12.0 ACTION PLAN FOR ETHYLENE GLYCOL (ANTIFREEZE) SPILL

Initial Spill response:

- STOP the flow at source if possible;
- ELIMINATE open flame ignition sources;
- CONTAIN flow of liquid by dyking, barricading or blocking flow by any means available; and
- PREVENT antifreeze from entering any flowing streams

Hazards:

- Moderately toxic by ingestion and inhalation; and
- Flammable.

Action for Fire:

- Use carbon dioxide, dry chemical, foam or water spray (fog);

Recovery:

- Ethylene glycol antifreeze can be soaked up by peat moss or by commercial sorbents such as Hazorb; and
- Access to spilled or recovered ethylene glycol by mammals should be prevented.

Disposal:

- Incineration under controlled conditions; and
- Burial at an approved site.

Appendix A – MSDS SHEETS

- Calcium Chloride
- Diesel
- Gasoline
- Propane
- Jet B

MATERIAL SAFETY DATA SHEET

Calcium Chloride

Section 01 - Chemical And Product And Company Information

Product Identifier ..... Calcium Chloride **Product Use** ..... Industrial uses; drilling mud additives; workover fluids; completion fluids; ice melt; refrigeration. **Supplier Name**..... ClearTech Industries Inc. 2303 Hanselman Avenue Saskatoon SK S7l 5Z3 Canada **Prepared By**..... ClearTech Industries Inc. Technical Department Phone: (306)664-2522 **Preparation Date**..... March 3, 2003 **24-Hour Emergency Phone**..... 306-664-2522

Section 02 - Composition / Information on Ingredients

Hazardous Ingredients..... Calcium Chloride Sodium Chloride Potassium Chloride Strontium Chloride 77-94% 1-2% 2-3% 1% **CAS Number**..... Calcium Chloride Sodium Chloride Potassium Chloride Strontium Chloride 10043-52-4 7647-14-5 7447-40-7 10476-85-4 **Synonym (s)**..... Calcium chloride high test fines; calcium chloride high test powder; calcium chloride 77%; Ice Melt

Section 03 - Hazard Identification

Inhalation..... Dust or mist inhalation may irritate nose, throat, and lungs **Skin Contact / Absorption**..... May cause skin irritation. Under conditions of prolonged contact or when moisture is present, superficial burns may result. Contact with abraded skin or cuts can cause severe necrosis. **Eye Contact**..... May irritate or burn eyes causing corneal injury which may heal slowly. **Ingestion**..... May irritate gastrointestinal tract or cause ulcerations. **Exposure Limits**..... Nuisance particulate level of 10 mg/m3

Section 04 - First Aid Measures

Inhalation..... Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention. **Skin Contact / Absorption**..... Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists **Eye Contact**..... Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention **Ingestion**..... Give large amounts of water. Do not give anything by mouth to an unconscious or convulsing person. Immediately phone your local poison control center. Vomiting may need to be induced under the direction of medical personnel.

Section 05 - Fire Fighting

Conditions of Flammability..... Non-flammable **Means of Extinction**..... Product does not burn. Use appropriate extinguishing media for material that is supplying the fuel to the fire. **Flash Point**..... Not Applicable **Auto-ignition Temperature**..... Not Applicable **Upper Flammable Limit** ..... Not Applicable **Lower Flammable Limit**..... Not Applicable

 Hazardous Combustible Products. None known **Special Fire Fighting Procedures**... Wear NIOSH-approved self-contained breathing Apparatus and protective clothing. **Explosion Hazards**..... Only explosive when mixed with Furan 2-peroxycarboxylic acid

Section 06 - Accidental Release Measures

Leak / Spill..... Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Prevent material from entering sewers. **Deactivating Materials**..... Not Available

Section 07 - Handling and Storage

Handling Procedures..... Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. **Storage Requirements**..... Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials. Prolonged storage may cause product to cake and become wet.

Section 08 - Personal Protection and Exposure Controls

Protective Equipment Eyes..... Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury. **Respiratory**..... NIOSH-approved respirator for dust should be worn, if needed.
Gloves..... Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing with soap and water, dry thoroughly before reuse.
Clothing..... Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing with soap and water, dry thoroughly before reuse.
Footwear..... Impervious boots of chemically resistant material should be worn at all times
Other..... No other information available

 Engineering Controls Ventilation Requirements..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure, and control of process conditions. Supply sufficient replacement air to make up for air removed by exhaust systems. **Other**..... Emergency shower and eyewash should be in close proximity.

Section 09 - Physical and Chemical Properties

Physical State..... Solid **Odour and Appearance**..... White odourless solid pellets **Odour Threshold**..... Not Applicable **Specific Gravity (Water=1)**..... 2.15 **Vapor Pressure (mm Hg, 20C)**..... Not Applicable **Vapor Density (Air=1)**..... Not Applicable **Evaporation Rate**..... Not Applicable **Boiling Point**..... >1600°C **Freeze/Melting Point**..... 772°C **pH**..... >7 for an aqueous solution **Water/Oil Distribution Coefficient**... Not Available **Bulk Density**..... Not Available **% Volatiles by Volume**..... 0 **Solubility in Water**..... 745g/L at 20°C **Molecular Formula**..... $CaCl_2$ **Molecular Weight**..... 110.99

Section 10 - Stability and Reactivity

Stability..... Very Stable **Incompatibility**..... Incompatible with sulphuric acid, water-reactive materials such as sodium, methyl vinyl ether, and zinc as in galvanized iron.

 Hazardous Products of Decomposition With sulphuric acid, yields hydrogen chloride gas. With water-reactive materials, causes an exothermic reaction. With methyl vinyl ether, starts runaway polymerization reaction. With zinc, yields explosive hydrogen gas. **Polymerization**..... Will not occur

Section 11 - Toxicological Information

Irritancy..... Mild irritant. **Sensitization**..... Not Available **Chronic/Acute Effects**..... Overexposure to calcium chloride may cause stomach disturbances. **Synergistic Materials**..... Not Available **Animal Toxicity Data**..... LD_{50}(oral, rat) = 1400 mg/kg (anhydrous calcium chloride) LD_{50}(oral, mouse) = 1940 mg/kg (anhydrous calcium chloride) LD_{50}(dermal, rabbit) > 5000 mg/kg (anhydrous calcium chloride) LD_{50}(intravenous, rat) = 123 mg/kg (strontium) **Carcinogenicity**..... Not considered to be carcinogenic by NTP, IARC, OSHA. **Reproductive Toxicity**..... Not Available **Teratogenicity**..... Not Available **Mutagenicity**..... Not Available

Section 12 - Ecological Information

Fish Toxicity..... Not Available **Biodegradability**..... Not Available **Environmental Effects**..... Not Available

Section 13 - Disposal Considerations

Waste Disposal..... Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transportation Information

TDG Classification Class..... Not a dangerous good. **Group**..... Not a dangerous good. **PIN Number**..... Not a dangerous good. **Other**..... Secure containers (full and/or empty) with suitable hold down devises during shipment.

Section 15 - Regulatory Information

WHMIS Classification..... D2 **NOTE: THE PRODUCT LISTED ON THIS MSDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS MSDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS**

Section 16 - Other Information

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

ClearTech Industries Inc. - Locations

Corporate Head Office: 2302 Hanselman Avenue, Saskatoon, SK, S7L 5Z3 Phone: 306-664-2522 Fax: 306-665-6216 www.ClearTech.ca

Location	Address	Postal Code	Phone Number	Fax Number
Richmond BC	12431 Horseshoe way	V7A 4X6	604-272-4000	604-272-4596
Calgary AB	5516E - 40th St. S.E.	T2C 2A1	403-279-1096	403-236-0989
Edmonton AB	11750 - 180th Street	T5S 1N7	780-452-6000	780-452-4600
Saskatoon SK	2302 Hanselman Avenue	S7L 5Z3	306-933-0177	306-933-3282
Regina SK	555 Henderson Drive	S42 5X2	306-721-7737	306-721-8611
Winnipeg MB	340 Saulteaux Crescent	R3J 3T2	204-987-9777	204-987-9770
Mississauga ON	7480 Bath Road	L4T 1L2	905-612-0566	905-612-0575

24 Hour Emergency Number - All Locations - 306-664-2522

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: S-1 Synthetic Diesel Fuel
Synonyms: Synthetic Diesel Fuel—Winter Grade, Synthetic Diesel Fuel-- Arctic Grade
Product Code: not applicable
MSDS Code: not applicable
Chemical Family: Hydrocarbon

Responsible Party: Syntroleum® Corporation
4322 South 49th West Ave.
Tulsa, OK 74107

For product information contact Syntroleum® Corporation:
8am – 4pm, U.S. Central Time, Mon – Fri: 918-764-4358

EMERGENCY INFORMATION

24-Hour Emergency Telephone Number:

For Chemical Emergencies:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800) 424-9300
Others: (703) 527-3887 (collect)

Health Hazards: Aspiration hazard if swallowed. Can enter lungs and cause damage. Avoid contact with eyes. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: OSHA combustible liquid. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment).

Physical Form: Liquid
Appearance: Colorless *(may contain a dye)*
Odor: Odorless to mild paraffin

NFPA HAZARD CLASS: Health
0 = no special hazards Flammability
4 = maximum hazard class Reactivity

2. COMPOSITION / INFORMATION ON INGREDIENTS

#	Component	CAS No.	Approx. Wt%
1	Fuel, diesel, C_{8-28} - alkane rich	437986-25-9	100

Note 1: May contain up to 0.5 wt% performance additive(s). Refer to product data sheet.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact may cause mild eye irritation including stinging, watering, and redness. . This product produced minimal eye irritation in rabbits.

Skin Contact: Not known to be a skin irritant. No harmful effects from skin absorption are expected, however avoid frequent or prolonged contact.

Inhalation (Breathing): Expected to have a low degree of toxicity by inhalation.

Ingestion (Swallowing): This material may be harmful if ingesed. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs & Symptoms: Effects of overexposure may include irritation of the nose, throat and digestive tract, nausea, vomiting, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, and fatigue), pulmonary edema (accumulation of fluids in the lungs) and pneumonitis (inflammation of the lungs).

Aggravated Medical Conditions: Conditions aggravated by exposure may include respiratory (asthma-like) disorders.

Developmental: No data.

Cancer: No specific data on this substance.

DELAYED OR OTHER HEALTH EFFECTS: Cancer: Prolonged or repeated exposure to exhaust gasses produced from engines burning this material may cause cancer. Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Diesel exhaust particulate has been classified as reasonably anticipated to be a human carcinogen in the National Toxicology Program's Ninth Report on Carcinogens. The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. Diesel engine exhaust is known to the State of California to cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). See Section 11 for additional information. Risk depends on duration and level of exposure.

Target Organs: No data.

Other Comments: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as Solvent or Painters' Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: First aid is not normally required. However, it is good practice to wash any chemical from the skin.

Inhalation (Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point (PMCC): 100-125°F (37.8-51.5°C)
OSHA Flammability Class: Combustible Class II Liquid
LEL (vol%):~0.6 UEL (vol%): ~4.7
Autoignition Temperature: ~257°C(~494°F)

Combustion Products: Carbon dioxide, carbon monoxide, water vapor.

Extinguishing Media: Dry chemical, carbon dioxide, or alcohol or polymer foam is recommended. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Special Fire Fighting Procedures & Precautions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

Unusual Fire & Explosion Hazards: This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Heated liquid can release vapors that may readily form flammable mixtures at or above its flash point. If container is not properly cooled, it can rupture in the heat of a fire.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: OSHA Combustible. Keep all sources of ignition and hot surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. Notify persons downwind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material (e.g., sand or vermiculite). Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. **If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).**

7. HANDLING STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29 CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 8). Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks or other sources of ignition. They may explode and cause injury bunged, and promptly shipped to the supplier or a drum conditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA Regulations, ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame". Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits

Substance Name	CAS No.	Agency	Limits	Notes
Fuel, diesel, $C_{8\text{-}28}$ -	437986-25-9	OSHA	PEL TWA 5	

alkane rich		mg/m^3
	ACGIH	TLV TWA 5 mg/m^3
	ACGIH	STEL 10 mg/m^3

Note: Country, state, local, or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Personal Protective Equipment (PPE) and Protective Measures

Respiratory Protection: A NIOSH certified air-purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air-supplied respirator if there is potential for uncontrolled release, exposure levels are not known or any other circumstances where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Protective Clothing: Not required based on the hazards of the material. However, it is considered good practice to wear gloves when handling chemicals.

Eye/Face Protection: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Additional Protective Measures: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).
A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. PHYSICAL & CHEMICAL PROPERTIES

Note: Unless otherwise indicated, values are determined at 68°F (20°C) and atmospheric pressure (760 mm Hg). Data is typical, individual samples may vary.

Flash Point (PMCC): 100-125°F (37.8-51.5°C)
Autoignition Temperature: no data
Appearance: Colorless *(may contain a dye)*
Physical State: Liquid
Odor: Odorless to mild paraffin
Vapor Pressure: <2 psi
Vapor Density (air = 1): >1
Viscosity at 40°C: 1.3 – 1.9 cSt
Approx. Boiling Range: 260-720°F (127-382°C)
Freezing Point: <32°F (<0°C)
Solubility in water: Insoluble
pH: not applicable
Density: 0.77 g/ml@15°C

10. STABILITY & REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. OSHA Combustible liquid. Vapor from heated liquid can cause a flash fire.

Conditions to Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Incompatible Materials: Avoid contact with strong oxidizing agents.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

No definitive information available on carcinogenicity, mutagenicity, target organs or developmental toxicity. Diesel engine exhaust has been classified as a Group 2a Carcinogen (probably carcinogenic to humans) by IARC. See information in Section 3.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic of ignitability (D001). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinse material could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

	USA DOT
Shipping Name:	Flammable liquids, n.o.s. (Paraffins and Isoparaffins)
Hazard Class & Div.:	3
ID Number:	UN1993
Packing Group:	III
Label(s):	Flammable liquid
Placard(s):	Flammable liquid (3)
Notes:	

Notes:

1. Static Accumulator (50 picosiemens or less) unless performance additive has been added to mitigate static accumulation – consult appropriate product data sheet.

14. REGULATORY INFORMATION

This material is listed on the following country inventory lists: no data

TSCA – Exempted under CFR 720.30 and CFR 720.36

This material contains the following list of chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372: none known

This material contains the following list of chemicals subject to the reporting requirements of California Proposition 65: none known

NTP, IARC, or OSHA has not identified this material as a carcinogen. Diesel exhaust has been listed as a potential carcinogen.

EPA (CERCLA) reportable quantity: none known

For details on your regulatory requirements you should contact the appropriate agency in your state or country.

15. DOCUMENTARY INFORMATION

Current Issue Date: 15 Nov 2004 Previous Issue Date: 10 October 2004

16. DISCLAIMER OF EXPRESSED & IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. The product is the subject of continued further experimentation and testing. HOWEVER, NO WARRANTY OF MERCHANT LIABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. This information and product are furnished on the condition that the person receiving them shall make his/her own determination as to the suitability of the product for his/her particular purpose and on the condition that he/she assume the risk of his/her use thereof.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **S-2 Synthetic Diesel Fuel**

Synonyms: Synthetic Diesel Fuel—Summer Grade, Synthetic Diesel Fuel—Winter Grade, Synthetic Diesel Fuel—Arctic Grade, GTL Diesel Fuel, FT Diesel Fuel, Syntroleum SD-2 Synthetic Distillate.

Product Code: not applicable

MSDS Code: not applicable

Chemical Family: Hydrocarbon

Responsible Party: Syntroleum® Corporation
4322 South 49th West Ave.
Tulsa, OK 74107

For product information contact Syntroleum® Corporation:
8am – 4pm, U.S. Central Time, Mon – Fri: 918-764-4358

EMERGENCY INFORMATION

24-Hour Emergency Telephone Number:

For Chemical Emergencies:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800) 424-9300
Others: (703) 527-3887 (collect)

Health Hazards: Aspiration hazard if swallowed. Can enter lungs and cause damage. Avoid contact with eyes. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: OSHA combustible liquid. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment).

Physical Form: Liquid
Appearance: Colorless *(may contain a dye)*
Odor: Odorless to mild paraffin

NFPA HAZARD CLASS: Health
0 = no special hazards Flammability
4 = maximum hazard class Reactivity

2. COMPOSITION / INFORMATION ON INGREDIENTS

#	Component	CAS No.	Approx. Wt%
1	Fuel, diesel, C_{8-28}-alkane rich and Methyl-branched alkane rich.	437986-25-9	100

Note 1: May contain up to 0.5 wt% performance additive(s). Refer to product data sheet.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin Contact: Not known to be a skin irritant. No harmful effects from skin absorption are expected.

Inhalation (Breathing): Expected to have a low degree of toxicity by inhalation.

Ingestion (Swallowing): This may be harmful if ingested. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs & Symptoms: Effects of overexposure may include irritation of the nose, throat and digestive tract, nausea, vomiting, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, and fatigue), pulmonary edema (accumulation of fluids in the lungs) and pneumonitis (inflammation of the lungs).

Aggravated Medical Conditions: Conditions aggravated by exposure may include skin or respiratory (asthma-like) disorders.

Developmental: No data.

Cancer: No specific data on this substance.

DELAYED OR OTHER HEALTH EFFECTS: Cancer: Prolonged or repeated exposure to exhaust gasses produced from engines burning this material may cause cancer. Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Diesel exhaust particulate has been classified as reasonably anticipated to be a human carcinogen in the National Toxicology Program's Ninth Report on Carcinogens. The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. Diesel engine exhaust is known to the State of California to cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). See Section 11 for additional information. Risk depends on duration and level of exposure.

Target Organs: No data.

Other Comments: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as Solvent or Painters' Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: First aid is not normally required. However, it is good practice to wash any chemical from the skin. If Skin Irritation developes, wash with soap and water, and seek medical attention.

Inhalation (Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from the source of exposure and into fresh air. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point (PMCC): 125-140°F (52-60°C)
OSHA Flammability Class: Combustible Liquid Class II
LEL (vol%): ~0.6 UEL (vol%): ~4.7
Autoignition Temperature: 257°C (494°F)

Combustion Products: Carbon dioxide, carbon monoxide, water vapor.

Extinguishing Media: Dry chemical, carbon dioxide, or alcohol or polymer foam is recommended. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Special Fire Fighting Procedures & Precautions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk.

Unusual Fire & Explosion Hazards: This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Heated liquid can release vapors that may readily form flammable mixtures at or above its flash point. If container is not properly cooled, it can rupture in the heat of a fire.

6. ACCIDENTAL RELEASE MEASURES