulated (unless package contains a reportable quantity)

Note: IF A SHIPMENT OF A REPORTABLE QUANTITY (5,263 LBS/553 GAL.) IN A SINGLE PACKAGE IS INVOLVED, THE FOLLOWING INFORMATION APPLIES:

PROPER SHIPPING NAME: RQ, Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
UN NUMBER: UN3082
PACKING GROUP: III
LABELS REQUIRED: Class 9

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

IMDG CODE SHIPPING CLASSIFICATION: Not Regulated

CANADIAN TDG CLASSIFICATION: Not Regulated

15. Regulatory Information

EPA SARA 311/312 HAZARD CLASSIFICATION: Acute health, chronic health

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Ethylene Glycol	107-21-1	80-95%
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PROTECTION OF STRATOSPHERIC OZONE: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for this product, based on the RQ for Ethylene Glycol (95% maximum) of 5,000 lbs., is 5,263 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

CALIFORNIA PROPOSITION 65: The normal consumer use of this product does not result in exposures to chemicals known to the State of California to cause Cancer and/or Reproductive Harm above the significant risk level for carcinogens or the maximum allowable dose levels for reproductive toxins. Therefore, no warnings are required for consumer packages. Industrial or other occupational use of this product at higher frequency and using larger quantities of this product may result in exposures exceeding these levels and are labeled accordingly.

EPA TSCA INVENTORY: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the ingredients are listed on the Canadian Domestic Substances List.

CANADIAN WHMIS CLASSIFICATION: Class D - Division 2 - Subdivision A - (A very toxic material causing other toxic effects)



CANADIAN WHMIS HAZARD SYMBOLS:

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): All of the ingredients are listed on the EINECS inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances.

JAPAN: All of the ingredients of this product are listed on the Japanese Existing and New Chemical Substances (METI) List.

KOREA: All of the ingredients of this product are listed on the Korean Existing Chemical List (KECL).

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PHILIPPINES: All of the ingredients of this product are listed on the Philippine Inventory of Chemical and Chemical Substance (PICCS)

CHINA: All of the ingredients of this product are listed on the Inventory of Existing Chemical Substance in China (IECSC).

16. Other Information

NFPA RATING (NFPA 704) - FIRE: 1 HEALTH: 2 INSTABILITY: 0

REVISION SUMMARY: All Sections – conversion to Hazcom 2012 classification and labeling and format.

SDS Date of Preparation/Revision: September 26, 2014

This SDS is directed to professional users and bulk handlers of the product. Consumer products are labeled in accordance with Federal Hazardous Substances Act regulations.

While Prestone Products Corporation believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of the tests conducted, the data are not to be taken as a warranty or representation for which Prestone Products Corporation assumes legal responsibility. They are offered solely for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

If more information is needed, please contact: Prestone Products Corporation
69 Eagle Road
Danbury CT 06810
(800) 890-2075



BlueDEF Diesel Exhaust Fluid

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : BlueDEF Diesel Exhaust Fluid

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Solution for NOx reduction in SCR systems

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300; (703) 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

Signal word (GHS-US) : None
Hazard statements (GHS-US) : None
Precautionary statements (GHS-US) : None

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
water	(CAS No) 7732-18-5	67.5	Not classified
urea	(CAS No) 57-13-6	32.5	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

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4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : The EPA has no established reportable quantity for spills for this material, secondary containment is not specified.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. For minor spillages wash down with excess of water. Mop up small spills.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Protective goggles.



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Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: characteristic ammonia odor
Odor threshold	: No data available
pH	: 9 - 10
Relative evaporation rate (butylacetate=1)	: < 1
Freezing point	: -11 °C (12 °F)
Boiling point	: > 100 °C (212 °F)
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not Applicable
Relative vapor density at 20 °C	: 0.6 H ₂ O, >1
Specific Gravity	: 1.09
Solubility	: Soluble in water. Water: 100 %
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong acids. Strong bases. oxidizing agents (peroxides, chromates, dichromates).

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
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urea (57-13-6)	
LD50 oral rat	8,471.00 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 14300 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 3,200.00 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 21,000.00 mg/kg (Rabbit; Literature study)
ATE US (oral)	8,471.00 mg/kg bodyweight

Skin corrosion/irritation	: Not classified pH: 9 - 10
Serious eye damage/irritation	: Not classified pH: 9 - 10
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fish 1	> 6,810.00 mg/l (96 h; Leuciscus idus; Nominal concentration)
EC50 Daphnia 1	> 10,000.00 mg/l (48 h; Daphnia magna; Nominal concentration)
LC50 fish 2	17,500.00 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 2	> 10,000.00 mg/l (24 h; Daphnia magna)
TLM fish 1	17500 ppm (96 h; Poecilia reticulata)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (Pseudomonas putida)
Threshold limit algae 1	> 10000 mg/l (168 h; Scenedesmus quadricauda; Growth rate)
Threshold limit algae 2	47 mg/l (192 h; Microcystis aeruginosa; Growth rate)

12.2. Persistence and degradability

urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Highly mobile in soil.
ThOD	0.27 g O ₂ /g substance

12.3. Bioaccumulative potential

urea (57-13-6)	
BCF fish 1	1.00 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11,700.00 (Chlorella sp.)
Log Pow	< -1.73 (Experimental value; EU Method A.8: Partition Coefficient)
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

urea (57-13-6)	
Mobility in soil	Not applicable

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12.5. Other adverse effects

- Effect on ozone layer : No additional information available
- Effect on global warming : No known ecological damage caused by this product.
No additional information available
- Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : As a non-hazardous liquid waste, it should be solidified with stabilizing agents such as sand, fly ash, or clay absorbent, so that no free liquid remains before disposal to an industrial waste landfill.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

- In accordance with DOT
- Not a dangerous good in sense of transport regulations
- Other information : Not regulated by DOT.

ADR

- UN-No. (ADR) : Not regulated by ADR

Transport by sea

- UN-No. (IMDG) : Not regulated by IMDG

Air transport

- UN-No. (IATA) : Not regulated by IATA

SECTION 15: Regulatory information

15.1. US Federal regulations

BlueDEF Diesel Exhaust Fluid	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
RQ (Reportable quantity, section 304 of EPA's List of Lists)	None. This material is not classified as hazardous under U.S. EPA regulations.
SARA Section 302 Threshold Planning Quantity (TPQ)	No extremely hazardous substances are in this product.
SARA Section 311/312 Hazard Classes	Urea. No hazards resulting from the material as supplied.
urea (57-13-6)	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

WHMIS Classification

Uncontrolled product
according to WHMIS
classification criteria

urea (57-13-6)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

BlueDEF Diesel Exhaust Fluid

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

BlueDEF Diesel Exhaust Fluid
DSL (Canada): The intentional ingredients of this product are listed
urea (57-13-6)
DSL (Canada): The intentional ingredients of this product are listed EINECS (Europe): The intentional ingredients of this product are listed

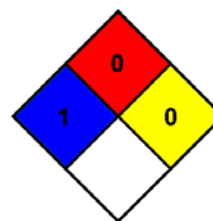
15.3. US State regulations

SECTION 16: Other information

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection B - Safety glasses, Gloves

SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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SECTION 1. IDENTIFICATION

Product name : HYDREX^{TM/MC} AW 46

Product code : HDXAW46P5R, HDXAW46P20, HDXAW46ICT,
HDXAW46IBC, HDXAW46DRR, HDXAW46DRM,
HDXAW46DCT, HDXAW46, HDXAW46BLK

Manufacturer or supplier's details
Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga ON L5J 1K2
Canada

Emergency telephone number : Petro-Canada Lubricants Inc.: +1 905-403-5770;
CHEMTREC Transport Emergency: 1-800-424-9300;
Poison Control Centre: Consult local telephone directory for
emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : These products are designed for use as heavy duty hydraulic power transmission fluids and for lubrication where good anti-wear and anti-oxidation properties are required. They would typically be used in high-pressure hydraulic systems, machine tools, presses, compressors, pumps, gear sets, and centralized bearing lubrication systems.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	viscous liquid
Colour	Pale, straw-yellow.
Odour	Mild petroleum oil like.

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation

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Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	72623-87-1	70 - 90 %
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	10 - 20 %
distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	10 - 20 %
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	10 - 20 %

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.
- In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

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- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.
- Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : Do not allow uncontrolled discharge of product into the environment.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the ap-

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plication area.
Use only with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	72623-87-1	TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne

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contaminants.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour filter

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R).

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures : Wash contaminated clothing before re-use.

Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous liquid

Colour : Pale, straw-yellow.

Odour : Mild petroleum oil like.

Odour Threshold : No data available

pH : No data available

Pour point : -39 °C (-38 °F)

Boiling point/boiling range : No data available

Flash point : 236 °C (457 °F)
Method: Cleveland open cup

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Fire Point	:	No data available
Auto-Ignition Temperature	:	No data available
Evaporation rate	:	No data available
Flammability	:	Low fire hazard. This material must be heated before ignition will occur.
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	0.8660 kg/l (15 °C / 59 °F)
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	46.4 cSt (40 °C / 104 °F)
		6.92 cSt (100 °C / 212 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	Reactive with oxidising agents and reducing agents.
Hazardous decomposition products	:	May release CO _x , H ₂ S, metal oxides, methacrylate monomers, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion

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Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No data available

Components:

lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

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Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The components of this product are reported in the following inventories:

DSL

On the inventory, or in compliance with the inventory

TSCA

All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EINECS

On the inventory, or in compliance with the inventory

IECSC

One or more components has been notified but may not be listed in the inventory.

SECTION 16. OTHER INFORMATION

For Copy of SDS

: Internet: lubricants.petro-canada.com/sds
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-

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Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285

Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285

For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2017/02/17

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Canadian Krown Dealers Inc.
35 Magnum Dr.
Schomberg, Ontario, L0G - 1T0
Canada
905-939-8750 / 1-800-267-5744

PRODUCT: KE93 Contact Cleaner - 390g

CODE: KR-093400

Section 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Item Numbers..... KR-093400
Product Identity..... KE93 Contact Cleaner - 390g
Manufacturer..... Empack Spraytech Inc.
98 Walker Drive
Brampton
Ontario
Canada
L6T 4H6
905-792-6571
24 hour emergency telephone number..... CHEM TREC: 800-424-9300.
Recommended Use..... Solvent degreaser.

Section 02: HAZARDS IDENTIFICATION



Hazard Classification:
Physical Hazards..... Flammable Aerosols - Category 1 . Gases Under Pressure - Compressed gas .
Health Hazards..... Eye Irritation - Category 2B. Skin Irritation - Category 2. Specific Target Organ Toxicity, Single Exposure - Category 3. Specific Target Organ Toxicity, Repeated Exposure - Category 2. Aspiration Hazard - Category 1.
Environmental Hazards..... Acute Aquatic Hazard - Category 1.
Label Elements:
Signal Word..... DANGER.
Hazard Statement..... Extremely flammable aerosol. Pressurized container: may burst if heated. Causes eye irritation. Causes skin irritation. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. May cause damage to the liver and kidneys through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.
Precautionary Statements:
Prevention..... Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source . Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment . Wash hands thoroughly after handling. Wear protective gloves.
Response..... IF INHALED: Remove person to fresh air and keep comfortable for breathing . Call a POISON CENTER if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage..... Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50°C /122°F . Store in a well-ventilated place. Store locked up .
Disposal..... Dispose of contents/ container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC).. None Known.

Section 03: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS #	Wt. %
Heptane	142-82-5	60-100
Carbon Dioxide	124-38-9	1-5

Section 04: FIRST AID MEASURES

Inhalation..... If inhaled, remove to fresh air. If not breathing, give artificial respiration and obtain immediate medical assistance. If breathing is difficult, give oxygen and get medical attention. Do not give adrenaline, epinephrine or similar drugs following exposure to this product.
Skin Contact..... Wash thoroughly with soap and lukewarm water.

PRODUCT: KE93 Contact Cleaner - 390g

CODE: KR-093400

Section 04: FIRST AID MEASURES

Eye Contact.....	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if irritation persists.
Ingestion.....	Do not induce vomiting, get medical attention. Consult poison control center or physician IMMEDIATELY.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Direct contact with eyes may cause temporary irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. In case of shortness of breath give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Section 05: FIRE FIGHTING MEASURES

Suitable Extinguishing Media.....	Dry chemical powder. Carbon dioxide. Foam, water spray or fog.
Unsuitable Extinguishing Media.....	Do not use water jet as an extinguisher, as this will spread the fire.
Specific Hazards Arising from the Chemical.	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special Protective Equipment and Precautions for Firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
General Fire Hazards.....	Extremely flammable aerosol.

Section 06: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 08).
Methods and Materials for Containment and Cleaning Up	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see section 13). Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.
Environmental Precautions.....	Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.

Section 07: HANDLING AND STORAGE

Precautions for Safe Handling.....	Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour of this product. Avoid contact with skin and eyes. Avoid prolonged exposure. Use in well-ventilated areas.
Conditions for Safe Storage including any Incompatibilities	Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C (122°F). Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store away from incompatible materials (see Section 10).

Section 08: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredients	TWA	ACGIH TLV STEL	PEL	OSHA PEL STEL	REL	NIOSH
Heptane	400 ppm	500 ppm	500 ppm	Not available		85 ppm for n-Heptane, 440 ppm for a ceiling conc.
Carbon Dioxide	5000 ppm	30000 ppm	9000 mg/m3	Not available		STEL: 30000ppm; TWA: 5000ppm
Appropriate Engineering Controls.....	Local exhaust ventilation required to maintain the point of use below the Threshold Limit Value if unprotected personnel are involved.					
Individual Protection Measures:						
Eye/Face Protection.....	Do not get in eyes. Wear safety glasses with side-shields.					
Skin Protection.....	Chemical resistant gloves are recommended. Avoid contact with the skin. Wear appropriate chemical resistant clothing.					
Respiratory Protection.....	Use dust and mist respirator.					
Thermal Hazards.....	None Known.					
General Hygiene Considerations.....	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.					

PRODUCT: KE93 Contact Cleaner - 390g

CODE: KR-093400

Section 09: PHYSICAL AND CHEMICAL PROPERTIES

Form.....	Aerosol.
Physical Appearance.....	Clear mist.
Odor.....	Heptane.
Odor Threshold (ppm).....	N/A.
Specific Gravity (Aerosol).....	0.680 - 0.720.
Specific Gravity (Liquid).....	0.680-0.700.
Aerosol Vapour Pressure (psig, 21°C).....	83-130.
Vapour Density (Air=1).....	> 1.
pH.....	N/A.
Boiling Point liquid (°C).....	98 °C (209°F).
Melting/Freezing Point (°C).....	N/A.
Flash Point (°C), Method.....	-4°C (25°F). Tag Closed Cup.
Flashback.....	Yes.
Evaporation Rate (n-Butyl Acetate = 1).....	N/A.
VOC Content.....	35%.
Solubility in water.....	Nil.
Aerosol Flame Projection.....	No data.
Auto Ignition Temperature (°C).....	204°C (399°F).
Lower Flammable Limit (% Vol).....	1.4.
Upper Flammable Limit (% Vol).....	7.0.
Coefficient of Water/Oil Distribution.....	N/A.
Viscosity.....	N/A.

Section 10: STABILITY AND REACTIVITY

Reactivity	Product not reactive under normal conditions of use.
Chemical Stability.....	Material is stable under normal conditions.
Possibility of Hazardous Reactions.....	Will not occur.
Conditions to Avoid.....	Avoid sources of heat and flame, and electrostatic charge.
Incompatible Materials.....	Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products.....	Carbon Oxides.

Section 11: TOXICOLOGICAL INFORMATION

Ingredients	LC50	LD50
Heptane	103,000 mg/L (4hrs, Rat)	>15,000 mg/kg (rat - oral); >2,000 mg/kg (rabbit - dermal)
Carbon Dioxide	Not available	Not available
Information on Likely Routes of Exposure:		
Routes of entry - Inhalation.....	Yes.	
Routes of entry - Skin & Eye.....	Yes.	
Routes of entry - Ingestion.....	Yes.	
Routes of entry - Skin Absorption.....	Yes.	
Symptoms Related to the Physical, Chemical and Toxicological Characteristics	Irritant effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Defatting of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.	
Acute Toxicity.....	Toxic if inhaled.	
Skin Corrosion/Irritation.....	Causes skin irritation.	
Serious Eye Damage/Eye Irritation.....	Causes eye irritation.	
Respiratory or Skin Sensitization.....	Inhalation may cause respiratory tract irritation.	
Germ Cell Mutagenicity.....	No information is available.	
Carcinogenicity.....	None known.	
Reproductive Toxicity.....	No information is available.	
Specific Target Organ Toxicity - Single Exposure	Specific target organ toxicity single exposure Category 3. May cause drowsiness and dizziness.	
Specific Target Organ Toxicity - Repeated Exposure	May cause damage to the liver and kidneys through prolonged or repeated exposure.	
Aspiration Hazard.....	Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.	
Chronic Effects.....	Organic solvents may be absorbed into the body by inhalation and ingestion and cause permanent damage to the nervous system, including the brain. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.	

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity.....	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Heptane (CAS#:142-82-5): Toxicity to fish: LC50 1.284 mg/L, 96 hrs; Toxicity to other aquatic invertebrates: 0.1 mg/L, 96 hrs; Toxicity to algae: EL50 4.338 mg/L, 72 hrs.
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PRODUCT: KE93 Contact Cleaner - 390g

CODE: KR-093400

Section 12: ECOLOGICAL INFORMATION

Persistence and degradability The product itself has not been tested.
 Bioaccumulation Potential..... The product itself has not been tested.
 Mobility in Soil..... The product itself has not been tested.
 Other Adverse Effects..... None Known.

Section 13: DISPOSAL CONSIDERATIONS

Appropriate Disposal Methods..... Dispose in accordance with local, provincial and federal regulations.

Section 14: TRANSPORT INFORMATION

TDG (Canada- Road)..... AEROSOLS, Class 2.1, UN1950.
 DOT (US-Road)..... AEROSOLS, Class 2.1, UN1950, LTD. QTY. OR ORM-D.
 IMDG (International- Marine)..... AEROSOLS, Class 2.1, UN1950.
 IATA (International- Air)..... AEROSOLS, Class 2.1, UN1950, LTD QTY.

Section 15: REGULATORY INFORMATION

Canada Regulations:..... WHMIS Classification. A: Compressed gas. B5: Flammable Aerosol. D2B: Material causing other toxic Materials.
 Domestic Substances List (DSL)..... Yes.
 US Regulations..... Environmental Protection Act: Constituents of this product are included on the TSCA inventory. This product is considered hazardous under the OSHA Hazard Communication Standard.

Section 16: OTHER INFORMATION

Disclaimer..... The information contained herein is based on data considered accurate. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. The SDS provider assumes no responsibility for personal injury or property damage to vendees or users or third parties, caused by the material. Such vendees or users assume all risks with the use of the material. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR. THIS SDS IS VALID FOR THREE YEARS.
 Abbreviations..... ACGIH: American Conference of Governmental Industrial Hygienists; CAS: Chemical Abstract Service; NIOSH: National Institute for Occupational Safety and Health, OSHA: Occupational Safety and Health Administration- USA; TSCA: Toxic Substances Control Act 1976-USA; PEL: Permissible Exposure Limit; REL: Recommended Exposure Limit; TLV: Threshold Limit Value; VOC: Volatile Organic Content; WHIMIS: Workplace Hazardous Materials Information System.
 Prepared by Regulatory Affairs
 Preparation Date..... Mar04/15

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Meropa 68, 100, 150, 220, 320, 460, 680, 1000, 1500

Product Use: Industrial Gear Lubricant

Product Number(s): 219506, 219510, 219515, 219522, 219532, 219546, 219568, 277209, 277210, 277211, 277212, 277213, 277214, 277215, 277216, 277219, 278039, 278040, 278041, 278042, 278043, 278044, 278045, 278046, 278047

Synonyms: Meropa 100 ISOCLEAN Certified; Meropa 1000 ISOCLEAN Certified; Meropa 150 ISOCLEAN Certified; Meropa 1500 ISOCLEAN Certified; Meropa 220 ISOCLEAN Certified; Meropa 320 ISOCLEAN Certified; Meropa 460 ISOCLEAN Certified; Meropa 68 ISOCLEAN Certified; Meropa 680 ISOCLEAN Certified

Company Identification

Chevron Canada Limited
1050 West Pender
Vancouver, BC V6E 3T4
Canada
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: (800) LUBE TEK

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to Canada regulatory guidelines.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Aldehydes, Alkyl Mercaptans, Hydrogen Sulfide, Nitrogen, Phosphorus, Sulfur.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly

returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Country/ Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

NOTE ON OCCUPATIONAL EXPOSURE LIMITS: Consult local authorities for acceptable provincial values in Canada. Consult the Canadian Standards Association Standard Z94.4-2011 Selection, Use and Care of Respirators.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.



Color: Brown
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg (Estimated) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1 (Estimated)
Initial Boiling Point: No data available
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: No data available
Density: 0.87 kg/l - 0.92 kg/l @ 15°C (59°F)
Viscosity: 175 mm²/s - 1650 mm²/s @ 40°C (104°F)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 215 °C (419 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

Sensitivity to Mechanical Impact: No.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components. For additional information on the acute toxicity of the components, call the technical information center.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY



No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods. (See B.C. Reg. GY/92 Waste Management Act; R.R.O. 1990, Reg. 347 General-Waste Management; C.C.S.M.c. W40 The Waste Reduction and Prevention Act; N.S. Reg. 51/95 and N.S. Reg. 179/96 for examples of Provincial legislation.)

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

TC Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER TRANSPORT CANADA (TDG)

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

DOT Shipping Description: NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

SECTION 15 REGULATORY INFORMATION

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1

01-2A=IARC Group 2A

01-2B=IARC Group 2B

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: SECTION 01 - Product Code(s) information was modified.
SECTION 05 - Fire Fighters Protection Measures information was modified.
SECTION 05 - Special hazards arising from the substance or mixture information was added.
SECTION 09 - Physical/Chemical Properties information was modified.

Revision Date: May 18, 2017

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
WHMIS - Workplace Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the WHMIS 2015 by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own

determination of the suitability of the material for his particular purpose.

Revision Number: 7

Revision Date: May 18, 2017

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**Meropa 68, 100, 150, 220, 320, 460,
680, 1000, 1500
SDS : 23552**

SAFETY DATA SHEET

PRECISION^{TM/MC} XL EP1



000003000532

Version 3.1

Revision Date 2017/02/27

Print Date 2017/02/27

SECTION 1. IDENTIFICATION

Product name : PRECISION^{TM/MC} XL EP1

Product code : PXL1P17, PXL1KGL, PXL1DRL, PXL1, PXL1C30

Manufacturer or supplier's details

Petro-Canada America Lubricants Inc.
115N Oak Park Avenue #1C
Oak Park IL 60301-1366
United States

Emergency telephone number : Petro-Canada Lubricants Inc.: +1 905-403-5770;
CHEMTREC Transport Emergency: 1-800-424-9300;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : PRECISION XL EP greases are high performance, long life, EP greases designed for trouble-free lubrication of a wide range of automotive and industrial equipment.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Stringy, smooth, semi-solid.
Colour	green
Odour	Mild grease like.

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

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Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	30 - 50 %
distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	10 - 20 %

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.
In the event of a known, or potential, high pressure injection injury, worker should obtain immediate medical evaluation.
- In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.
- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.

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Never give anything by mouth to an unconscious person.
Seek medical advice.

Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), sulphur oxides (SO_x), nitrogen oxides (NO_x), phosphorus oxides (PO_x), sulphur compounds (H₂S), calcium oxides (CaO_x), smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : Do not allow uncontrolled discharge of product into the environment.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
In case of insufficient ventilation, wear suitable respiratory equipment.

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Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	OSHA P0
		TWA (Mist)	5 mg/m ³	NIOSH REL
		ST (Mist)	10 mg/m ³	NIOSH REL

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour filter

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R).

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing

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problems.

- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
- Protective measures : Wash contaminated clothing before re-use.
- Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Stringy, smooth, semi-solid.
- Colour : green
- Odour : Mild grease like.
- Odour Threshold : No data available
- pH : No data available
- Pour point : -12 °C (10 °F)Base Fluid Blend
- Boiling point/boiling range : No data available
- Flash point : 291 °C (556 °F)
Method: Cleveland open cup
Base Fluid Blend
- Fire Point : 315 °C (599 °F)
Base Fluid Blend
- Auto-Ignition Temperature : No data available
- Evaporation rate : No data available
- Flammability : Low fire hazard. This material must be heated before ignition will occur.
- Upper explosion limit : No data available
- Lower explosion limit : No data available
- Vapour pressure : No data available
- Relative vapour density :
No data available
- Relative density :
No data available
- Density : 0.8867 kg/l (15 °C / 59 °F)
- Solubility(ies)
- Water solubility : insoluble
- Partition coefficient: n- : No data available

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octanol/water

Viscosity

Viscosity, kinematic : 221.5 cSt (40 °C / 104 °F)
Base Fluid Blend
18.8 cSt (100 °C / 212 °F)
Base Fluid Blend

Explosive properties : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions : Hazardous polymerisation does not occur.
Stable under normal conditions.

Conditions to avoid : No data available

Incompatible materials : Reactive with oxidising agents, acids, alkalis and reducing agents.

Hazardous decomposition products : May release CO_x, NO_x, SO_x, PO_x, H₂S, ammonia, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact

Ingestion

Inhalation

Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Components:

lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

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distillates (petroleum), solvent-dewaxed heavy paraffinic:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

Toxicity to daphnia and other :
aquatic invertebrates Remarks: No data available

Toxicity to algae :
Remarks: No data available

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Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

SAFETY DATA SHEET

PRECISION^{TM/MC} XL EP1

000003000532



Version 3.1

Revision Date 2017/02/27

Print Date 2017/02/27

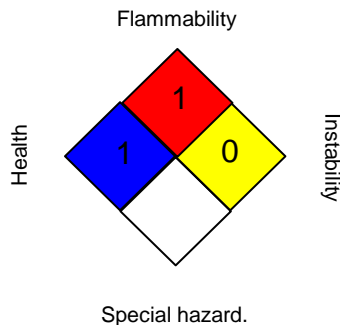
The components of this product are reported in the following inventories:

DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
IECSC	On the inventory, or in compliance with the inventory
ELINCS	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

For Copy of SDS : Internet: lubricants.petro-canada.com/sds
United States, telephone: 1-800-268-5850; fax: 1-800-201-6285
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2017/02/27

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

PRECISION^{TM/MC} XL EP2



000003000891

Version 4.1

Revision Date 2017/02/27

Print Date 2017/02/27

SECTION 1. IDENTIFICATION

Product name : PRECISION^{TM/MC} XL EP2

Product code : PXL2P17, PXL2KGL, PXL2DRL, PXL2CBG, PXL2C30, PXL2, PXL2BLK

Manufacturer or supplier's details
Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga ON L5J 1K2
Canada

Emergency telephone number : Petro-Canada Lubricants Inc.: +1 905-403-5770;
CHEMTREC Transport Emergency: 1-800-424-9300;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : PRECISION XL EP greases are high performance, long life, EP greases designed for trouble-free lubrication of a wide range of automotive and industrial equipment.

Prepared by : Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Stringy, smooth, semi-solid.
Colour	green
Odour	Mild grease like.

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

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PRECISION^{TM/MC} XL EP2

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Other hazards

None known.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
Paraffin oils	8012-95-1	70 - 90 %
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	30 - 50 %
distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	10 - 20 %
Long-chain alkyl amine		0.1 - 1 %

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.
In the event of a known, or potential, high pressure injection injury, worker should obtain immediate medical evaluation.
- In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.
- If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.

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PRECISION^{TM/MC} XL EP2



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Revision Date 2017/02/27

Print Date 2017/02/27

Never give anything by mouth to an unconscious person.
Seek medical advice.

Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), sulphur oxides (SO_x), nitrogen oxides (NO_x), phosphorus oxides (PO_x), sulphur compounds (H₂S), calcium oxides (CaO_x), antimony oxides (SbO_x), potassium oxide, aldehydes, sulfides, alkyl mercaptans, diphenylamine, alkenes, smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Material can create slippery conditions.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

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PRECISION^{TM/MC} XL EP2

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In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity	72623-85-9	TWA (Mist)	5 mg/m ³	CA AB OEL
		STEL (Mist)	10 mg/m ³	CA AB OEL
		TWAEV (Mist)	5 mg/m ³	CA QC OEL
		STEV (Mist)	10 mg/m ³	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour filter

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R).

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is nec-

SAFETY DATA SHEET

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	essary.
Eye protection	: Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	: Wash hands and face before breaks and immediately after handling the product. Wash contaminated clothing before re-use. Ensure that eyewash station and safety shower are proximal to the work-station location.
Hygiene measures	: Wash face, hands and any exposed skin thoroughly after handling. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Stringy, smooth, semi-solid.
Colour	: green
Odour	: Mild grease like.
Odour Threshold	: No data available
pH	: No data available
Pour point	: -12 °C (10 °F)Base Fluid Blend
Boiling point/boiling range	: No data available
Flash point	: 290 °C (554 °F) Method: Cleveland open cup Base Fluid Blend
Fire Point	: 300 °C (572 °F) Base Fluid Blend
Auto-Ignition Temperature	: No data available
Evaporation rate	: No data available
Flammability	: Low fire hazard. This material must be heated before ignition will occur.
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Density	: 0.9083 kg/l (15 °C / 59 °F)

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Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-octanol/water : No data available

Viscosity

Viscosity, kinematic : 219.9 cSt (40 °C / 104 °F)
Base Fluid Blend

17.9 cSt (100 °C / 212 °F)
Base Fluid Blend

Explosive properties : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions : Hazardous polymerisation does not occur.
Stable under normal conditions.

Conditions to avoid : No data available

Incompatible materials : Reactive with oxidising agents, acids, alkalis and reducing agents.

Hazardous decomposition products : May release CO_x, NO_x, SO_x, PO_x, H₂S, CaO_x, SbO_x, KO_x, aldehydes, sulfides, alkyl mercaptans, diphenylamine, alkenes, ammonia, metal oxides, halogenated compounds, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact

Ingestion

Inhalation

Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Components:

lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high viscosity:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

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Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

distillates (petroleum), solvent-dewaxed heavy paraffinic:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg,

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

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Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Offer surplus and non-recyclable solutions to a licensed disposal company.
Waste must be classified and labelled prior to recycling or disposal.
Send to a licensed waste management company.
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

Not regulated as a dangerous good

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PRECISION^{TM/MC} XL EP2



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SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The components of this product are reported in the following inventories:

DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
ELINCS	At least one component is not listed in EINECS but all such components are listed in ELINCS.

SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: lubricants.petro-canada.com/sds
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518
Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2017/02/27

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SAFETY DATA SHEET

According to the Hazardous Products Regulations

Shell Spirax S6 CXME 10W-40

Version
1.4

Revision Date:
2016-05-24

SDS Number:
800001007515

Print Date: 2016-05-25
Date of last issue: 06.05.2016
Date of first issue: 03.03.2011

SECTION 1. IDENTIFICATION

Product name : Shell Spirax S6 CXME 10W-40
Product code : 001D8255

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Canada Products**
400 - 4th Avenue S.W
Calgary AB T2P 0J4
Canada

Telephone : (+1) 8006611600
Telefax : (+1) 4033848345

Emergency telephone number : CHEMTREC (24 hr): 1 (703) 527-3887 or 1 (800) 424-9300 (US)
CANUTEC (24 hr): (+1) 613-996-6666; Toll Free: 1-888-CAN-UTEC (226-8832)

Recommended use of the chemical and restrictions on use

Recommended use : Transmission oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:

SAFETY DATA SHEET

According to the Hazardous Products Regulations

Shell Spirax S6 CXME 10W-40

Version
1.4

Revision Date:
2016-05-24

SDS Number:
800001007515

Print Date: 2016-05-25
Date of last issue: 06.05.2016
Date of first issue: 03.03.2011

No precautionary phrases.

Disposal:

No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used oil may contain harmful impurities.

Not classified as flammable but will burn.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name : Shell Spirax S6 CXME 10W-40

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Zinc dialkyldithiophosphate	68649-42-3	1 - 2.4
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *	Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.

SAFETY DATA SHEET

According to the Hazardous Products Regulations

Shell Spirax S6 CXME 10W-40

Version	Revision Date:	SDS Number:	Print Date: 2016-05-25
1.4	2016-05-24	800001007515	Date of last issue: 06.05.2016
			Date of first issue: 03.03.2011

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.

Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.
Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

SAFETY DATA SHEET

According to the Hazardous Products Regulations

Shell Spirax S6 CXME 10W-40

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Date of first issue: 03.03.2011

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

General Precautions : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Advice on safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type	Control parame-	Basis
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According to the Hazardous Products Regulations

Shell Spirax S6 CXME 10W-40

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		(Form of exposure)	ters / Permissible concentration	
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

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According to the Hazardous Products Regulations

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Date of first issue: 03.03.2011

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard

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Date of first issue: 03.03.2011

work clothes.
It is good practice to wear chemical resistant gloves.

Thermal hazards : Not applicable

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid at room temperature.

Colour : amber

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pH : Not applicable

pour point : -36 °C / -33 °F
Method: ISO 3016

Initial boiling point and boiling range : > 280 °C / 536 °F
estimated value(s)

Flash point : 238 °C / 460 °F
Method: ISO 2592

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

Upper explosion limit : Typical 10 %(V)

Lower explosion limit : Typical 1 %(V)

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Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)

Relative vapour density : > 1
estimated value(s)

Relative density : 0.881 (15 °C / 59 °F)

Density : 881 kg/m³ (15.0 °C / 59.0 °F) Method: ISO 12185

Solubility(ies)

Water solubility : negligible

Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : Pow: > 6
(based on information on similar products)

Auto-ignition temperature : > 320 °C / 608 °F

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : 100 mm²/s (40.0 °C / 104.0 °F)
Method: ISO 3104

14.11 mm²/s (100 °C / 212 °F)
Method: ISO 3104

Explosive properties : Not classified

Oxidizing properties : Data not available

Conductivity : This material is not expected to be a static accumulator.

Decomposition temperature : Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

Chemical stability : Stable.

Possibility of hazardous reactions : Reacts with strong oxidising agents.

Conditions to avoid : Extremes of temperature and direct sunlight.

Incompatible materials : Strong oxidising agents.

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Hazardous decomposition products : Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Acute inhalation toxicity : Remarks: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating.
Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Components:

Zinc dialkyldithiophosphate:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

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Germ cell mutagenicity

Product:

Genotoxicity in vivo : Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies.

Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Reproductive toxicity

Product:

Effects on fertility :
Remarks: Not expected to impair fertility.
Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.

ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

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Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to crustacean (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to crustacean (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Partition coefficient: n-octanol/water : Pow: > 6
Remarks: (based on information on similar products)

Mobility in soil

Product:

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Mobility : Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

TDG

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

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IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category	: Not applicable
Ship type	: Not applicable
Product name	: Not applicable
Special precautions	: Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

The components of this product are reported in the following inventories:

EINECS	: All components listed or polymer exempt.
TSCA	: All components listed.
DSL	: All components listed.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to

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50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Revision Date : 2016-05-24

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN




Safety Data Sheet

1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol <i>NOT FOR SALE IN CALIFORNIA</i>	Manufacturer: WD-40 Company Address: 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607
Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion	Telephone: Emergency only: 1-888-324-7596 (PROSAR) Information: 1-888-324-7596 Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)
Restrictions on Use: None identified	
SDS Date Of Preparation: 07/20/2014	

2 – Hazards Identification

Hazcom 2012/GHS Classification: Flammable Aerosol Category 1 Gas Under Pressure: Compressed Gas Aspiration Toxicity Category 1
<p>Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.</p>
Label Elements: 
DANGER! Extremely Flammable Aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways.
Prevention Keep away from heat, sparks, open flames, hot surfaces – No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use.
Response IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
Storage Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.
Disposal Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3

			Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<25	Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1
Carbon Dioxide	124-38-9	2-3	Simple Asphyxiant Gas Under Pressure, Compressed Gas
Non-Hazardous Ingredients	Mixture	<10	Not Hazardous

Note: The exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

Signs and Symptoms of Exposure: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.

Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Specific Hazards Arising from the Chemical: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.

Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.

Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m ³ TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m ³ TWA, 10 mg/m ³ STEL ACGIH TLV 5 mg/m ³ TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m ³ TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product

Appropriate Engineering Controls: Use in a well-ventilated area.

Personal Protection:

Eye Protection: Avoid eye contact. Always spray away from your face.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Closed Cup (concentrate)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions

Chemical Stability: Stable

Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:

Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.

Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

Chronic Effects: None expected.

Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.

Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms

Persistence and Degradability: Component are readily biodegradable.

Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.

Mobility in Soil: No data available

Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description:

UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many

states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III

Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

VOC Regulations: This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.

Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

Canadian WHMIS Classification: Class A (Compressed gas), Class B-5 (Flammable Aerosol)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

Revision Date: July 20, 2014

Supersedes: May 23, 2014

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED By: I. Kowalski

Regulatory Affairs Dept.

SAFETY DATA SHEET

03650

Section 1. Identification

Product name : KRYLON® Industrial QUIK-MARK™ Water-Based Inverted Marking Paint (Fluorescent) Red Orange
Product code : 03650
Other means of identification : Not available.
CAS # : Not applicable.
Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Manufacturer : Krylon Products Group
101 Prospect Avenue NW
Cleveland, OH 44115

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (800) 247-3266

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 18.7%

GHS label elements

Hazard pictograms



Signal word : Danger

Section 2. Hazards identification

- Hazard statements** : Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Suspected of damaging the unborn child.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs through prolonged or repeated exposure.
- Precautionary statements**
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Pressurized container: Do not pierce or burn, even after use.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
- Storage** : Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY.
Please refer to the SDS for additional information. Keep out of reach of children. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- Hazards not otherwise classified** : DANGER: Rags, steel wool, other waste soaked with this product, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with this product, and sanding residue in a sealed, water-filled, metal container. Dispose of in accordance with local fire regulations.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Toluene	9.77	108-88-3
Propane	9.52	74-98-6
Med. Aliphatic Hydrocarbon Solvent	8.01	64742-88-7
Butane	4.48	106-97-8
Lt. Aliphatic Hydrocarbon Solvent	1.17	64742-89-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Toluene	<p>OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes. ACGIH TLV (United States, 3/2016). TWA: 20 ppm 8 hours.</p>
Propane	<p>NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m³ 10 hours. OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Med. Aliphatic Hydrocarbon Solvent	<p>OSHA PEL (United States, 6/2016). TWA: 100 ppm 8 hours. TWA: 400 mg/m³ 8 hours.</p>
Butane	<p>NIOSH REL (United States, 10/2013). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours. ACGIH TLV (United States, 3/2016). STEL: 1000 ppm 15 minutes.</p>
Lt. Aliphatic Hydrocarbon Solvent	None.

Occupational exposure limits (Canada)

Ingredient name	Exposure limits
Toluene	<p>CA Alberta Provincial (Canada, 4/2009). Absorbed through skin. 8 hrs OEL: 50 ppm 8 hours. 8 hrs OEL: 188 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 5/2015). TWA: 20 ppm 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 20 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). Absorbed through skin. TWAEV: 50 ppm 8 hours. TWAEV: 188 mg/m³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 60 ppm 15 minutes. TWA: 50 ppm 8 hours.</p>
Propane	<p>CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1000 ppm 8 hours. CA British Columbia Provincial (Canada, 5/2015). TWA: 1000 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 1000 ppm 8 hours. TWAEV: 1800 mg/m³ 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 1000 ppm 8 hours.</p>

Section 8. Exposure controls/personal protection

Med. Aliphatic Hydrocarbon Solvent	CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 400 ppm 8 hours. TWAEV: 1590 mg/m ³ 8 hours.
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Occupational exposure limits (Mexico)

Ingredient name	Exposure limits
Toluene	NOM-010-STPS (Mexico, 4/2016). LMPE-PPT: 20 ppm 8 hours.
Propane	NOM-010-STPS (Mexico, 4/2016). LMPE-PPT: 1000 ppm 8 hours.
Butane	NOM-010-STPS (Mexico, 4/2016). LMPE-PPT: 1000 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Not available.
Odor : Not available.
Odor threshold : Not available.
pH : 7
Melting point : Not available.
Boiling point : Not available.
Flash point : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
Evaporation rate : 2 (butyl acetate = 1)
Flammability (solid, gas) : Not available.
Lower and upper explosive (flammable) limits : Lower: 0.9%
Upper: 9.5%
Vapor pressure : 101.3 kPa (760 mm Hg) [at 20°C]
Vapor density : 1 [Air = 1]
Relative density : 0.86
Solubility : Not available.
Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Viscosity : Kinematic (40°C (104°F)): <0.205 cm²/s (<20.5 cSt)
Molecular weight : Not applicable.

Aerosol product

Type of aerosol : Spray
Heat of combustion : 13.2 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame).

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	870 Micrograms	-
	Skin - Mild irritant	Pig	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 250 microliters	-
	Skin - Moderate irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Med. Aliphatic Hydrocarbon Solvent	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract

Section 11. Toxicological information

Lt. Aliphatic Hydrocarbon Solvent	Category 3	Not applicable.	irritation and Narcotic effects Respiratory tract irritation and Narcotic effects
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Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Med. Aliphatic Hydrocarbon Solvent	Category 1	Not determined	Not determined
Butane	Category 2	Not determined	Not determined
Lt. Aliphatic Hydrocarbon Solvent	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Toluene	ASPIRATION HAZARD - Category 1
Propane	ASPIRATION HAZARD - Category 1
Med. Aliphatic Hydrocarbon Solvent	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1
Lt. Aliphatic Hydrocarbon Solvent	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
 nausea or vomiting
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	5293.2 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Toluene	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
Lt. Aliphatic Hydrocarbon Solvent	Acute LC50 >100000 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Toluene	-	-	Readily

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Toluene Lt. Aliphatic Hydrocarbon Solvent	- -	90 10 to 2500	low high

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	- ERG No. 126	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). ERG No. 126	- ERG No. 126	- ERG No. 126	Emergency schedules (EmS) F-D, S-U

Section 14. Transport information

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Proper shipping name : Not available.
Ship type : Not available.
Pollution category : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	2
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE AEROSOLS - Category 1	On basis of test data
GASES UNDER PRESSURE - Compressed gas	Calculation method
TOXIC TO REPRODUCTION (Unborn child) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

History

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Date of issue/Date of revision : 5/18/2017 **Date of previous issue** : 4/17/2017 **Version** : 4.01 13/14

Section 16. Other information

Version	: 4.01
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by Sherwin-Williams, including but not limited to the incorporation of non Sherwin-Williams products or the use or addition of products in proportions not specified by Sherwin-Williams. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.