MATERIAL SAFETY DATA SHEET

DD 2000

SECTION I – Product Identification

MANUFACTURER'S NAME:	Control Chemical (1989) Corporation
MANUFACTURER'S ADDRESS:	7016, 30th Street S.E. Calgary, Alberta, Canada T2C 1N9
EMERGENCY PHONE NUMBER:	(403) 720-7044
SUPPLIER IDENTIFIER:	
SUPPLIER'S ADDRESS:	
SUPPLIER'S EMERGENCY PHONE NUMBER:	
PRODUCT IDENTIFIER:	DD 2000
PRODUCT USE:	Drilling mud – Co-polymer of Acrylamide and Sodium Acrylate

SECTION II – Hazardous Ingredients of Materials

Chemical Identity	Concentration	CAS#/NA#/UN#	LD (50)	LC (50)

No regulated components.

This is not a WHMIS controlled product.

SECTION III – Physical Data for Product

PHYSICAL STATE:	Solid
ODOUR AND APPEARANCE:	Granular white solid. Faint odour
ODOUR THRESHOLD:	Not available
SPECIFIC GRAVITY:	0.80
VAPOR PRESSURE:	Very low
VAPOR DENSITY (Air = 1):	Not available
EVAPORATION RATE:	Not available
POILING POINT:	Decomposes
FREEZING POINT:	Not available
pH:	Not available
DENSITY (g/ml):	0.80
COEFFICIENT OF WATER / OIL DISTRIBUTION:	Not available

SECTION IV – Fire and Explosion Hazard of Product

CONDITIONS OF FLAMMABILITY:	Requires a source of ignition, the presence of air, and a temperature greater than the flash point.
MEANS OF EXTINCTION:	Use dry chemical, foam, or carbon dioxide. Water may cause excessive slipperiness
FLASHPOINT AND METHOD OF DETERMINATION:	No flash point
UPPER EXPLOSION LIMIT (% by Vol):	Not available
LOWER EXPLOSION LIMIT (% by Vol):	Not available

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AUTO-IGNITION TEMPERATURE:	Not available
FLAMMABILITY CLASSIFICATION:	Not available. Not a controlled product.
HAZARDOUS COMBUSTION PRODUCTS:	Not available
EXPLOSION DATA:	Not available
SENSITIVITY TO STATIC DISCHARGE:	Not available

SECTION V – Reactivity Data

CHEMICAL STABILITY:	Stable under normal conditions. Hazardous polymerization will not occur
INCOMPATIBLE MATERIALS:	Avoid strong oxidizing and reducing agents,
CONDITIONS OF REACTIVITY:	Avoid contamination with reactive substances
HAZARDOUS DECOMPOSITION PRODUCTS:	Not available

SECTION VI – Toxicological Properties of Product

ROUTES OF ENTRY:	
SKIN CONTACT:	No effects of exposure expected due to contact. Prolonged contact may cause skin irritation or dermatitis in some individuals.
SKIN ABSORBTION:	No known hazard due to skin absorption
EYE:	No effects of exposure expected with the exception of possible irritation
INHALATION:	May cause sneezing, slight irritation of nose and throat
INGESTION:	
ACUTE OVER EXPOSURE EFFECTS:	
CHRONIC OVER EXPOSURE EFFECTS:	Skin irritation or dermatitis may occur upon frequent or prolonged contact.
EXPOSURE LIMITS:	TWAEV = 0.03 mg/m^3 (skin) (Ont. Reg. 654/86).
IRRITANCY OF PRODUCT:	Eye: mild irritant
SENSITIZATION TO MATERIAL:	Repeated or prolonged contact may cause sensitization in some individuals
CARCINOGENICITY, REPRODUCTIVE EFFECTS:	
TERATOGENICITY, MUTAGENICITY:	Not available
TOXICOLOGICALLY SYNERGISTIC PRODUCTS:	Not available

SECTION VII – Preventive Measures

PERSONAL PROTECTIVE EQUIPMENT:	Chemical goggles, impervious gloves, and protective clothing as required to prevent contact. Use a mechanical-filter respirator as required to prevent exposure.
SPECIFIC ENGINEERING CONTROLS:	General ventilation with a good source of make-up air recommended for all indoor situations

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LEAK AND SPILL PROCEDURES:	Ventilate area. Wear rubber boots, gloves, and a self-contained breathing apparatus if ventilation is not adequate. Collect into waste container. Avoid raising dust. Wash spill site after material pickup. Water solutions are very slippery. May constitute a hazard following a spill
WASTE DISPOSAL:	Dispose of waste according to Federal, Provincial, and Municipal regulations.
HANDLING PROCEDURES AND EQUIPMENT:	Avoid prolonged or frequent contact when handling material. Do not inhale dust or breathe vapor. Wear a NIOSH approved mechanical-filter respirator, if adequate ventilation cannot be provided. Avoid skin or eye contact.
STORAGE REQUIREMENTS:	Keep container closed when not in use. Store in cool and dry location away from oxidizing and reducing agents.
SPECIAL SHIPPING INFORMATION:	None

SECTION VIII – First Aid Measures

SPECIFIC FIRST AID PROCEDURES:	Skin contact: wash exposed area with soap and water. If irritation or abnormalities persist, call a physician. Eye contact: Immediately flush eyes with water for 15 minutes and call a physician. Inhalation: remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. Ingestion: do not induce vomiting. If conscious, dilute by giving two glasses of water. Call a physician immediately.

SECTION X – Preparation Date of Material Safety Data Sheet

PREPARED BY:	Safety Committee
PHONE NUMBER OF PREPARER:	(403) 720-7044
DATE PREPARED:	January 02, 2003

The information contained herein is based on data believed to be reliable, but is presented without guarantee or warranty and Control Chemical (1989) Corporation disclaims any liability incurred from the use thereof.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder.

Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Do not insert any object (i.e.: screwdriver) into valve cap openings as this can damage the valve causing leakage.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Post "NO SMOKING" signs in use and storage areas. There should be no source for accidental ignition in areas where this product is being used or stored. Outside or detached storage is preferred.

For additional recommendations consult Compressed Gas Association Pamphlets P-1 and Safety Bulletin SB-2.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS: Use local exhaust and general ventilation systems to prevent build up of flammable concentrations. Small quantities can be handled in forced ventilation hoods. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code for details.

EYE/FACE PROTECTION: Safety goggles or glasses.

SKIN PROTECTION: Protective gloves made of plastic or rubber.

RESPIRATORY PROTECTION: For emergency release use a positive pressure NIOSH approved air-supplying respirator systems (SCBA or airline/escape bottle) using at a minimum Grade D air.

OTHER/GENERAL PROTECTION: Safety shoes.

PRODUCT NAME: PROPANE

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70°F	: 124	psia
Vapor density at STP (Air = 1)	: 1.56	
Evaporation point	: Not Available	
Boiling point	: -43.7	°F
	: -42.1	°C
Freezing point	: Not Available	
	: Not Available	
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H_20)	: Negligible	
Odor threshold	: Not Available	
Odor and appearance	: A colorless, odorless gas.	

10. Stability and Reactivity

STABILITY: Stable

INCOMPATIBLE MATERIALS/CONDITIONS: Incompatible with oxidizers. Avoid heat, sparks, and flame.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

11. Toxicological Information

SKIN AND EYE: Adverse effects are not expected.

INHALATION: Product is a simple asphyxiant. Maintain atmospheric oxygen at or above 19.5%.

OTHER: Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

12. Ecological Information

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

PRODUCT NAME: PROPANE

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Propane	Propane
HAZARD CLASS:	2.1	2.1
IDENTIFICATION NUMBER:	UN 1978	UN 1978
SHIPPING LABEL:	FLAMMABLE GAS	FLAMMABLE GAS

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION
SARA TITLE III - HAZARD CLASSES:
Acute Health Hazard
Fire Hazard
Sudden Release of Pressure Hazard

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:
This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

U.S. TSCA/Canadian DSL: All ingredients are listed on the U.S. Toxic Substances Control Act (TSCA) inventory or exempt from listing and on the Canadian Domestic Substance List (DSL).

California Proposition 65: This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

16. Other Information

NFPA HAZARD CODES		HMIS HAZARD CODES		RATINGS SYSTEM
Health:	2	Health:	0	0 = No Hazard
Flammability:	4	Flammability:	4	1 = Slight Hazard
Instability:	0	Reactivity:	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

Note: The Reactivity Hazard Rating is based on the 2nd Edition of the National Paint and Coatings Association's (NPCA's) Hazardous Materials Identification System (HMIS®). Hazard ratings were based on the best available information at the time of the review. Ratings will be reassigned in accordance with Compressed Gas Association (CGA) guidelines as published in the future edition of CGA Pamphlet P-19.

PRODUCT NAME: PROPANE

ACGIH	American Conference of Governmental Industrial Hygienists
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

GASOLINE PREMIUM UNLEADED SUL94
SUPERSUPREME 94 PREMIUM UNLEADED GASOLINE-MTBE
GASOLINE MIDGRADE UNLEADED MUL89 (P91/R87)
GASOLINE MIDGRADE UNLEADED MUL89 DCA (P92/R87)

Product Identification:	MSDS Number: 08522
Date of MSDS:	2003-03-19
Currency Note:	This MSDS was provided to CCOHS in electronic form on 2003-09-05

MANUFACTURER INFORMATION

Manufacturer:	IMPERIAL OIL (PRODUCTS DIVISION)
Address:	111 St Clair Avenue West Toronto, Ontario Canada M5W 1K3 TELEPHONE: 416-968-4111

MATERIAL SAFETY DATA

Date Prepared: March 19, 2003
Supersedes: November 06, 2002
MSDS Number: 08522

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1. PRODUCT INFORMATION

Product Identifier: UNLEADED GASOLINE
REGULAR UNLEADED
MIDGRADE UNLEADED
ESSO SUPER PREMIUM UNLEADED
PREMIUM UNLEADED
ESSO REGULAR UNLEADED
ESSO MIDGRADE UNLEADED
ESSO EXTRA MIDGRADE UNLEADED
ESSO PREMIUM UNLEADED
EXXON MIDGRADE UNLEADED
EXXON PREMIUM UNLEADED
INDOLENE GASOLINE
EXXON REGULAR UNLEADED
PREMIUM GASOLINE
ESSO EXTRA MIDGRADE GASOLINE
MIDGRADE GASOLINE
GASOLINE REGULAR UNLEADED
GASOLINE MIDGRADE UNLEADED MUL89 (DYED OR CLEAR)
GASOLINE REGULAR UNLEADED RUL87 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED PUL91 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED PUL92 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED SUL94
SUPERSUPREME 94 PREMIUM UNLEADED GASOLINE-MTBE
GASOLINE MIDGRADE UNLEADED MUL89 (P91/R87)
GASOLINE MIDGRADE UNLEADED MUL89 DCA (P92/R87)
REGULAR UNLEADED
MIDGRADE UNLEADED
ESSO SUPER PREMIUM UNLEADED
PREMIUM UNLEADED

ESSO REGULAR UNLEADED
ESSO MIDGRADE UNLEADED
ESSO EXTRA MIDGRADE UNLEADED
ESSO PREMIUM UNLEADED
EXXON MIDGRADE UNLEADED
EXXON PREMIUM UNLEADED
INDOLENE GASOLINE
EXXON REGULAR UNLEADED
PREMIUM GASOLINE
ESSO EXTRA MIDGRADE GASOLINE
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GASOLINE MIDGRADE UNLEADED MUL89 (DYED OR CLEAR)
GASOLINE REGULAR UNLEADED RUL87 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED PUL91 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED PUL92 (DYED OR CLEAR)
GASOLINE PREMIUM UNLEADED SUL94
SUPERSUPREME 94 PREMIUM UNLEADED GASOLINE-MTBE
GASOLINE MIDGRADE UNLEADED MUL89 (P91/R87)
GASOLINE MIDGRADE UNLEADED MUL89 DCA (P92/R87)

Application and Use:
Motor gasoline fuel, for use in internal combustion engines only

Product Description:

A mixture of aliphatic and aromatic hydrocarbons and additives.

REGULATORY CLASSIFICATION

WHMIS:
Class D, Division 2, Subdivision A: Very Toxic Material.
Class B, Division 2: Flammable Liquids.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT
All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TDG INFORMATION (RAIL/ROAD):

Shipping Name: Gasoline
Class: 3
Packing Group: II
PIN Number: UN1203
Marine Pollutant:P

Please be aware that other regulations may apply.

TELEPHONE NUMBERS MANUFACTURER/SUPPLIER:

Emergency 24 hr. (519) 339-2145 IMPERIAL OIL
Technical Info. (800) 268-3183 Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4441

2. REGULATED COMPONENTS

The following components are defined in accordance with sub-paragraph 13(a) (i) to (iv) or paragraph 14(a) of the Hazardous Products Act:

NAME % CAS #

Gasoline >99 V/V 8006-61-9 LD50>18ml/kg,orl,rat
LD50> 5ml/kg,skn,rbt

Methyl T-Butyl Ether 0-15 V/V 1634-04-4 LD50:3.9g/Kg,ing,rat
LD50:>10g/Kg,skn,rbt
LC50:142Mg/L,inh,rat

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 0.80 cSt at 20 deg C
Vapour Density: 3.2
Boiling Point: 35 to 210 deg C
Evaporation rate: >10 (1= n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -60 deg C less than
Odour Threshold: not available
Vapour Pressure: 76 kPa to 103 kPa at 38 deg C
Density: 0.73 g/cc at 15 deg C
Appearance/odour: Naturally occurring water white or pale yellow; may be dyed a variety of colours for tax or other purposes; petroleum odour.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour concentrations are irritating to the eyes, nose, throat and lungs; may cause headaches and dizziness; may be anesthetic and may cause other central nervous system effects.
Avoid breathing vapours or mists.

EYE CONTACT:

Slightly irritating, but will not injure eye tissue.

SKIN CONTACT:

Low toxicity.
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

INGESTION:

Low toxicity.
Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects (e.g. bronchopneumonia or pulmonary edema).

CHRONIC:

The International Agency for Research on Cancer (IARC) has evaluated gasoline and found it to be a possible human carcinogen.
Contains benzene. Human health studies (epidemiology) indicate that prolonged and/or repeated overexposures to benzene may cause damage to the blood producing system and serious blood disorders, including leukemia.
Animal tests suggest that prolonged and/or repeated overexposures to benzene may damage the embryo/fetus. The relationship of these animal studies to humans has not been fully established.
Contains n-hexane. Prolonged and/or repeated exposures may cause damage to the peripheral nervous system (e.g. fingers, feet, arms etc.).
Methyl Tertiary Butyl Ether (MTBE) was tested for carcinogenicity, neurotoxicity, chronic, reproductive and developmental toxicity. The NOEL for all endpoints evaluated in three animal species was 400 ppm or greater. An increase in kidney tumors/damage and liver tumors was observed in animals exposed to high concentrations of MTBE. Some embryo/fetal toxicity and birth defects were observed in the offspring of pregnant mice exposed to maternally toxic doses of MTBE, however the offspring of exposed pregnant rabbits were unaffected. The significance of the animal findings at high exposures are not believed to be directly related to potential human health hazards in the workplace.

ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products, the acute toxicity of this product is expected to be:
Oral : LD50 > 18 ml/kg (Rat)
Dermal : LD50 > 5 ml/kg (Rabbit)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer Recommends:
For gasoline, 300 mg/m3.
For Methyl-tert-Butyl Ether, 25 ppm (90 mg/m3) 8-hour TWA and 75 ppm (270 mg/m3) 15-minute STEL.

ACGIH recommends:
For Gasoline, ACGIH recommends a TWA of 300 ppm (890 mg/m3) and categorizes it as an animal carcinogen.
For n-Hexane (skin), 50 ppm (176 mg/m3).
For Benzene, ACGIH recommends a TWA of 0.5 ppm (1.6 mg/m3), (skin), and categorizes it as a confirmed human carcinogen.
For Methyl-tert-Butyl Ether, ACGIH recommends a TLV of 40 ppm (144 mg/m3) an categorizes it as an animal carcinogen.

Local regulated limits may vary.

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5. FIRST AID MEASURES

INHALATION:

In emergency situations use proper respiratory protection to immediately remove the affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

EYE CONTACT:

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available.
Remove severely contaminated clothing (including shoes) and launder before reuse.
If irritation persists, seek medical attention.

INGESTION:

DO NOT induce vomiting since it is important that no amount of the material should enter the lungs (aspiration). Keep at rest. Get prompt medical attention.

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6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves.
Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided.
Where concentrations in air may exceed the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation.

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.
Use explosion-proof ventilation equipment.

HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care.
In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.

Store and load at normal (up to 38 deg C) temperature and at atmospheric pressure.
Material will accumulate static charges which may cause a spark. Static