



## Material Safety Data Sheet

MSDS ID NO.: 0133SPE012  
Revision date: 01/30/2004

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**Product name:** SSA Propane  
**Synonyms:** Liquified Petroleum Gas, SSA; LPG, SSA; Propane, SSA; SSA Liquified Petroleum Gas  
**Chemical Family:** Aliphatic Hydrocarbon  
**Formula:** CH<sub>3</sub>CH<sub>2</sub>CH<sub>3</sub>

**Supplier:**  
Speedway/Superamerica LLC  
P O BOX 1500  
ENON OH 45501

**Other information:** 419-421-3070  
**Emergency telephone number:** 877-627-5463

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Propane is an aliphatic petroleum hydrocarbon. Ethyl mercaptan (15-25 ppm) is added as an odorant. The odor threshold of the mercaptan is 1 ppb.

#### Product information

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
SSA Propane	74-98-6	100	= 2500 ppm TWA	= 1000 ppm TWA = 1800 mg/m <sup>3</sup> TWA	

#### Component Information

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Propane	74-98-6	90-100	= 2500 ppm TWA	= 1000 ppm TWA = 1800 mg/m <sup>3</sup> TWA	
Propylene	115-07-1	1-5			ACGIH Simple asphyxiant
Ethane	74-84-0	000.5000 - 003.0000			ACGIH Simple asphyxiant
Butane & Heavier	Mixture	0-2.5			
Sulfur	7704-34-9	< 000.0100			

#### Notes:

The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

PROPANE IS A COLORLESS GAS OR LIQUID STENCHED WITH A FOUL SULFUR SMELLING ODORANT. IT IS SHIPPED OR TRANSPORTED AS A LIQUIFIED GAS UNDER PRESSURE. THIS PRODUCT IS EXTREMELY FLAMMABLE AND EXPLOSIVE. AT HIGH CONCENTRATIONS THIS PRODUCT IS A SIMPLE ASPHYXIAN, WHICH DISPLACES OXYGEN FROM THE BREATHNG ATMOSPHERE. MAY CAUSE SKIN AND EYE BURNS UPON LIQUID CONTACT. LARGE RELEASES CAN CREATE A FLAMMABLE VAPOR CLOUD.

**OSHA WARNING LABEL:**

**DANGER!**  
**EXTREMELY FLAMMABLE.**  
**LIQUID AND GAS UNDER PRESSURE.**  
**LIQUID CAN CAUSE FROST BURNS.**

**CONSUMER WARNING LABEL:**

**A CONSUMER WARNING LABEL IS NOT APPLICABLE FOR THIS PRODUCT.**

**Inhalation:** Product is an anesthetic at high concentrations, producing dizziness, headache, incoordination and narcosis; extremely high concentrations can cause asphyxiation and death by displacement of oxygen from the breathing atmosphere.

**Ingestion:** Ingestion not likely.

**Skin contact:** Vapor is generally non-irritating to skin. Direct contact with liquified product can cause "cold burn" or frostbite.

**Eye contact:** Vapor is generally non-irritating to eyes. Direct contact with liquified product can cause "cold burn" or frostbite.

**Carcinogenic Evaluation:**

**Product information**

Name	IARC:	NTP:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
SSA Propane 74-98-6	NE			

**Notes:** The International Agency for Research on Cancer (IARC) has not evaluated this product.

**Component Information**

Name	IARC:	NTP:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Propylene 115-07-1			A4 - Not Classifiable as a Human Carcinogen	

**Notes:** The International Agency for Research on Cancer (IARC) has concluded that propylene is not classifiable as to its carcinogenicity to humans (Group 3).

**4. FIRST AID MEASURES**

**Inhalation:** If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician.

**Skin contact:** If liquified product has caused a "frost burn", remove contaminated clothing. Thaw frostbitten areas slowly with lukewarm water or by wrapping affected areas with blankets. Do not rub affected areas. Let circulation reestablish itself naturally, exercising area if possible. Call a physician.

**Ingestion:** Ingestion not likely. If swallowed, immediately call a physician.

**Eye contact:** Liquid: Flush with large amounts of tepid water for at least 15 minutes. Immediately call a physician.  
Gas: Call a physician if symptoms or irritation occur.

**Medical conditions aggravated by exposure:** Inhalation of high vapor concentrations of components of this product in animals has produced cardiac sensitization. Such sensitization may cause changes in heart rhythms. This latter effect was shown to be enhanced by oxygen deficiency or the injection of adrenalin-like agents.

## 5. FIRE FIGHTING MEASURES

**Suitable extinguishing media:** For small fires, Class B fire extinguishing media such as CO<sub>2</sub>, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

**Specific hazards:** This product has been determined to be a flammable gas/liquid per the OSHA Hazard Communication Standard, and should be handled accordingly. For additional fire related information see NFPA 30 or North American Emergency Response Guide 115.

**Special protective equipment for firefighters:** BLEVE's (boiling liquid expanding vapor explosions) can occur when a liquid in a pressurized container in close proximity to a fire reaches a temperature well above its boiling point. Its effect could lead to a catastrophic failure of the vessel resulting in flying equipment fragments, a shock wave and a fireball causing serious damage and death. Isolate hazard area. If safe to do so, stop the flow of gas and allow fire to burn out. Extinguishing the flame before shutting off the supply can cause the formation of explosive mixtures. In some cases it may be preferred to allow the flame to continue to burn. Use extreme caution when fighting liquefied petroleum gas fires. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Avoid use of solid water streams. Contact with water and liquified product can cause increased vaporization.

**Flash point:** -156 F

**Autoignition temperature:** 871 F

**Flammable limits in air - lower (%):** 2.1

**Flammable limits in air - upper (%):** 9.5

**NFPA rating:**

Health: 1	<b>HMIS classification:</b>
Flammability: 4	Health: 1
Reactivity: 0	Flammability: 4
Other: -	Reactivity: 0
	Special: *See Section 8 for guidance in selection of personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Leaking containers should be moved outdoors or to well-ventilated area and contents transferred to a suitable container. Product vapor is heavier than air and can collect in low areas that are without sufficient ventilation. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer.

## 7. HANDLING AND STORAGE

### Handling:

Product is stored as a liquid but used in the gaseous state. Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Avoid overpressurizing or overfilling cylinders. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues.

Avoid repeated and prolonged skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering measures:</b>	Local or general exhaust required in an enclosed area or with inadequate ventilation.
<b>Respiratory protection:</b>	Use atmosphere supplying respirators in the event of oxygen deficiency, when material produces vapors that exceed permissible limits or when excessive vapors are generated. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.
<b>Skin and body protection:</b>	Wear insulated gloves to prevent skin contact and frostbite.
<b>Eye protection:</b>	Use goggles or face-shield if there is a potential for splashing.
<b>Hygiene measures:</b>	Use mechanical ventilation equipment that is explosion-proof.

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

<b>Appearance:</b>	Colorless Liquified Gas
<b>Physical state (Solid/Liquid/Gas):</b>	Liquid
<b>Substance type (Pure/Mixture):</b>	Pure
<b>Color:</b>	Colorless
<b>Odor:</b>	Rotten-egg.
<b>Molecular weight:</b>	Not determined.
<b>pH:</b>	No data available.
<b>Boiling point/range:</b>	-43.7 F
<b>Melting point/range:</b>	-305.8 F
<b>Decomposition temperature:</b>	Not applicable.
<b>Specific gravity:</b>	.51 Liquid
<b>Density:</b>	4.4 lbs/gal @ 32 F
<b>Bulk density:</b>	No data available.
<b>Vapor density:</b>	1.56
<b>Vapor pressure:</b>	7600 mm Hg @ 80 F 147 PSI @ 80 F
<b>Evaporation rate:</b>	No data available.
<b>Solubility:</b>	Moderate 6.5%
<b>Solubility in other solvents:</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>VOC content(%):</b>	No data available.
<b>Viscosity:</b>	No data available.

## 10. STABILITY AND REACTIVITY

**Stability:** The material is stable at 70 F, 760 mm pressure.

**Polymerization:** Will not occur.

**Hazardous decomposition products:** Combustion produces carbon monoxide.

**Materials to avoid:** Strong oxidizers such as nitrates, perchlorates, chlorine, fluorine.

**Conditions to avoid:** Sources of heat or ignition.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity:

#### Product information

Name	CAS Number	Inhalation:	Dermal:	Oral:
SSA Propane	74-98-6	>4000,000 ppm for 6 hr [Rat]	n/a	n/a

Some of the major components of this product are considered to be simple asphyxiant gases without significant potential for systemic toxicity. At high concentrations these gases act as asphyxiants by diluting and displacing oxygen. Symptoms of persons exposed to oxygen deficient atmospheres include headache, dizziness, incoordination, cyanosis and narcosis. Extremely high concentrations can produce unconsciousness followed by death.

At extremely high concentrations and excessive exposure conditions components of this product may produce cardiac sensitization.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:** Liquid product is not toxic to aquatic life or waterfowl. The aquatic 96 hour TLM for propane is >100 ppm.

## 13. DISPOSAL CONSIDERATIONS

**Cleanup Considerations:** This product as produced is not specifically listed as an EPA RCRA hazardous waste according to federal regulations (40 CFR 261). However, when discarded or disposed of, it may meet the criteria of an "ignitable" hazardous waste (D001). This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations. Bleeding off small amounts of this product into the atmosphere or controlled incineration of large amounts are potential disposal methods provided all regulatory requirements are met.

## 14. TRANSPORT INFORMATION

49 CFR 172.101:

**DOT:**

**Transport Information:** This material when transported via US commerce would be regulated by DOT Regulations.

**Proper shipping name:** Propane  
**UN/Identification No:** UN 1978  
**Hazard Class:** 2.1

Packing group:  
DOT reportable quantity (lbs):

Not applicable.  
Not applicable.

**TDG (Canada):**

Proper shipping name:  
UN/Identification No:  
Hazard Class:  
Packing group:  
Regulated substances:

Propane  
UN 1978  
2.1  
Not applicable.  
Not applicable.

## 15. REGULATORY INFORMATION

### Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b):

This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard:

This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

### EPA Superfund Amendment & Reauthorization Act (SARA):

#### SARA Section 302:

This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Propane	NA
Propylene	NA
Ethane	NA
Butane & Heavier	NA
Sulfur	NA

#### SARA Section 304:

This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Propane	NA
Propylene	NA
Ethane	NA
Butane & Heavier	NA
Sulfur	NA

#### SARA Section 311/312:

The following EPA hazard categories apply to this product:

Acute Health Hazard.  
Fire Hazard.  
Sudden Release Of Pressure.

#### SARA Section 313:

This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

Name	CERCLA/SARA 313 Emission reporting:
Propane	None
Propylene	= 1.0 percent de minimis concentration
Ethane	None
Butane & Heavier	None
Sulfur	None

### State and Community Right-To-Know Regulations:

The following component(s) of this material are identified on the regulatory lists below:

MSDS ID NO.: 0133SPE012

Product name: SSA Propane

## Propane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 1594
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1594
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

## Propylene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 1609
Pennsylvania Right-To-Know:	environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1609
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

## Ethane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 0834
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - fourth degree

New Jersey - Environmental Hazardous  
Substances List:  
Illinois - Toxic Air Contaminants  
New York - Reporting of Releases Part 597 -  
List of Hazardous Substances:

SN 0834; NJ uses UN1035 for reporting purposes

Not Listed  
Not Listed

**Butane & Heavier**

Louisiana Right-To-Know:  
California Proposition 65:  
New Jersey Right-To-Know:  
Pennsylvania Right-To-Know:  
Massachusetts Right-To Know:  
Florida substance List:  
Rhode Island Right-To-Know:  
Michigan critical materials register list:  
Massachusetts Extraordinarily Hazardous  
Substances:  
California - Regulated Carcinogens:  
Pennsylvania RTK - Special Hazardous  
Substances:  
New Jersey - Special Hazardous Substances:  
New Jersey - Environmental Hazardous  
Substances List:  
Illinois - Toxic Air Contaminants  
New York - Reporting of Releases Part 597 -  
List of Hazardous Substances:

Not Listed  
Not Listed  
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**Sulfur**

Louisiana Right-To-Know:  
California Proposition 65:  
New Jersey Right-To-Know:  
Pennsylvania Right-To-Know:  
Massachusetts Right-To Know:  
Florida substance List:  
Rhode Island Right-To-Know:  
Michigan critical materials register list:  
Massachusetts Extraordinarily Hazardous  
Substances:  
California - Regulated Carcinogens:  
Pennsylvania RTK - Special Hazardous  
Substances:  
New Jersey - Special Hazardous Substances:  
New Jersey - Environmental Hazardous  
Substances List:  
Illinois - Toxic Air Contaminants  
New York - Reporting of Releases Part 597 -  
List of Hazardous Substances:

Not Listed  
Not Listed  
sn 1757  
[present]  
Present  
Not Listed.  
Flammable  
Not Listed.  
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Not Listed

**Canadian Regulatory Information:**

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or the Non Domestic Substance List (NDSL).

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Propane	A; B1	
Propylene	A; B1	
Ethane	A; B1	
Sulfur	B4	

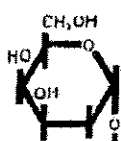
## 16. OTHER INFORMATION

**Additional Information:** No data available.

**Prepared by:** Craig M. Parker Manager, Toxicology and Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Speedway SuperAmerica (SSA) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. SSA assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

**End of Safety Data Sheet**

**Poly-Drill Drilling Systems**

1824 - 104 Avenue, S.W.  
Calgary, Alberta, Canada T2W-OA8  
(403) 259-5112 FAX (403) 255-7185  
email: [polydril@telus.net](mailto:polydril@telus.net)  
[www.poly-drill.com](http://www.poly-drill.com)

**poly-drill.com****MATERIAL SAFETY DATA SHEET/FICHE SIGNALÉTIQUE****1. PRODUCT IDENTIFICATION**

PRODUCT TRADE NAME: Poly-Drill 133-X  
PRODUCT DESCRIPTION: LIQUID ANIONIC POLYMER  
CHEMICAL DESCRIPTION: Polymer, Surfactant(s), Water, Hydrocarbon solvent  
UPDATED: March 15, 2004

**NFPA704M/HMIS RATING**

HEALTH: 0/1 FLAMMABILITY: 1/1 REACTIVITY: 0/0 OTHER:  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**2. COMPOSITION**

A liquid polymer: Evaluation of the ingredient(s) has found no ingredient(s) hazardous as per WHMIS regulations. None of the substances in this product are hazardous.

**3. PHYSICAL DATA**

Flash Point: >100°C (PMCC)  
Specific Gravity (@ 25°C.): 1.08  
Solubility in Water: Emulsifiable  
pH: 8.1 (1.0% solution)  
Freeze Point: -10 °C (14 Degrees F)  
Density (g/ml): 1.08 at 25 °C  
Physical State: Liquid  
Appearance: Blue liquid  
Odor: Hydrocarbon

Note: These physical properties are typical values for this product.

**4. FIRE AND EXPLOSION DATA**

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. Chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, oxides of carbon (COx), oxides of nitrogen (NOx) may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

**5. FIRE FIGHTING MEASURES**

FLASH POINT: >100°C (PMCC)

**EXTINGUISHING MEDIA:** Based on the NFPA guide, use dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For larger fires, use water spray or fog, thoroughly drenching the burning material.

**UNSUITABLE EXTINGUISHING MEDIA:**  
Do not use water unless flooding amounts are available.

**UNUSUAL FIRE AND EXPLOSION HAZARD:** May evolve oxides of nitrogen (NOx) under fire conditions.

## **6. HEALTH HAZARD DATA**

### **EMERGENCY OVERVIEW:**

**CAUTION:** May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

**PRIMARY ROUTE(S) OF EXPOSURE:** Eye & Skin

**EYE CONTACT:** Can cause mild to moderate irritation

**SKIN CONTACT:** Can cause mild, short-lasting irritation

**SYMPTOMS OF EXPOSURE:** A review of available data does not identify any symptoms from exposure not previously mentioned.

**AGGRAVATION OF EXISTING CONDITIONS:** A review of available data does not identify any worsening of existing conditions.

## **7. EMERGENCY AND FIRST AID PROCEDURES**

**SKIN:** Wash exposed area with soap and water. If irritation or abnormalities persist, call a physician.

**EYE:** Immediately flush eyes with water for 15 minutes, if irritation or abnormalities persist, call a physician.

**INHALATION:** Remove to fresh air. If breathing becomes difficult, give oxygen and call a physician.

**INGESTION:** Do not induce vomiting. Call a physician immediately.

**CAUTION:** If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water. Call for medical assistance immediately.

## **8. HANDLING, ACCIDENTAL RELEASE MEASURES & DISPOSAL CONSIDERATIONS**

**Storage:** Keep container tightly closed when not in use.

### **DISPOSAL:**

In Ontario, the waste class under Regulation 347 is: 233L

### **SMALL SPILLS:**

Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area.

### **LARGE SPILLS:**

Contain liquid using absorbent material, by digging trenches or by dyking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated.

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.

**ENVIRONMENTAL PRECAUTIONS**

This product should NOT be directly discharged into lakes, ponds, streams, waterways or public water supplies.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state, provincial and federal regulations.

**9. INDUSTRIAL HYGIENE CONTROL MEASURES****OCCUPATIONAL EXPOSURE LIMITS:**

This product does not contain any substance that has an established exposure limit.

Respiratory Protection: None normally required.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

Ventilation: General ventilation is recommended.

Eye Protection: Safety glasses, if personally preferred

Gloves: Generally not necessary. Personal preference. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton, and butyl (compatibility studies have not been performed).

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

**10. TOXICOLOGICAL PROPERTIES****SENSITIZATION:**

This product is not expected to be a sensitizer.

A "LC50-96" Pass/Fail Bioassay test. This test determines the lethality of a fluid on young aquatic organisms. The fluid fails if 50% or more of the animals are dead after 96 hours in the fluid.

96 hour static acute LC50 to Rainbow Trout = Greater than 1,000 mg/L

96 hour no observed effect concentration = 125 mg/L based on no mortality or abnormal effects

96 hour static acute LC50 to Sheepshead Minnow = Greater than 1,000 mg/L

96 hour no observed effect concentration = 1,000 mg/L (highest concentration tested) based on no mortality or abnormal effects.

96 hour static acute LC50 to Mysid Shrimp = 400 mg/L

96 hour no observed effect concentration = 180 mg/L based on no mortality or abnormal effects.

96 hour static acute LC50 to Daphnia Magna = 400 mg/L

96 hour no observed effect concentration = 56 mg/L (lowest concentration tested) based on no mortality or abnormal effects.

**Microtoxicity**

The Microtox bioassay has been established as the reference test for mud additive toxicity testing.

Test Method: Luminescent Bacteria, IC50@ 15 min

Reference: Appendix 1: Microtox Bioassay Procedure, Drilling Waste Management, Guide G50. 1993. Alberta Energy and Utilities Board, Calgary, AB, Canada.

Sample: Poly Drill 1330, sample #97324-1 for test #970723, 97/05/09 by D. Lintott

Preparation: Sample was diluted to 2 g/L, which formed thick, slightly cloudy liquid. The sample was then centrifuged for 1 hour.

## Test Results:

SAMPLE	TREATMENT	%CTL	IC20%	IC50	RESULT
97324-1	None	N/A	14 (9-22)	>91	PASS

The following results are for a 1% aqueous solution of product.

**CARCINOGENICITY:**

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Government Industrial Hygienists (ACGIH).

**HUMAN HAZARD CHARACTERIZATION:**

Based on our Hazard Characterization, the potential human hazard is: LOW

**ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION:**

Based on our Hazard Characterization, the potential environmental hazard is: LOW.

**11. DEPARTMENT OF TRANSPORTATION INFORMATION**

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES: PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Shipping Name: Liquid Drilling Additive

Hazard Class: Not hazardous

Cautionary Labeling: None required

**14. OTHER INFORMATION**

This information contained herein is given in good faith, but no warranty, expressed or implied is made



# Material Safety Data Sheet

## Section 1. Product and Company Identification

**Product Name** Calcium Chloride, Dihydrate  
**Manufacturer** EMD Chemicals Inc.  
P.O. Box 70  
480 Democrat Road  
Gibbstown, NJ 08027  
Prior to January 1, 2003 EMD Chemicals Inc. was EM  
Industries, Inc. or EM Science, Division of EM Industries,  
Inc.

**Product Code** CX0134

**Effective Date** 8/20/2004

**For More Information Call**  
856-423-6300 Technical Service  
Monday-Friday: 8:00 AM - 5:00 PM

**In Case of Emergency Call**  
800-424-9300 CHEMTREC (USA)  
613-996-6666 CANUTEC (Canada)  
24 Hours/Day: 7 Days/Week

**Synonym** CALCIUM CHLORIDE  
**Material Uses** Analytical reagent.  
**Chemical Family** Inorganic salt.

## Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
CALCIUM CHLORIDE, DIHYDRATE	10035-04-8	100

## Section 3. Hazards Identification

**Physical State and Appearance** Solid. (Powder or flakes solid. Granular solid.)

**Emergency Overview** CAUTION!  
CAUSES EYE IRRITATION.  
MAY CAUSE SKIN IRRITATION.

**Routes of Entry** Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential Acute Health Effects

**Eyes** Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

**Skin** May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

**Inhalation** No known acute effects of this product resulting from inhalation.

**Ingestion** Irritating to mouth, throat and stomach. Ingestion can cause nausea and vomiting.

### Potential Chronic Health Effects

**Carcinogenic Effects** This material is not known to cause cancer in animals or humans.

**Additional information** See Toxicological Information (section 11)

**Medical Conditions Aggravated by Overexposure:** Repeated or prolonged exposure is not known to aggravate medical condition.

## Section 4. First Aid Measures

**Eye Contact** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**Skin Contact** In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Inhalation** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

## Section 5. Fire Fighting Measures

**Flammability of the Product** May be combustible at high temperature.

**Auto-ignition Temperature** Not available.

<b>Flash Points</b>	Not available.
<b>Flammable Limits</b>	Not available.
<b>Products of Combustion</b>	These products are carbon oxides (CO, CO <sub>2</sub> ), halogenated compounds. Some metallic oxides.
<b>Fire Hazards in Presence of Various Substances</b>	Not available.
<b>Explosion Hazards in Presence of Various Substances</b>	Risks of explosion of the product in presence of static discharge: No.
<b>Fire Fighting Media and Instructions</b>	Risks of explosion of the product in presence of mechanical impact: No. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
<b>Protective Clothing (Fire)</b>	Be sure to use an approved/certified respirator or equivalent.
<b>Special Remarks on Fire Hazards</b>	Not available.
<b>Special Remarks on Explosion Hazards</b>	Not available.

## Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
<b>Large Spill and Leak</b>	Use a shovel to put the material into a convenient waste disposal container.
<b>Spill Kit Information</b>	No specific spill kit required for this product.

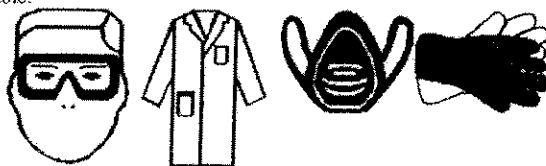
## Section 7. Handling and Storage

<b>Handling</b>	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not ingest. Do not breathe dust.
<b>Storage</b>	Keep container tightly closed. Keep container in a cool, well-ventilated area.

## Section 8. Exposure Controls/Personal Protection

<b>Engineering Controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
<b>Personal Protection</b>	<p><b>Eyes</b> Splash goggles.</p> <p><b>Body</b> Lab coat.</p> <p><b>Respiratory</b> Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.</p> <p><b>Hands</b> Gloves.</p> <p><b>Feet</b> Not applicable.</p>

**Protective Clothing (Pictograms)**



**Personal Protection in Case of a Large Spill** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

<b>Product Name</b>	<b>Exposure Limits</b>
CALCIUM CHLORIDE, DIHYDRATE	Not available.

## Section 9. Physical and Chemical Properties

<b>Odor</b>	Not available.
<b>Color</b>	White.
<b>Physical State and Appearance</b>	Solid. (Powder or flakes solid. Granular solid.)
<b>Molecular Weight</b>	147.02 g/mole
<b>Molecular Formula</b>	CaCl <sub>2</sub> · 2H <sub>2</sub> O
<b>pH</b>	Not available.
<b>Boiling/Condensation Point</b>	Not available.
<b>Melting/Freezing Point</b>	Not available.
<b>Specific Gravity</b>	Not available.
<b>Vapor Pressure</b>	Not available.
<b>Vapor Density</b>	Not available.
<b>Odor Threshold</b>	Not available.
<b>Evaporation Rate</b>	Not available.
<b>LogKow</b>	Not available.
<b>Solubility</b>	Soluble in water.

## Section 10. Stability and Reactivity

<b>Stability and Reactivity</b>	The product is stable.
<b>Conditions of Instability</b>	Not available.
<b>Incompatibility with Various Substances</b>	Reactive with metals, moisture.
<b>Rem/Incompatibility</b>	Not available.
<b>Hazardous Decomposition Products</b>	These products are halogenated compounds.
<b>Hazardous Polymerization</b>	Will not occur.

## Section 11. Toxicological Information

<b>RTECS Number:</b>	Calcium Chloride, Dihydrate	EV9810000
<b>Toxicity</b>	LD50: Not available. LC50: Not available.	
<b>Chronic Effects on Humans</b>	Not available.	
<b>Acute Effects on Humans</b>	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.	
<b>Synergetic Products (Toxicologically)</b>	Not available.	
<b>Irritancy</b>	Draize Test: Not available.	
<b>Sensitization</b>	Not available.	
<b>Carcinogenic Effects</b>	This material is not known to cause cancer in animals or humans.	
<b>Toxicity to Reproductive System</b>	Not available.	
<b>Teratogenic Effects</b>	Not available.	
<b>Mutagenic Effects</b>	Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS).	

## Section 12. Ecological Information

<b>Ecotoxicity</b>	Not available.
<b>BOD5 and COD</b>	Not available.
<b>Toxicity of the Products of Biodegradation</b>	The products of degradation are more toxic than the product itself.

## Section 13. Disposal Considerations

<b>EPA Waste Number</b>	Not available.
<b>Treatment</b>	Material does not have an EPA Waste Number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

## Section 14. Transport Information

<b>DOT Classification</b>	Proper Shipping Name: CHEMICALS, N.O.S.
	RQ: Not applicable.
<b>TDG Classification</b>	Not available.
<b>IMO/IMDG Classification</b>	Proper Shipping Name: CHEMICALS, N.O.S.
	RQ: Not applicable.
<b>ICAO/IATA Classification</b>	Not available.

## + Section 15. Regulatory Information

<b>U.S. Federal Regulations</b>	TSCA 8(b) inventory: Calcium Chloride, Dihydrate SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: Calcium Chloride, Dihydrate SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Calcium Chloride, Dihydrate: Immediate (Acute) Health Hazard SARA 313 toxic chemical notification and release reporting: No products were found. Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found. Clean air act (CAA) 112 accidental release prevention: No products were found. Clean air act (CAA) 112 regulated flammable substances: No products were found.
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<b>WHMIS (Canada)</b>	Clean air act (CAA) 112 regulated toxic substances: No products were found.
	Class D-2B: Material causing other toxic effects (TOXIC).
	CEPA DSL: CALCIUM CHLORIDE
	This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.
<b>International Regulations</b>	
<b>EINECS</b>	Not available.
<b>DSCL (EEC)</b>	R38- Irritating to skin.
	R41- Risk of serious damage to eyes.
<b>International Lists</b>	Australia (NICNAS): Calcium Chloride, Dihydrate
	Japan (MITI): Calcium Chloride, Dihydrate
	Philippines (RA6969): Calcium Chloride, Dihydrate
	China: No products were found.
<b>State Regulations</b>	No products were found.
	California prop. 65: No products were found.

## Section 16. Other Information

<b>National Fire Protection Association (U.S.A.)</b>	<b>0</b>	<b>Fire Hazard</b>
	<b>0 0</b>	<b>Reactivity</b>
		<b>Specific Hazard</b>

Changed Since Last Revision      +

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