Spill Contingency Plan

Flashline Mars Arctic Research Station

1 February 2017

Contents

mission planned for July-September, 2017. The plan identifies key response personnel and their roles and responsibilities should there be a spill. The plan also identifies the equipment and other resources available to respond to a spill. It details response procedures that aim to minimize all potential health and safety hazards, damage to the environment, and clean-up efforts. The plan has been prepared to ensure quick and effective access to all required information for responding to a spill.

vi) Company Environmental Policy

Though the Mars Society does not have an explicit environmental policy, the Mars Society, as a group dedicated to scientific research in some of the most sensitive ecosystems on the planet, is dedicated to minimizing environmental impact in earthly ecosystems as we learn to explore other worlds.

vii) Project Description

The expedition team will travel to the Flashline Mars Arctic Research Station from 1 June to 1 September 2017 (dates approximate). The team will stay at this station and conduct research in the region by foot (within a radius of 5-10 km from the camp, i.e., walking distance). Permit applications have or will be submitted to the following agencies, for approval to conduct scientific research in this region:

- Nunavut Water Board
- Wildlife Management, Department of Environment, Nunavut
- Qikiqtani Inuit Association (for access to Inuit Owned Lands)

The research team will be transported to these research stations via a plane (or helicopter) on private charter

viii) Site Description

While at Haughton Crater on northern Devon Island we will stay in the Flashline Mars Arctic Research station (75° 25.882'N, 89° 49.408'W), a field station owned and operated by the Mars Society. We will conduct research within the station vicinity traversable on foot or by ATV.

ix) List of Hazardous Materials on Site

We will store the fuel at the Flashline Mars Arctic Research Station at a fuel cache right outside the station. Here we will store camp fuel (white gas) to fuel our small camp stoves, and gasoline for a small generator and the ATVS. The exact location for these fuel storage area is not known in advance. It will be established when we arrive at the site to set up the temporary camp. Table 1 lists the hazardous materials that will be stored on site, type of storage container, the normal and maximum storage quantities, and storage locations. Material safety data sheets (MSDS) for these fuels are included in Appendix 1.

Table 1: List of hazardous materials stored on site, type of storage container, the normal and maximum storage quantities, and storage locations.

Material	**Storage Container**	**Normally On-site**	**Maximum On-site**	**Storage Location and Uses**
White gas (naphtha) [Coleman camp fuel]	3.8 L (1 can)	19 L (5 cans)	38 L (10 cans)	Near kitchen tent, used to fuel camp stoves for cooking
Diesel Fuel	200 L barrel	4000 L (20 x 200 L barrels)	4000 L (20 x 200 L barrels)	Fuel cache close to Flashline Mars Arctic Research Station.
Gasoline	200 L barrel	2000 L (10 x 20 L barrels)	2000 L (10 x 20 L barrels)	Fuel cache close to Flashline Mars Arctic Research Station.

x) Existing preventative measures

Planning for an emergency situation is of utmost importance due to the nature of the hazardous materials stored on site, and the remoteness of the proposed sites.

White gas (naphtha) will be stored in the containers it comes in, and in fuel bottles for camp stoves. Gasoline will be stored in the original barrels on site.

The project leader and camp manager will monitor fuel storage daily to check for leaks and other damage to the fuel containers.

Grey water from cooking (this will be minimal) will be dumped at least 100 m from all water sources.

xi) Additional copies

Hard copies of this spill contingency plan will be kept on-site, in a binder that contains hard copies of research permits and licences. In the field, digital copies will also be kept on laptop computers and tablet devices. Copies can be obtained by contacting Shannon Rupert (contact details above).

	4) All cans punctured and leaking at once (very unlikely).		water sources.
Gasoline	1) Leak while transferring fuel to ATVS 2) Minor leaking can in or outside fuel storage area. 3) Large puncture, fast leaking can in/outside fuel storage area. 4) All cans punctured and leaking at once (very unlikely).	Likely under 200 L / 1 barrel (max 2000 L / 10 barrels)	Fuel will be stored on flat ground, and discharge would be localized to the fuel storage area. There may be potential for long distance underground dispersal into adjacent water sources.
Diesel	1) Leak while transferring fuel to generators. 2) Minor leaking can in or outside fuel storage area. 3) Large puncture, fast leaking can in/outside fuel storage area. 4) All cans punctured and leaking at once (very unlikely).	Likely under 200 L / 1 barrel (max 4000 L / 20 barrels)	Fuel will be stored on flat ground, and discharge would be localized to the fuel storage area. There may be potential for long distance underground dispersal into adjacent water sources.

ii) Potential environmental impacts

White gas / naphtha, Diesel, and Gasoline
Environmental impacts: These fuels may be harmful to wildlife and the surrounding environment. It is not readily biodegradable. These fuels are volatile and flammable.

Worst case scenario: All cylinders were punctured or failed simultaneously and contents leaked into the surrounding environment and ignited leading to an explosion. This could cause serious environmental impacts in the immediate surroundings.

iii) Procedures

A. Procedures for initial actions

- Ensure safety of all personnel.
- Assess spill hazards and risks.
- Remove all sources of ignition.
- Stop the spill if safely possible e.g. shut of pump, replace cap, tip drum upward, patch leaking hole.
- No matter what the volume is, notify camp manager immediately.
- Contain the spill – use contents of spill kits to place sorbent materials on the spill, or use shovel to dig dike to contain spill. Methods will vary depending on the nature of the spill. See Section C for more details.

B. Spill reporting procedures

which will then provide containment layer for the spilled fuel. Fuel can then be recovered using a pump or sorbent materials.

2) Containment of Spills on Water

Spills on water such as rivers, streams or lakes are the most serious types of spills as they can negatively impact water quality and aquatic life. All measures need to be undertaken to contain spills on open water.

Weirs

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water can still flow under the weir. Spilled fuel will float on the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels or plastic bags.

Barriers

In some situations barriers made of netting or fence material can be installed across a stream, and sorbent materials placed at the base to absorb spilled fuel. Sorbents will need to be replaced as soon as they are saturated. Water will be allowed to flow through. This is very similar to the weir option discussed above. Note that in some cases, it may be appropriate to burn fuel or to let volatile fuels such as gasoline evaporate after containment on the water surface. This should only be undertaken in consultation with, and after approval from the Aboriginal Affairs and Northern Development Canada (AANDC) or lead agency Inspector.

D. Procedures for transferring, storing, and managing spill related wastes

In most cases, spill clean-ups are initiated at the far end of the spill and contained moving toward the centre of the spill. Sorbent socks and pads are generally used for small spill clean-up. Hand tools – whatever is available in the field camp (pots and pans, plant diggers, etc.) – can be effective for small spills.

Used sorbent materials are to be placed in plastic bags for future disposal. All materials mentioned in this section are available in the spill kits located at the research camp. Following clean up, any tools or equipment used will be properly washed and decontaminated, or replaced if this is not possible. For most of the containment procedures outlined in Section C, spilled petroleum products and materials used for containment will be placed into empty waste fuel containers and sealed for proper disposal at an approved disposal facility.

E. Procedures for restoring affected areas

Once a spill of reportable size has been contained, the Museum research team will consult with the AANDC or lead agency Inspector assigned to the file to determine the level of clean-up required. The Inspector may require a site specific study to ensure appropriate clean up levels are met. Criteria that may be considered include natural biodegradation of oil, replacement of soil and re-vegetation

Appendix 1 – Material Safety Data Sheets

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 element

Hazard pictograms :

Signal word : Danger

Hazard statements :
H224 Extremely flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary statements :
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a

	Confirmed animal carcinogen with unknown relevance to humans	
	Ethanol	64-17-5
	Gasoline, natural	8006-61-9
OSHA	OSHA specifically regulated carcinogen	
	Benzene	71-43-2
NTP	Known to be human carcinogen	
	Benzene	71-43-2

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure 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.

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.

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
		TWA	300 ppm 900 mg/m3	OSHA P0
		STEL	500 ppm 1,500 mg/m3	OSHA P0
		TWA	500 ppm 2,000 mg/m3	OSHA Z-1
toluene	108-88-3	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m3	NIOSH REL
		ST	150 ppm 560 mg/m3	NIOSH REL
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm	OSHA Z-2
		TWA	100 ppm 375 mg/m3	OSHA P0
		STEL	150 ppm 560 mg/m3	OSHA P0
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	OSHA Z-2
		PEL	1 ppm	OSHA CARC
		STEL	5 ppm	OSHA CARC
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

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)
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)		

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

Components:

toluene:

Result: Moderate skin irritant

benzene:

Result: Moderate skin irritant

ethanol:

Result: Skin irritation

Serious eye damage/eye irritation

Product:

Remarks: No data available

Components:

toluene:

Result: Mild eye irritation

benzene:

Result: Moderate eye irritation

ethanol:

Result: Eye irritation

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Contaminated packaging : Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

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

IMDG-Code

UN number	: 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

Not applicable for product as supplied.

49 CFR

UN/ID/NA number	: 1203
Proper shipping name	: Gasoline
Class	: 3
Packing group	: II
Labels	: 3
ERG Code	: 128
Marine pollutant	: no

Special precautions for user

Not applicable

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

Material Safety Data Sheet

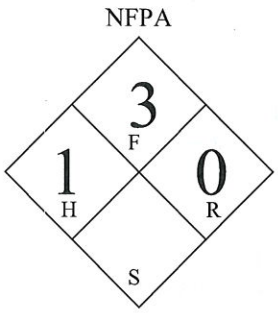
Product: Coleman® Camp Fuel

1. Chemical Product and Company Identification

Trade Name of this Product: Coleman® Camp Fuel

Manufacturer
HOC Industries, Inc.
3511 N. Ohio
Wichita, KS 67219

Contact Name
Don Poschen
Phone Number
(316) 838-4663
Emergency Phone
(800) 633-8253



2. Composition and Information on Ingredients

Ingredient	CAS Number	Weight %	ACGIH TWA	ACGIH STEL
Light Hydrotreated Distillate	68410-97-9	100	300 ppm	500 ppm

3. Hazard Identification

******EMERGENCY OVERVIEW******
* WARNING: Flammable Liquid and Vapor. The Flash Point is <0 degrees F.
* This product is a clear, green, light hydrocarbon liquid.
* It has a solvent petroleum odor. The product floats on water.
* When burned the product produces carbon monoxide and other asphyxiants during combustion.
* Harmful if inhaled and may cause delayed lung injury.
* Aspiration hazard if swallowed - can enter lungs and cause damage.
* Keep away from heat, sparks, and flame.

INGESTION
CALL PHYSICIAN IMMEDIATELY. Do not induce vomiting except at the instruction of a physician. Never give anything by mouth to an unconscious person.

INHALATION
Remove person to fresh air and consult a physician. If breathing is difficult, give oxygen. If not breathing give artificial respiration.

5. Fire Fighting Measures

FLAMMABLE PROPERTIES
FLASH POINT: <0°F (<-18°C) Tag Closed Cup
AUTOIGNITION: not available
FLAMMABILITY CLASS: IB
LOWER EXPLOSIVE LIMIT (%): not available
UPPER EXPLOSIVE LIMIT (%): not available

FIRE AND EXPLOSION HAZARDS
Can form flammable mixtures with air and flash at room temperature or upon slight heat application. Vapors are heavier than air and may travel considerable distance. Explosion hazard in confined spaces if exposed to ignition source. Mists or sprays may be flammable below fuel's normal flash point. Keep away from heat or open flame.

EXTINGUISHING MEDIA
Dry Chemical, carbon dioxide, and foam. NOTE: Water, fog and foam may cause frothing and spattering. Water stream may spread fire.

FIRE FIGHTING INSTRUCTIONS
Use water to cool containers exposed to flames. Do not enter enclosed or a confined work space without proper protective equipment. Fire fighting personnel should wear respiratory protection (positive pressure if available). If leak or spill has not ignited, use water spray to disperse the vapors.

Products of combustion include fumes, smoke and carbon monoxide.

6. Accidental Release Measures

Evacuate area and shut off ignition source. Contain spill and keep from entering waterways or sewers. Use personal protective equipment. Advise EPA or state agency if required. Absorb with inert material. Shovel or sweep spill and place in closed container for disposal.

7. Handling and Storage

HANDLING: Keep product away from high energy ignition sources, heat, sparks, pilot lights,
static electricity, and open flame. Avoid contact with skin. Avoid inhalation of vapors or mists. Use in well ventilated area away from all ignition sources. See Section 8 for additional personal protection advice when handling this product.

STORAGE: Store in a cool area. Store as OSHA Class IB flammable liquid

SPECIAL PRECAUTIONS: To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Electrical equipment and fittings must comply with local fire prevention regulations for this class of product. Use the correct grounding procedures. Refer to national, state, or local regulations covering safety at petroleum handling and storage areas for this product.

9. Physical and Chemical Properties

APPEARANCE
Clear, green liquid.

ODOR
Petroleum Naphtha.

ODOR THRESHOLD
N.D.

BASIC PHYSICAL PROPERTIES
PHYSICAL STATE: Liquid
BOILING POINT: IBP >100°F (>38°C)
MELTING POINT: N/A
VAPOR PRESSURE: (Reid) 5.3 psi @ 100°F
VAPOR DENSITY (AIR=1): 3
SPECIFIC GRAVITY @ 60°F (water=1): 0.7
MOLECULAR WEIGHT: not available
SOLUBILITY (H_2O): negligible
PERCENT VOLATILES: 100%
VISCOSITY: not available

Physical data may vary slightly to meet specifications.

10. Stability and Reactivity

STABILITY: Stable.

CONDITIONS TO AVOID
Sources of ignition.

INCOMPATIBLE MATERIALS
Strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS
Incomplete combustion may produce fumes, smoke, carbon monoxide and other asphyxiants.
HAZARDOUS POLYMERIZATION: will not occur.

11. Toxicological Information

Skin effects
May cause irritation or dermatitis with prolonged and repeated contact.

Oral effects
Tests on similar materials indicate an order of acute oral toxicity.

Inhalation effects
Acute toxicity expected on inhalation.

Medical conditions aggravated by overexposure
Dermatitis and sensitive skin. This product is not listed as carcinogenic or a potential carcinogen by the national toxicology program, by the I.A.R.C. monographs or by OSHA. Nevertheless, good industrial hygienic practices are recommended.

STATE LIST DATA - This product contains chemicals which are on the following state lists (continued):
New Jersey RTK Hazardous Substance
New York List of Hazardous Substances
Washington Air Contaminant

16. Other Information

DATE MADE: 2/12/04
DATE REVISED: 6/19/07

The information contained herein is based upon data available to us and reflects our best professional judgment. However, no warranty of merchantability, fitness for any use, or other warranty is expressed or implied regarding the accuracy of such data, the results to be obtained from the use thereof, or that any such use does not infringe any patent. Since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration

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. 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

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. Vapours 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

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

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,

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

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

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

WHMIS Classification : B3: Combustible Liquid
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: Toxic Material Causing Other Toxic Effects

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

Appendix 2 – NU NT Spill Report Form

(forms also available at http://env.gov.nu.ca/node/66 [accessed 15 March 2012])