APPENDIX 5: FUELS AND LUBRICANTS MSDS SHEETS

MATERIAL SAFETY DATA SHEET

Esso

Date Prepared: February 24, 1994
Supersedes: April 8, 1993
MSDS Number: 020270

1. PRODUCT INFORMATION

Product Identifier: VARSOL DX 3139 SOLVENT

Application and Use:
Solvent, diluent, chemical feedstock, or fuel

Product Description:
Aliphatic hydrocarbon

CAS number: 8052-41-3

REGULATORY CLASSIFICATION

WHMIS Information:
Class B, Division 3: Combustible Liquids

TDG Information (Rail/Road):
PIN Number: UN 1256
Shipping Name: Naphtha, solvent
Packing Group: III
Primary TDG: Class 3.3

Canadian Environmental Protection Act (CEPA):
All components of this product are either on the Domestic Substances List (DSL) or exempt.

EMERGENCY TELEPHONE NUMBER

Health/Transportation

24 Hour Service (519) 339-2145

MANUFACTURER/SUPPLIER

IMPERIAL OIL
Products Division
111 ST CLAIR AVENUE W
Toronto, Ontario
M5W 1K3
(416) 968-4111

2. REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 1)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	%	CAS	
Stoddard solvent	100	8052-41-3	LD50: > 5 g/kg orl rat LC50: > 5 g/m3 rat

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Spec. Gravity: 0.78 at 15.5 deg C
Vap. Pres.: 1.3 kPa at 38 deg C
Solubility in Water: Negligible
Boiling Point: 157 to 200 deg C
Freezing/Melting Point.: < -55 deg C
Viscosity: 1.22 cST at 25 deg C
Vapour Density (air=1): 5
Evaporation Rate: 0.12
% Volatile: 100
Molecular Wt: 144
Odour: Mild petroleum odour
Appearance: Clear, colourless liquid

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconciousness, and other central nervous system effects, including death.

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:

Minimal toxicity
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Stoddard Solvent, 100 ppm (525 mg/m3)

MANUFACTURER RECOMMENDS:

200 ppm based on composition.

Local regulated limits may vary.

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.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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.

HANDLING, STORAGE AND SHIPPING:

Keep container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
DO NOT handle or store near an open flame, heat, or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
DO NOT pressurize, cut, heat, or weld containers.
Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

SPILL CONTROL AND DISPOSAL:

Consult an expert on the disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: May 18, 1995
Supersedes: April 13, 1994
MSDS Number: 000115

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: LIGHT DISTILLATE (DYED OR CLEAR)
DIESEL ARCTIC (DYED OR CLEAR)
DIESEL DEW (DYED OR CLEAR)
DIESEL FUEL LIGHT (DYED OR CLEAR)
DIESEL LIGHT (LOW SULFUR)
DIESEL 60 (DYED OR CLEAR)
ESSO DIESEL ARCTIC (DYED OR CLEAR)
ESSO DIESEL DEW
ESSO DIESEL FUEL LIGHT
ESSO DIESEL FUEL LIGHT (DYED OR CLEAR)
ESSO DIESEL FUEL OIL 50 (DYED OR CLEAR)
ESSO DIESEL FUEL 60 (DYED OR CLEAR)
ESSO DIESEL 60 (DYED OR CLEAR)
ESSO RAILROAD DIESEL 50 (DYED OR CLEAR)
ESSO STOVE OIL (DYED OR CLEAR)
ESSO STOVE QUALITY COMMERCIAL FUEL
ESSO STOVE QUALITY FURNACE FUEL
ESSO STOVE QUALITY HEATING OIL (DYED OR CLEAR)
STOVE OIL
STOVE OIL (DYED OR CLEAR)
STOVE QUALITY FURNACE FUEL
STOVE QUALITY HEATING OIL
STOVE QUALITY HEATING OIL (DYED OR CLEAR)

Application and Use:
Clean burning, low sulphur, low temperature operability type light distillate used in liquid fuel burning equipment for heating and/or as a fuel for use in an internal combustion engine of the compression type

Product Description:

A complex mixture of aliphatic, olefinic, naphthenic and aromatic hydrocarbons.

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3: Combustible Liquids.
Class D, Division 2, Subdivision B: Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Fuel oil
Class: Flammable liquid 3.3 — Packing Group: III
PIN Number: UN1202 — Guide Number: 123

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr: (519) 339-2145
Technical Info: (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Kerosene, straight run	0-100 v/v	8008-20-6	LD50: > 5g/kg,oral,rat
Light Atmospheric Gas Oil	0-100 v/v	64741-44-2	
Light Hydrocracked Distillate	0-100 v/v	64741-77-1	

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 1.30 cSt at 40 deg C to 2.40 cSt at 40 deg C
Vapour Density: 4
Boiling Point: 180 to 320 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -39 deg C D97
Odour Threshold: not available
Vapour Pressure: 4 kPa at 38 deg C
Density: 0.82 g/cc at 15 deg C
Appearance/odour: White or pale yellow liquid, petroleum odour

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C)
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:

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

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:

Lifetime skin painting tests indicate that materials of similar composition have produced skin cancer in experimental animals. The relationship of these results to humans has not been fully established.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun If irritation persists, seek medical attention.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: April 13, 1994
Supersedes: July 18, 1991
MSDS Number: 000116

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: MIDDLE DISTILLATE (DYED OR CLEAR)
COMMERCIAL FUEL
COMMERCIAL MARINE DIESEL FUEL
DIESEL FUEL (DYED OR CLEAR)
DIESEL FUEL FOR EPC REFUELLING
DIESEL QUALITY FURNACE FUEL (DYED OR CLEAR)
DIESEL QUALITY HEATING OIL (DYED OR CLEAR)
ESSO COMMERCIAL FUEL (DYED OR CLEAR)
ESSO DIESEL FUEL
ESSO DIESEL FUEL LS
ESSO DIESEL QUALITY COMMERCIAL FUEL (DYED OR CLEAR)
ESSO DIESEL QUALITY FURNACE FUEL
ESSO DIESEL QUALITY HEATING OIL
ESSO FURNACE FUEL (DYED OR CLEAR)
ESSO FURNACE OIL (DYED OR CLEAR)
ESSO HEATING OIL (DYED OR CLEAR)
ESSO MARINE DIESEL FUEL (DYED OR CLEAR)
ESSO MARINE GAS OIL (DYED OR CLEAR)
ESSO RAILROAD DIESEL (DYED OR CLEAR)
ESSO RAILROAD DIESEL FUEL
ESSO RAILROAD DIESEL FUEL #3 (DYED OR CLEAR)
ESSO TOBACCO CURING OIL
ESSO 3-GP-11M
ESSO 3-GP-15M
FUEL OIL 75
FUEL OIL 76
FURNACE FUEL (DYED OR CLEAR)
FURNACE FUEL OIL (DYED OR CLEAR)
HEATING OIL (DYED OR CLEAR)
IRVING LOW SULFUR DIESEL FUEL
LOW SULFUR DIESEL
LOW SULFUR DIESEL (EXPORT (DYED)
MARINE DIESEL (DYED OR CLEAR)
MARINE DIESEL - POUR DEPRESSED (DYED OR CLEAR)
MARINE GAS OIL (DYED OR CLEAR)
NAVAL FUEL OIL 3-GP-11M (DYED)
NO.2 FUEL OIL
3-GP-11M
3-GP-15M

Application and Use:
Seasonally adjusted middle distillate for use in liquid fuel burning equipment for heating and/or as a fuel for use in an internal combustion engine of the compression ignition type.

Product Description:

A complex mixture of aliphatic, olefinic, naphthenic and aromatic hydrocarbons.

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision B: Toxic Material
Class B, Division 3: Combustible Liquids

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Fuel oil
Class: Flammable liquid 3.3 Packing Group: III
PIN Number: UN1202 Guide Number: 123

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr (519) 339-2145
Technical Info (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #
Fuel Oil No 2	> 99.9 v/v	68476-30-2

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 1.30 cSt at 40 deg C
to 11.00 cSt at 40 deg C
Vapour Density: 4
Boiling Point: 150 to 370 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: not available
Odour Threshold: not available
Vapour Pressure: 4 kPa at 38 deg C
Density: 0.85 g/cc at 15 deg C
Appearance/odour: White or pale yellow liquid, petroleum odour

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
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.
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
Avoid breathing vapours or mists.

EYE CONTACT:

Slightly irritating, but will not injure eye tissue.

SKIN CONTACT:

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

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:

Lifetime skin painting tests indicate that materials of similar composition have produced skin cancer in experimental animals. The relationship of these results to humans has not been fully established.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
100 ppm based on composition.

Local regulated limits may vary.

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.

Please turn over

Esso Imperial Oil

MATERIAL SAFETY DATA SHEET

Date Prepared: October 31, 1995
Supersedes: April 4, 1994
MSDS Number: 360040

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ESSO HD ANTIFREEZE (GM6038M)

Application and Use:
Engine antifreeze coolant

Product Description:

A glycol type antifreeze

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Compounds, Anti-Freeze
Class: Not regulated — Packing Group: Not regulated
PIN Number: Not regulated — Guide Number: 134

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Monoethylene Glycol	80-90 v/v	107-21-1	LD50:8.5g/kg,orl,rat LD50:19g/kg,skn,rbt

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: > 19.10 cSt at 20 deg C
Vapour Density: not available
Boiling Point: 166 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: 100.00%
Freezing/Pour Point: not available
pH: 11.0
Odour Threshold: not available
Vapour Pressure: < 1 kPa at 38 deg C
Density: 1.11 g/cc at 16 deg C
Appearance/odour: A green coloured liquid, with a sweet smell.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
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.

INGESTION:

Moderately toxic

CHRONIC:

Contains ethylene glycol (EG). Repeated high dose exposure to EG by ingestion (animal studies) has caused kidney damage, brain damage, degeneration of the liver, changes in blood chemistry and circulating blood cells. Prolonged and/or repeated exposures may cause similar effects in humans.
Ethylene glycol has been shown to cause developmental and reproductive effects at high dose levels in laboratory animals. The relationship of these results to humans has not been fully established.

This product contains Diethylene Glycol (DEG). Prolonged and repeated exposure through ingestion of DEG may result in toxic effects on the kidney.

ACUTE TOXICITY DATA:

Based on animal and human testing data from similar materials and products, the acute toxicity of this product is expected to be:
Oral: LD50 > 1300 mg/kg (human)
LD50 > 8500 mg/kg (rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For diethylene glycol, the Supplier recommends an exposure limit of 10 mg/m3 (aerosol) and 50 ppm (total), based upon the AIHA WEEL.

ACGIH recommends:
For Ethylene Glycol aerosol, a ceiling limit of 39.4 ppm (100 mg/m3).

Local regulated limits may vary.

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:

If swallowed, induce vomiting only if victim is conscious.
Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

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.

Please turn over

MATERIAL SAFETY DATA SHEET

Esso

Date Prepared: April 13, 1994
Supersedes: March 9, 1994
MSDS Number: 000107

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: AVIATION GASOLINE
AVIATION GASOLINE 100LL
ESSO AVIATION GASOLINE 100LL

Application and Use
Aviation fuel for Piston derived aircraft engines

FOR AVIATION USE 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.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Gasoline
Class: Flammable Liquid 3.1 Packing Group: II
PIN Number: UN1203 Guide Number: 119

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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
Tetraethyl Lead	< 1 v/v	78-00-2	LD50 < .02g/Kg,ing,rat LD50 < .02g/Kg,skn,rat LC50:6,ppm,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: 25 to 170 deg C
Evaporation rate: > 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -58 deg C less than
Odour Threshold: not available
Vapour Pressure: 38 kPa to 48 kPa at 38 deg C
Density: 0.70 g/cc at 15 deg C
Appearance/odour: Blue liquid , 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.
Contains small amounts of tetraalkyl lead, benzene and n-hexane.
Benzene may cause blood and/or blood producing system disorder and/or damage; n-hexane may cause peripheral (e.g. fingers, feet, arms, etc.) nerve damage. In high concentrations gasoline may cause central nervous system disorders.

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.)
Contains organic lead. Prolonged and/or repeated exposures may cause damage to the central nervous system, brain injury resulting in behavioral changes, and reproductive system effects.

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 Benzene (skin) 1) 5 ppm TWA for 8 hrs/day 2) 3 ppm TWA for 12 hrs/day 3) 250 ppm minutes for 5 to 30 minutes.

ACGIH recommends:
For Gasoline, 300 ppm (900 mg/m3)
For n-Hexane, 50 ppm (180 mg/m3).
For Tetraethyl Lead, (skin), 0.1 mg/m3.
For Benzene, the ACGIH recommends a TLV of 10 ppm (30 mg/m3), and describes it as a substance of suspect carcinogenic potential in man.

Local regulated limits may vary.

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.

Please turn over

MATERIAL SAFETY DATA SHEET

ESSO

ate Prepared: May 03, 1994
upersedes: August 9, 1989
MSDS Number: 229738

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: EASYMIX

Application and Use:
Premium quality low ash engine oil for use in most air-cooled, two-cycle engines

Product Description:

A mixture of refined petroleum lubricant basestocks and petroleum solvent plus additives

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3: Combustible Liquids.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Petroleum Oil
Class: Flammable Liquid 3.3 Packing Group: III
PIN Number: UN1270 Guide Number: 109

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #
Light Hydrotreated Distillate	10-30 v/v	8052-41-3

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 33.40 cSt at 40 deg C
Vapour Density: not available
Boiling Point: 150 to 615 deg C
Evaporation rate: < 1 (1= n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -39 deg C D97
Odour Threshold: not available
Vapour Pressure: 4.2 kPa at 20 deg C
Density: 0.90 g/cc at 15 deg C
Appearance/odour: Dark blue oil, petroleum odour.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
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.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

ACGIH recommends:
For oil mists, 5 mg/m3.
For Stoddard Solvent, 100 ppm (525 mg/m3).

Local regulated limits may vary.

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal conditions is usually not a problem. If overexposed to oil mist, remove from further 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:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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.

HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.
Do not handle or store near an open flame, sources of heat, or sources of ignition.
Empty containers may contain product residue. Do not pressurize, cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

Please turn over

MATERIAL SAFETY DATA SHEET

ate Prepared May 03, 1994
upersedes April 06, 1993
MSDS Number 229760

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ESSO SNOWMOBILE OIL

Application and Use:
Premium quality low ash engine oil for use in air and liquid-cooled, premixed and oil injected, snowmobile engines

Product Description:

A mixture of refined petroleum lubricant basestocks and petroleum solvent plus additives

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3: Combustible Liquids

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Petroleum Oil
Class: Flammable Liquid 3.3 Packing Group: III
PIN Number: UN1270 Guide Number: 109

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #
Light Hydrotreated Distillate	10-30 v/v	8052-41-3

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 21.40 cSt at 40 deg C
Vapour Density: not available
Boiling Point: 150 to 615 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -45 deg C D97
Odour Threshold: not available
Vapour Pressure: 4.2 kPa at 20 deg C
Density: 0.88 g/cc at 15 deg C
Appearance/odour: Dark blue oil, petroleum odour.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
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.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

ACGIH recommends:
For oil mists, 5 mg/m3.
For Stoddard Solvent, 100 ppm (525 mg/m3).

Local regulated limits may vary.

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal conditions is usually not a problem. If overexposed to oil mist, remove from further 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:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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.

HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
In keeping with good personal hygiene practices, wash hands thoroughly after handling the material.
Do not handle or store near an open flame, sources of heat, or sources of ignition.
Do not breathe gas, vapour or mist.
Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared May 18, 1995
Supersedes April 07, 1994
MSDS Number 000112

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: HIGH FLASH TYPE TURBINE AVIATION FUEL
ESSO JET 5
ESSO TURBO FUEL 5
JET 5
TURBO FUEL 5
3GP-24M

Application and Use
High flash point aviation turbine fuel for on board Naval vessels

Product Description

A mixture of aliphatic and aromatic hydrocarbons and additives

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3: Combustible Liquids.
Class D, Division 2, Subdivision A: Very Toxic Material.
Class D, Division 2, Subdivision B: Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Fuel, Aviation, Turbine engine
Class: Flammable liquid 3.3 Packing Group: III
PIN Number UN1863 Guide Number: 121

Please be aware that other regulations may apply

TELEPHONE NUMBERS

Emergency 24 hr (519) 339-2145
Technical Info (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Kerosene, straight run	> 99 v/v	8008-20-6	LD50: > 5g/kg,oral,rat
Diethylene Glycol Monomethyl Ether	0-0.2 v/v	111-77-3	LD50:9.2g/kg,orl,rat LD50:0.6g/kg,skn,rbt

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 8.00 cSt at -20 deg C
Vapour Density: 4
Boiling Point: 140 to 290 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -46 deg C D97
Odour Threshold: not available
Vapour Pressure: 4 kPa at 38 deg C
Density: 0.82 g/cc at 15 deg C
Appearance/odour: White or pale yellow liquid, petroleum odour

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Low toxicity
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:

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

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:

Lifetime skin painting tests indicate that materials of similar composition have produced skin cancer in experimental animals. The relationship of these results to humans has not been fully established.

Contains diethylene glycol monomethyl ether (DIEGME). Prolonged and repeated exposure through inhalation or extensive skin contact with DIEGME may result in toxic effects on the kidneys, the reproductive system and/or the embryo/fetus.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. 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.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves

Where skin and eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear long sleeves and safety glasses with side shields.
Where concentrations in air may exceed the occupational exposure limits

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: March 29, 1995
Supersedes: May 5, 1994
MSDS Number: 027020

1. PRODUCT INFORMATION

Product Identifier: IMPERIAL XYLENE

Application and Use:
Solvent, diluent, chemical feedstock, or fuel

Product Description:
Aromatic hydrocarbon

CAS number: 1330-20-7

REGULATORY CLASSIFICATION

WHMIS Information:
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision B: Toxic Material

TDG Information (Rail/Road):
PIN Number: UN 1993
Shipping Name: Flammable liquids, n.o.s.
Hazardous Substance: (Ethyl Benzene, Xylenes)
Packing Group: III
Primary TDG Class: 3
Subsidiary TDG Class: 9.2

Canadian Environmental Protection Act (CEPA):
All components of this product are either on the Domestic Substances List (DSL) or exempt.

EMERGENCY TELEPHONE NUMBER	MANUFACTURER/SUPPLIER
Health/Transportation	IMPERIAL OIL Products Division
24 Hour Service (519) 339-2145	111 ST CLAIR AVENUE W. Toronto, Ontario M5W 1K3 (416) 968-4111

2. REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	% (V/V)	CAS	
Xylenes	60-100	1330-20-7	LD50: 4 g/kg orl rat LC50: 6,500 ppm rat
Ethyl benzene	10-30	100-41-4	LD50: 3.5 g/kg ing rat 17.8 g/kg skn rbt

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Spec. Gravity: 0.87 at 15.5 deg C
Vap. Pres.: 1.893 kPa at 38 deg C Approximate
Solubility in Water: 0.02% at 25 deg C
Boiling Point: 139 to 141 deg C
Freezing/Melting Point.: -35 deg C
Viscosity: 0.69 cST at 25 deg C Approximate
Vapour Density (air=1): 3.7
Evaporation Rate: 0.8 Approximate
% Volatile: 100
Molecular Wt: 106
Odour: Aromatic odor
Appearance: Clear, colorless liquid

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconciousness, and other central nervous system effects, including death.
Negligible hazard at normal temperatures (up to 38 deg C).

EYE CONTACT:

Irritating, but will not injure eye tissue

SKIN CONTACT:

Frequent or prolonged contact may irritate the skin.
Low toxicity
Brief contact with the liquid will not result in significant irritation unless evaporation is prevented
Skin contact may aggravate an existing dermatitis condition

INGESTION:

Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.
Low toxicity.

SPECIAL HEALTH PRECAUTIONS:

Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Xylene, 100 ppm (434 mg/m3).
For Ethyl Benzene, 100 ppm (434 mg/m3).

Local regulated limits may vary.

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.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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 container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials. DO NOT handle or store near an open flame, heat, or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.

Please turn over

MATERIAL SAFETY DATA SHEET

Esso

Date Prepared: February 24, 1994
Supersedes: July 18, 1991
MSDS Number: 028010

1. PRODUCT INFORMATION

Product Identifier: ESSO VARSOL

Application and Use:
Solvent, diluent, chemical feedstock, or fuel

Product Description:
Aliphatic hydrocarbon.

CAS number: 8052-41-3

REGULATORY CLASSIFICATION

WHMIS Information:
Class B, Division 3, Combustible Liquids

TDG Information (Rail/Road):
PIN Number: UN 1256
Shipping Name: Naphtha, solvent
Packing Group: III
Primary TDG: Class 3.3

Canadian Environmental Protection Act (CEPA):
All components of this product are either on the Domestic Substances List (DSL) or exempt.

EMERGENCY TELEPHONE NUMBER

Health/Transportation

24 Hour Service (519) 339-2145

MANUFACTURER/SUPPLIER

IMPERIAL OIL
Products Division
111 ST CLAIR AVENUE W.
Toronto, Ontario
M5W 1K3
(416) 968-4111

2. REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 14(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	%	CAS	
Stoddard solvent	100	8052-41-3	LD50: > 5 g/kg orl rat LC50: > 5 g/m3 rat

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Spec. Gravity: 0.79 at 15.5 deg C
Vap. Pres.: < 0.133 kPa at 20 deg C
Solubility in Water: < 0.01% at 25 deg C
Boiling Point: 156 to 197 deg C
Freezing/Melting Point.: -58 deg C
Viscosity: 1.14 cST at 25 deg C
Vapour Density (air=1): 4.8
Evaporation Rate: 0.1 Approximately
% Volatile: 100
Odour: Mild petroleum odor.
Appearance: Clear, colorless liquid.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconciousness, and other central nervous system effects, including death.

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)
Skin contact may aggravate an existing dermatitis condition.

INGESTION:

Minimal toxicity
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.

SPECIAL HEALTH PRECAUTIONS:

Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Trimethylbenzene, 25 ppm (123 mg/m3).
For Stoddard Solvent, 100 ppm (525 mg/m3).

MANUFACTURER RECOMMENDS:

100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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.

HANDLING, STORAGE AND SHIPPING:

Keep container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
DO NOT handle or store near an open flame, heat, or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
DO NOT pressurize, cut, heat, or weld containers.
Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: May 10, 1994
Supersedes: June 20, 1993
MSDS Number: 028355

1. PRODUCT INFORMATION

Product Identifier: ESSO IOSOL

Application and Use:
Solvent, diluent, chemical feedstock, or fuel.

Product Description:
Aliphatic hydrocarbon.

CAS number: 64742-49-0

REGULATORY CLASSIFICATION

WHMIS Information:
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision B: Toxic Material

TDG Information (Rail/Road):
PIN Number: UN 1255
Shipping Name: Naphtha, petroleum
Hazardous Substance: Naphtha, Petroleum
Packing Group: II
Primary TDG: Class 3.1

Canadian Environmental Protection Act (CEPA):
All components of this product are either on the Domestic Substances List (DSL) or exempt.

EMERGENCY TELEPHONE NUMBER

Health/Transportation

24 Hour Service (519) 339-2145

MANUFACTURER/SUPPLIER

IMPERIAL OIL
Products Division
111 ST CLAIR AVENUE W.
Toronto, Ontario
M5W 1K3
(416) 968-4111

REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	%	CAS
Light naphtha - Hydrotreated	100	64742-49-0

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Spec. Gravity: 0.68 at 15.6 deg C
Vap. Pres.: 12.983 kPa at 20 deg C Approximate
Solubility in Water: < 0.01% at 25 deg C
Boiling Point: 64 to 96 deg C Approximate
Freezing/Melting Point.: -54 deg C
Viscosity: 0.49 cST at 25 deg C Approximate
Vapour Density (air = 1): 3
Evaporation Rate: 5.6 Approximate
% Volatile: 100
Odour: Mild petroleum odour.
Appearance: Clear, colourless liquid.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, central nervous system defects, brain damage and possibly death.

EYE CONTACT:

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:

Minimal toxicity
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC:

Contains n-Hexane. Prolonged and/or repeated exposure to n-Hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs.
Simultaneous overexposure to the vapours of n-Hexane and Methyl Ethyl Ketone (MEK) or to n-Hexane and Methyl Isobutyl Ketone (MIBK) can increase the risk of adverse effects from n-Hexane on the peripheral nervous system.

SPECIAL HEALTH PRECAUTIONS:

Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Toluene, 50 ppm (188 mg/m3).
For n-Hexane, 50 ppm (176 mg/m3); for other isomers, 500 ppm (1760 mg/m3).
For Trimethylbenzene, 25 ppm (123 mg/m3).
For Cyclohexane, 300 ppm (1030 mg/m3).

MANUFACTURER RECOMMENDS:

100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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.

Please turn over

Esso Imperial Oil MATERIAL SAFETY DATA SHEET

Date Prepared: October 31, 1995
Supersedes: April 4, 1994
MSDS Number: 360000

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ESSO RAD

Application and Use:
Engine antifreeze coolant

Product Description:

A glycol type antifreeze

REGULATORY CLASSIFICATION

WHMIS:

Class D, Division 2, Subdivision A: Very Toxic Material.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Compounds, Anti-Freeze
Class: Not regulated Packing Group: Not regulated
PIN Number: Not regulated Guide Number: 134

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Monoethylene Glycol	80-90 v/v	107-21-1	LD50:8.5g/kg,ort,rat LD50 19g/kg,skn,rbt

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: > 19.10 cSt at 20 deg C
Vapour Density: not available
Boiling Point: 166 deg C
Evaporation rate: < 1 (1= n-butylacetate)
Solubility in water: 100.00%
Freezing/Pour Point: not available
pH: 11.0
Odour Threshold: not available
Vapour Pressure: < 1 kPa at 38 deg C
Density: 1.11 g/cc at 16 deg C
Appearance/odour: A green coloured liquid, with a sweet smell.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.
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

INGESTION:

Moderately toxic

CHRONIC:

Contains ethylene glycol (EG). Repeated high dose exposure to EG by ingestion (animal studies) has caused kidney damage, brain damage, degeneration of the liver, changes in blood chemistry and circulating blood cells. Prolonged and/or repeated exposures may cause similar effects in humans.
Ethylene glycol has been shown to cause developmental and reproductive effects at high dose levels in laboratory animals. The relationship of these results to humans has not been fully established.

This product contains Diethylene Glycol (DEG). Prolonged and repeated exposure through ingestion of DEG may result in toxic effects on the kidney.

ACUTE TOXICITY DATA:

Based on animal and human testing data from similar materials and products, the acute toxicity of this product is expected to be
Oral: LD50 > 1300 mg/kg (human)
LD50 > 8500 mg/kg (rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For diethylene glycol, the Supplier recommends an exposure limit of 10 mg/m3 (aerosol) and 50 ppm (total), based upon the AIHA WEEL.

ACGIH recommends:
For Ethylene Glycol aerosol, a ceiling limit of 39.4 ppm (100 mg/m3)

Local regulated limits may vary.

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:

If swallowed, induce vomiting only if victim is conscious.
Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

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 contac 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.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: May 10, 1994
Supersedes: June 20, 1993
MSDS Number: 027010

1. PRODUCT INFORMATION

Product Identifier: IMPERIAL TOLUENE

Application and Use:
Solvent, diluent, chemical feedstock, or fuel

Product Description:
Aromatic hydrocarbon.

CAS number: 108-88-3

REGULATORY CLASSIFICATION

WHMIS Information:
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision B: Toxic Material

TDG Information (Rail/Road):
PIN Number: UN 1294
Shipping Name: Toluene
Packing Group: II
Primary TDG: Class 3.2
Subsidiary TDG: Class 9.2

Canadian Environmental Protection Act (CEPA):
All components of this product are either on the Domestic Substances List (DSL) or exempt.

EMERGENCY TELEPHONE NUMBER	MANUFACTURER/SUPPLIER
Health/Transportation	IMPERIAL OIL Products Division
24 Hour Service (519) 339-2145	111 ST CLAIR AVENUE W. Toronto, Ontario M5W 1K3 (416) 968-4111

2. REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	%	CAS	
Toluene	100	108-88-3	LD50: > 2 g/kg skn rbt LC50: 8,000 ppm rat

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Spec. Gravity: 0.87 at 15.5 deg C
Vap. Pres.: 7 kPa at 38 deg C
Solubility in Water: < 0.1% at 20 deg C
Boiling Point: 110 to 111 deg C
Freezing/Melting Point.: -95 deg C
Viscosity: 0.65 cST at 25 deg C
Vapour Density (air = 1): 3.17
Evaporation Rate: 2.1
% Volatile: 100
Molecular Wt: 92
Odour: Aromatic odour.
Appearance: Clear, colourless liquid.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconciousness, and other central nervous system effects, including death.
Negligible hazard at normal temperatures (up to 38 deg C).

EYE CONTACT:

Irritating, but will not injure eye tissue.

SKIN CONTACT:

Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).
Brief contact with the liquid will not result in significant irritation unless evaporation is prevented.

INGESTION:

Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.
Low toxicity.

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Toluene, 50 ppm (188 mg/m3).

Local regulated limits may vary.

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.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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 container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
DO NOT handle or store near an open flame, heat, or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
DO NOT pressurize, cut, heat, or weld containers.
Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

SPILL CONTROL AND DISPOSAL:

Consult an expert on the disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately.
Take all additional action necessary to prevent and remedy the adverse effects of the spill.

Please turn over

MATERIAL SAFETY DATA SHEET

Esso

Date Prepared: April 07, 1994
Supersedes: July 18, 1991
MSDS Number: 000117

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: INTERMEDIATE RESIDUAL FUEL
ESSO FUEL OIL 46 LS
ESSO MARINE INTERMEDIATE FUEL
FUEL OIL 46
FUEL OIL 46 LS
IMPERIAL ROYAL FUEL OIL
INTERMEDIATE FUEL OIL
MARINE INTERMEDIATE FUEL

Application and Use
Intermediate residual fuel requiring some preheating for use in liquid fuel burning equipment for heating and/or as a fuel in medium to slow speed internal combustion engines

Product Description

A complex mixture of aliphatic, olefinic, naphthenic and aromatic hydrocarbons

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3: Combustible Liquids.
Class D, Division 2, Subdivision A: Very Toxic Material.
Class D, Division 2, Subdivision B: Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Fuel oil
Class: Flammable liquid 3.3 Packing Group: III
PIN Number: UN1202 Guide Number: 123

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #
Light Atmospheric Gas Oil	0-40 v/v	64741-44-2
Heavy Atmospheric Gas Oil	0-40 v/v	68915-96-8
Light Cat. Cracked Distillate	0-80 v/v	64741-59-9
Cat Cracked Clarified Oil	0-10 v/v	64741-62-4
Oxidized Pitch (petroleum)	0-70 v/v	68187-58-6

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: 0.930 to 0.995 at 15.5 deg C
Viscosity: 12.00 cSt at 50 deg C
to 460.00 cSt at 50 deg C
Vapour Density: > 1
Boiling Point: not available
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: not available
Odour Threshold: not available
Vapour Pressure: 0.1 kPa at 15 deg C
Appearance/odour: Black liquid

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Low toxicity.
Elevated temperatures or mechanical action may form vapours, mists or fumes which may affect various internal body systems.
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:

Irritating
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).
Certain components present in this material may be absorbed through the skin in toxic quantities

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:

Contains polycyclic aromatic compounds (PAC's). Prolonged and/or repeated skin contact with certain PAC's has been shown to cause skin cancer. Prolonged and/or repeated exposures by inhalation of certain PAC's may also cause cancer of the lung and of other parts of the body. This material or one of its components has shown evidence of causing mutations in laboratory animals.
Prolonged and/or repeated exposures may cause liver disorder and/or damage

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For total oil mist and particulate, 0.2 mg/m3 benzene soluble fraction recommended.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. 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.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared May 17, 1995
Supersedes May 3, 1994
MSDS Number 000113

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier KEROSENE (DYED OR CLEAR)
ESSO KEROSENE
ESSO KEROSENE (DYED)
KEROSENE
KEROSENE (DYED)
KEROSENE FOR UFA

Application and Use:
Light, low sulphur, clean burning distillate fuel for vented heaters and wick lamps.

Product Description:

A mixture of petroleum aliphatic, olefinic, naphthenic and aromatic hydrocarbons.

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3, Combustible Liquids
Class D, Division 2, Subdivision B Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Kerosene
Class: Flammable liquid 3.3 Packing Group: III
PIN Number: UN1223 Guide Number: 122

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Kerosene, straight run	100 v/v	8008-20-6	LD50: > 5g/kg,oral,rat

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity 1.00 cSt at 40 deg C
to 1.90 cSt at 40 deg C
Vapour Density: 4.5
Boiling Point: 130 to 288 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -39 deg C D97
Odour Threshold: not available
Vapour Pressure: < 1 kPa at 38 deg C
Density 0.80 g/cc at 15 deg C
Appearance/odour: Clear, colourless liquid, petroleum odour

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
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:

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

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:

Lifetime skin painting tests indicate that materials of similar composition have produced skin cancer in experimental animals. The relationship of these results to humans has not been fully established.

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 > 5000 mg/kg (Rat)
Dermal LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. 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.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where skin and eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear long sleeves and safety glasses with side shields.

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.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared May 16 1995
Supersedes April 13 1994
MSDS Number 000111

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier KEROSENE TYPE AVIATION TURBINE FUEL
ESSO JET A
ESSO JET A1
ESSO TURBO FUEL A
ESSO TURBO FUEL A1
JET A
JET A1
TURBO FUEL A
TURBO FUEL A1
TURBO FUEL A1 F34
TURBO FUEL A1-JP8

Application and Use
Kerosene-type aviation fuel for turbine-powered aircraft

Product Description

A mixture of aliphatic and aromatic hydrocarbons and additives.

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3, Combustible Liquids
Class D, Division 2, Subdivision A, Very Toxic Material
Class D, Division 2, Subdivision B, Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Fuel, Aviation, Turbine engine
Class: Flammable liquid 3.3 Packing Group: III
PIN Number: UN1863 Guide Number: 121.

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr (519) 339-2145
Technical Info (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Kerosene, straight run	0-100 v/v	8008-20-6	LD50: > 5g/kg,oral,rat
Light Hydrocracked Distillate	0-100 v/v	64741-77-1	
Ethylene Glycol Monomethyl Ether	0-0.15 v/v	109-86-4	LD50:2.4g/kg,orl,rat LD50:0.8g/kg,orl,rab
Diethylene Glycol Monomethyl Ether	0-0.15 v/v	111-77-3	LD50:9.2g/kg,orl,rat LD50:0.6g/kg,skn,rbt

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State Liquid
Specific gravity not available
Viscosity 8.00 cSt at -20 deg C
Vapour Density: 4
Boiling Point 140 to 300 deg C
Evaporation rate < 1 (1 = n-butylacetate)
Solubility in water negligible
Freezing/Pour Point -40 deg C MAX
Odour Threshold not available
Vapour Pressure 4 kPa at 38 deg C
Density 0.81 g/cc at 15 deg C
Appearance/odour White or pale yellow liquid, petroleum odour

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C).
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:

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

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:

Lifetime skin painting tests indicate that materials of similar composition have produced skin cancer in experimental animals. The relationship of these results to humans has not been fully established.
May contain ethylene glycol monomethyl ether (EGME). Prolonged and/or repeated exposure through inhalation or extensive skin contact with EGME may result in toxic effects on the blood, the blood producing system, the kidneys, the male reproductive system and the embryo/fetus.
Contains diethylene glycol monomethyl ether (DIEGME). Prolonged and repeated exposure through inhalation or extensive skin contact with DIEGME may result in toxic effects on the kidneys, the reproductive system and/or the embryo/fetus.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. 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.

Please turn over

Esso Imperial Oil

MATERIAL SAFETY DATA SHEET

Date Prepared February 24, 1994
Supersedes May 5, 1993
MSDS Number 020140

1. PRODUCT INFORMATION

Product Identifier PORTABLE HEATER FUEL

Application and Use
Solvent, diluent, chemical feedstock, or fuel.

Product Description
Aliphatic hydrocarbon

CAS number 8052-41-3

REGULATORY CLASSIFICATION

WHMIS Information
Class B, Division 3 Combustible Liquids

TDG Information (Rail/Road)
PIN Number UN 1256
Shipping Name Naphtha, solvent
Packing Group III
Primary TDG Class 3

Canadian Environmental Protection Act (CEPA)
All components of this product are either on the Domestic Substances List (DSL) or exempt

EMERGENCY TELEPHONE NUMBER

Health/Transportation

24 Hour Service (519) 339-2145

MANUFACTURER/SUPPLIER

IMPERIAL OIL
Products Division
111 ST CLAIR AVENUE W.
Toronto, Ontario
M5W 1K3
(416) 968-4111

2. REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	% (V/V)	CAS	
Stoddard solvent	100	8052-41-3	LD50: > 5 g/kg orl rat LC50: > 5 g/m3 rat

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid
Spec. Gravity 0.79 at 15.5 deg C
Vap. Pres. < 0.1 kPa at 20 deg C
Solubility in Water < 0.01% at 25 deg C
Boiling Point 156 to 197 deg C
Freezing/Melting Point -58 deg C
Viscosity 1.14 cST at 25 deg C
Vapour Density (air = 1): 4.8
Evaporation Rate 0.1 Approximately
% Volatile 100
Odour Mild petroleum odor.
Appearance Clear, colorless liquid

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconciousness, and other central nervous system effects, including death.

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)
Skin contact may aggravate an existing dermatitis condition

INGESTION:

Minimal toxicity
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death

SPECIAL HEALTH PRECAUTIONS:

Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Trimethylbenzene, 25 ppm (123 mg/m3)
For Stoddard Solvent:, 100 ppm (525 mg/m3)

MANUFACTURER RECOMMENDS:

100 ppm based on composition

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields
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.

HANDLING, STORAGE AND SHIPPING:

Keep container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials
DO NOT handle or store near an open flame, heat, or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
DO NOT pressurize, cut, heat, or weld containers.
Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared May 18, 1995
Supersedes April 13 1994
MSDS Number 000110

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier TURBINE FUEL AVIATION, WIDE CUT TYPE
ESSO JET B
ESSO TURBO FUEL B
JET B
TURBO FUEL B
TURBO FUEL B F40
TURBO FUEL B JP4

Application and Use
Naphtha-kerosene blended aviation fuel for turbine-powered aircraft

Product Description

A mixture of aliphatic and aromatic hydrocarbons and additives.

REGULATORY CLASSIFICATION

WHMIS:

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

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name Fuel, Aviation, Turbine Engine
Class Flammable Liquid 3.1 Packing Group: II
PIN Number UN1863 Guide Number: 120

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #	
Kerosene, straight run	40-70 v/v	8008-20-6	LD50: > 5g/kg,oral,rat
Naphtha, full range	30-60 v/v	64741-42-0	
Ethylene Glycol Monomethyl Ether	0-0.15 v/v	109-86-4	LD50:2.4g/kg,orl,rat LD50:0.8g/kg,orl,rab
Diethylene Glycol Monomethyl Ether	0-0.15 v/v	111-77-3	LD50:9.2g/kg,orl,rat LD50:0.6g/kg,skn,rbt

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: not available
Viscosity: 0.60 cSt at 40 deg C
Vapour Density: 4
Boiling Point: 40 to 243 deg C
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: -53 deg C less than
Odour Threshold: not available
Vapour Pressure: 21 kPa at 38 deg C
Density: 0.78 g/cc at 15 deg C
Appearance/odour: White or pale yellow liquid, petroleum odour

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C)
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:

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

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:

May contain ethylene glycol monomethyl ether (EGME). Prolonged and/or repeated exposure through inhalation or extensive skin contact with EGME may result in toxic effects on the blood, the blood producing system, the kidneys, the male reproductive system and the embryo/fetus.
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.).
Contains diethylene glycol monomethyl ether (DIEGME). Prolonged and repeated exposure through inhalation or extensive skin contact with DIEGME may result in toxic effects on the kidneys, the reproductive system and/or the embryo/fetus.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
100 ppm based on composition.
For Benzene (skin) 1) 5 ppm TWA for 8 hrs/day 2) 3 ppm TWA for 12 hrs/day 3) 250 ppm minutes for 5 to 30 minutes.

ACGIH recommends:
For n-Hexane, 50 ppm (180 mg/m3).
For Benzene, the ACGIH recommends a TLV of 10 ppm (30 mg/m3), and describes it as a substance of suspect carcinogenic potential in man.
For 2-Methoxyethanol, (skin) 5 ppm (16 mg/m3).

Local regulated limits may vary

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. If irritation persists, seek medical attention.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared: November 03, 1994
Supersedes: April 11, 1994
MSDS Number: 000108

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: UNLEADED GASOLINE (DYED OR CLEAR)
ESSO EXTRA MIDGRADE GASOLINE
ESSO EXTRA MIDGRADE UNLEADED
ESSO MIDGRADE UNLEADED
ESSO PREMIUM UNLEADED
ESSO REGULAR UNLEADED
ESSO SUPER PREMIUM UNLEADED
ESSO SUPREME PREMIUM UNLEADED
ESSO SUPREME 92 PREMIUM UNLEADED
ESSO UNLEADED (REGULAR)
EXXON MIDGRADE UNLEADED
EXXON PREMIUM UNLEADED
EXXON REGULAR UNLEADED
INDOLENE GASOLINE
MIDGRADE GASOLINE
MIDGRADE UNLEADED
PREMIER GASOLINE
PREMIUM UNLEADED
REGULAR UNLEADED

Application and Use:
Unleaded fuel for spark ignited engines. The product name will include "DYED" if the product is dyed for tax purposes.

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.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Gasoline
Class: Flammable Liquid 3.1 Packing Group: II
PIN Number: UN1203 Guide Number: 119

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info. (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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	0-11 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: 25 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.
Contains small amounts of methylcyclopentadienyl manganese tricarbonyl (MMT), benzene and n-hexane. MMT may cause nervous system, liver and kidney effects. Benzene may cause blood and/or the blood producing system disorder and/or damage; n-hexane may cause peripheral (e.g. fingers, feet, arms etc.) nerve damage. In high concentrations gasoline components may cause central nervous system disorders.

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.)

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, 100 ppm (300 mg/m3).
For Benzene (skin) 1) 5 ppm TWA for 8 hrs/day 2) 3 ppm TWA for 12 hrs/day 3) 250 ppm minutes for 5 to 30 minutes.
For Methyl-tert-butyl ether, a 15 minute short-term exposure limit (STEL) of 50 ppm.

ACGIH recommends:
For Gasoline, 300 ppm (900 mg/m3).
For n-Hexane, 50 ppm (180 mg/m3).
For Benzene, the ACGIH recommends a TLV of 10 ppm (30 mg/m3), and describes it as a substance of suspect carcinogenic potential in man

Local regulated limits may vary.

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.

Please turn over

MATERIAL SAFETY DATA SHEET

Date Prepared February 24, 1994
Supersedes May 5, 1993
MSDS Number 020010

1. PRODUCT INFORMATION

Product Identifier: VARSOL 3139 SOLVENT

Application and Use:
Solvent, diluent, chemical feedstock, or fuel

Product Description:
Aliphatic hydrocarbon

CAS number 8052-41-3

REGULATORY CLASSIFICATION

WHMIS Information:
Class B, Division 3 Combustible Liquids

TDG Information (Rail/Road)
PIN Number: UN 1256
Shipping Name Naphtha, solvent
Packing Group III
Primary TDG Class 3

Canadian Environmental Protection Act (CEPA):
All components of this product are either on the Domestic Substances List (DSL) or exempt

EMERGENCY TELEPHONE NUMBER

Health/Transportation

24 Hour Service (519) 339-2145

MANUFACTURER/SUPPLIER

IMPERIAL OIL
Products Division
111 ST CLAIR AVENUE W.
Toronto, Ontario
M5W 1K3
(416) 968-4111

2. REGULATED COMPONENTS

The following component data is defined in accordance with sub-paragraph 13(a)(i) to (iv) or paragraph 14(a) of the Hazardous Products Act.

NAME	% (v/v)	CAS	
Stoddard solvent	100	8052-41-3	LD50: > 5 g/kg orl rat LC50: > 5 g/m3 rat

3. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Spec. Gravity: 0.79 at 15.5 deg C
Vap. Pres.: < 0.1 kPa at 20 deg C
Solubility in Water: < 0.01% at 25 deg C
Boiling Point: 156 to 197 deg C
Freezing/Melting Point.: -58 deg C
Viscosity: 1.14 cST at 25 deg C
Vapour Density (air = 1): 4.8
Evaporation Rate: 0.1 Approximately
% Volatile: 100
Odour: Mild petroleum odor
Appearance: Clear, colorless liquid

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

High vapour/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconciousness, and other central nervous system effects, including death.

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)
Skin contact may aggravate an existing dermatitis condition

INGESTION:

Minimal toxicity
Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death

SPECIAL HEALTH PRECAUTIONS:

Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

OCCUPATIONAL EXPOSURE LIMIT

ACGIH RECOMMENDS:

For Trimethylbenzene, 25 ppm (123 mg/m3)
For Stoddard Solvent, 100 ppm (525 mg/m3)

MANUFACTURER RECOMMENDS:

100 ppm based on composition.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies depending upon conditions of use.
Where prolonged and/or repeated skin and eye contact is likely to occur, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear safety glasses with side shields.
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.

HANDLING, STORAGE AND SHIPPING:

Keep container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
DO NOT handle or store near an open flame, heat, or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
DO NOT pressurize, cut, heat, or weld containers.
Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

Please turn over

Esso Imperial Oil

MATERIAL SAFETY DATA SHEET

Date Prepared: September 18, 1995
Supersedes: September 15, 1992
MSDS Number: 000103

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ISOBUTANE

Application and Use:
Chemical feedstock, gasoline blending and heating fuel

Product Description:

Colourless, odourless gases composed mainly of C4 hydrocarbons, stored and handled as liquids under pressure.

REGULATORY CLASSIFICATION

WHMIS:

Class A - Compressed Gas
Class B, Division 1: Flammable Gases.

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Liquified Petroleum Gas (Butane) -Not Odourized
Class: Flammable Gas 2.1 Packing Group: Not regulated
PIN Number: UN1075 Guide Number: 103

Please be aware that other regulations may apply.

TELEPHONE NUMBERS

Emergency 24 hr. (519) 339-2145
Technical Info (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St. Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #
Normal Butane	0-50 v/v	106-97-8
Isobutane	50-100v/v	75-28-5
Propane	0- 5 v/v	74-98-6

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Gas
Specific gravity: not available
Vapour Density: 2.01 VAP
Boiling Point: -12 deg C
Evaporation rate: > 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: not available
Odour Threshold: not available
Vapour Pressure: 240 kPa at 16 deg C
Density: 0.56 g/cc at 15 deg C
Appearance/odour: Colourless odourless gas

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

May cause central nervous system disorder (e.g. loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Breathing high vapour concentrations (saturated vapours) for a few minutes may be fatal. Saturated vapours can be encountered in confined spaces and/or under conditions of poor ventilation.

May cause irritation, breathing failure, coma and death without any warning odour being sensed.
Avoid breathing vapours or mists.

EYE CONTACT:

Exposure to rapidly expanding gas or vapourizing liquid may cause frostbite (cold burns) and permanent eye damage.

SKIN CONTACT:

Exposure to rapidly expanding gas or vapourizing liquid may cause frostbite (cold burn).

INGESTION:

Not considered to be a hazard.

ACUTE TOXICITY DATA:

Based upon animal test data, the acute toxicity of this product is expected to be:
Inhalation: 4-Hour LC50 = 280,000 ppm (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For Propane, 1000 ppm TWA for 8 hours/day, and 1500 ppm for a 15 minute short term exposure (STEL)
For Isobutane, 800 ppm.

ACGIH recommends:
For Butane, 800 ppm (1900 mg/m3)

Local regulated limits may vary.

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:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention.

SKIN CONTACT:

In case of cold burns caused by rapidly expanding gas or vapourizing liquid, get prompt medical attention.

INGESTION:

First aid is not applicable.

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 gas-proof goggles, face shield chemical-resistant overalls, and appropriate thermal/chemical gloves. Where skin and eye contact is unlikely, but may occur as a result of short and/or periodic exposures, wear long sleeves, chemical resistant gloves, gas-proof goggles, and a face shield.

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. Store in a cool, well ventilated place away from incompatible materials. Empty containers may contain product residue. Do not pressurize, cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.
Store and load the container at normal (up to 38 deg C) temperature and at atmospheric pressure.

Please turn over

MATERIAL SAFETY DATA SHEET

Esso

Date Prepared April 13, 1994
Supersedes April 12, 1994
MSDS Number 000118

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier HEAVY RESIDUAL FUEL
BUNKER FUEL OIL
HEAVY FUEL OIL
HEAVY FUEL OIL 6101
HEAVY FUEL OIL 6152
HEAVY FUEL OIL 6203
HEAVY FUEL OIL 6302
HEAVY FUEL OIL 6303
NO 6 FUEL OIL

Application and Use
High BTU, high viscosity heavy residual fuel

Product Description

A complex mixture of aliphatic, olefinic, naphthenic and aromatic hydrocarbons

REGULATORY CLASSIFICATION

WHMIS:

Class B, Division 3 Combustible Liquids
Class D, Division 2, Subdivision A Very Toxic Material
Class D, Division 2, Subdivision B Toxic Material

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name: Fuel oil
Class: Flammable liquid 3.3 Packing Group: III
PIN Number: UN1202 Guide Number: 123

Please be aware that other regulations may apply

TELEPHONE NUMBERS

Emergency 24 hr (519) 339-2145
Technical Info (800) 268-3183

MANUFACTURER/SUPPLIER:

IMPERIAL OIL
Products Division
111 St Clair Avenue West
Toronto, Ontario
M5W 1K3
(416) 968-4111

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 #
Light Atmospheric Gas Oil	0-40 v/v	64741-44-2
Heavy Atmospheric Gas Oil	0-50 v/v	68915-96-8
Oxidized Pitch (petroleum)	0-70 v/v	68187-58-6
Light Cat. Cracked Distillate	0-40 v/v	64741-59-9
Cat Cracked Clarified Oil	0-100v/v	64741-62-4

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid
Specific gravity: 0.930 to 1.035 at 15.5 deg C
Viscosity: 200.00 cSt at 50 deg C
to 635.00 cSt at 50 deg C
Vapour Density: > 1
Boiling Point: not available
Evaporation rate: < 1 (1 = n-butylacetate)
Solubility in water: negligible
Freezing/Pour Point: not available
Odour Threshold: not available
Vapour Pressure: 0.1 kPa at 20 deg C
Appearance/odour: Black viscous liquid

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Low toxicity
Elevated temperatures or mechanical action may form vapours, mists or fumes which may affect various internal body systems.
It is possible for the toxic gas hydrogen sulphide to build up in tanks or other confined spaces that contain this product. Although the gas smells like rotten eggs at low concentrations, it may cause irritation, respiratory collapse, coma and death without necessarily any warning odour being sensed.
Avoid breathing vapours or mists.

EYE CONTACT:

Slightly irritating, but will not injure eye tissue.

SKIN CONTACT:

Irritating
Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis)
Certain components present in this material may be absorbed through the skin in toxic quantities.
Exposure to hot material may cause thermal burns.

INGESTION:

Low toxicity
Irritating to mouth, throat and stomach and may cause digestive tract disorder and/or damage.

CHRONIC:

Contains polycyclic aromatic compounds (PAC's). Prolonged and/or repeated skin contact with certain PAC's has been shown to cause skin cancer. Prolonged and/or repeated exposures by inhalation of certain PAC's may also cause cancer of the lung and of other parts of the body. This material or one of its components has shown evidence of causing mutations in laboratory animals.
Prolonged and/or repeated exposures may cause liver disorder and/or damage.

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 > 5000 mg/kg (Rat)
Dermal : LD50 > 2000 mg/kg (Rabbit)
Inhalation : LC50 > 2500 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

Manufacturer recommends:
For total oil mist and particulate, 0.2 mg/m3 benzene soluble fraction recommended.

Local regulated limits may vary.

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:

Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. If irritation persists, seek medical attention.
For hot material, immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

Please turn over

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER :	PRODUCT IDENTIFICATION NUMBER
AIRCHIME HAND HELD HORN PROPELLANT - 10939	UN1078

PRODUCT USE : HAND HELD SAFETY HORN CONTAINING LIQUIFIED, COMPRESSED GAS.

MANUFACTURER'S NAME : AIRCHIME MANUFACTURING CO. LTD.

STREET ADDRESS:	CITY :	PROVINCE :	POSTAL CODE:	TEL. NUMBER :(604) 291-8295 FAX NUMBER : (604) 294-6440
1410 BOUNDARY ROAD	BURNABY	B.C.	V5K-4V3	

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	CAS NUMBER	LD_{50} OF INGREDIENT (SPECIFY SPECIES AND ROUTE)	LC_{50} OF INGREDIENT (SPECIFY SPECIES)
1,1,1,2-TETRAFLUOROETHANE	100	811-97-2	DATA NOT AVAILABLE	567,000 PPM IN RAT
Also known as HFC 134a; Dymel 134a; Norflurane; R134a				

SECTION 3 - PHYSICAL DATA

PHYSICAL STATE :	ODOR AND APPEARANCE :	ODOR THRESHOLD (PPM)
LIQUID GAS	ODOR SLIGHT ETHEREAL AND CLEAR, COLORLESS	NOT AVAILABLE

VAPOUR PRESSURE :	VAPOUR DENSITY:	% VOLATILES :	BOILING POINT:	FREEZING POINT:
96 PSIA @ 25 °C (77 °)	3.18 (AIR = 1)	100 WT%	-26.2°C (15.2°F) @ 736mm Hg	NOT APPLICABLE

PH :	DENSITY:	SOLUBILITY IN WATER:
NOT AVAILABLE	1.21 G/CC @ 25°C (77°F)- LIQUID	0.15 WT % @ 25 °C & 14.7 PSIA

SECTION 4 - FIRE AND EXPLOSION DATA

FLAMMABILITY:
YES ☐ NO ☑ IF YES, UNDER WHICH CONDITIONS? ▷

MEAN OF EXTINCTION:
Cool cans with water spray to avoid rupture, wear self-contained breathing apparatus.

FLASH POINT (°C) AND METHOD:	UPPER FLAMMABLE LIMIT (% BY VOLUME):	LOWER FLAMMABLE LIMIT (% BY VOLUME)
NIL	NOT APPLICABLE	NOT APPLICABLE

AUTO-IGNITION TEMPERATURE (°C) :	HAZARDOUS COMBUSTION PRODUCTS:
GREATER THAN 743 °C (>1369 °F)	*Contents may decompose on contact with flame or hot metal surface to form highly toxic and irritating hydrogen fluoride and carbonyl fluoride gases.*

EXPLOSION DATA :	SENSITIVITY TO STATIC DISCHARGE
▷ *Pressurized container can burst violently if punctured,* crushed or heated.	NOT APPLICABLE

SECTION 5 - REACTIVITY DATA

CHEMICAL STABILITY:
YES ☑ NO ☐ IF YES , UNDER WHICH CONDITIONS? ▷ PRODUCT IS STABLE UNDER NORMAL CONDITION 25 °C AND 14.7 PSIA

INCOMPATIBILITY WITH OTHER SUBSTANCES
YES ☑ NO ☐ IF YES, WHICH ONES? ▷ Incompatible with alkali or alkali metals, strong acids and powder Aluminum, Zinc, Beryllium etc..

REACTIVITY AND UNDER WHAT CONDITIONS?
Propellant gas is combustible at pressures as low as 5.5 psig at 177°C (351°F) in air at greater than 60% air by volume.

HAZARDOUS DECOMPOSITION PRODUCTS:
Propellant gas decomposes in contact with flames or heated metal surfaces to form toxic and irritating hydrogen fluoride and carbonyl fluoride gases.