

Material Safety Data Sheet



KEROSENE

1. Product and company identification

Product name	: KEROSENE	
Synonym	: KERO 1-K	
Material uses	: Heating and illuminating oil.	
Supplier/Manufacturer	: Supplier Federated Co-operatives Limited P. O. Box 1050; 401 - 22nd Street East Saskatoon, SK S7K 3M9 Canada (306) 244-3447	Manufacturer Imperial Oil; Chemicals Division 111 ST. Clair Avenue West Toronto, ON M5W 1K3 (416) 968-4415
Code	: 106	
Responsible name	: Atrion Regulatory Services, Inc.	
In case of emergency	: CANUTEC (613) 996-6666	

2. Hazards identification

Physical state	: Liquid. [Clear.]
Odor	: Petroleum. [Slight]
Emergency overview	: WARNING! COMBUSTIBLE. CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. Irritating to eyes and skin. High vapour/aerosol concentrations attained at elevated temperatures 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. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: Irritating to respiratory system.
Ingestion	: Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.
Potential chronic health effects	
Chronic effects	: Contains material that can cause target organ damage.
Carcinogenicity	: Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: High exposure to xylenes in some animal studies have been reported to cause health effects on the developing embryo/fetus. Those effects were often at levels toxic to the mother. The significance of these findings to humans has not been determined
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which causes damage to the following organs: kidneys, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea. May be anesthetic and may cause other central nervous system effects.



2. Hazards identification

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
headache
dizziness/vertigo
- Ingestion** : No specific data.
- Skin** : Adverse symptoms may include the following:
irritation
redness
- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Stoddart solvent	8052-41-3	60 - 100
Distillates (petroleum), hydrotreated light	64742-47-8	30 - 60
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Xylene	1330-20-7	0.1 - 1
Naphthalene	91-20-3	0.1 - 1
Ethylbenzene	100-41-4	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention if irritation occurs.
- Skin contact** : In case of contact, immediately flush skin with plenty of water. Wash with plenty of soap and water. Remove contaminated clothing, including shoes, after flushing has begun. Wash clothing before reuse. Seek medical attention if irritation persists.
- Inhalation** : Move exposed person to fresh air. In emergency situations, use proper respiratory protection to remove the victim to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

- Flammability of the product** : Combustible liquid. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. May form combustible mixtures with air at temperatures at or above the flashpoint. Toxic gases may form when product burns.
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam. Use water spray to cool fire exposed surfaces and to protect personnel.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Avoid spraying water directly into storage container due to the danger of boilover. Shut off fuel to fire when/if safe to do so.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
smoke
fumes
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Material will accumulate static

7. Handling and storage

charges. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Launder contaminated clothing before reuse. Empty container may contain hazardous residue. Empty containers retain product residue and can be hazardous. Do not reuse empty containers without commercial cleaning.

- Storage** :
- Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Canada

Product name

Stoddart solvent

Exposure limits

ACGIH TLV (United States, 1/2008).

TWA: 525 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

Distillates (petroleum), hydrotreated light

ACGIH TLV (United States, 1/2008). Absorbed through skin.

TWA: 200 mg/m³ 8 hour(s).

1,2,4-Trimethylbenzene

ACGIH TLV (United States, 1/2008).

TWA: 123 mg/m³ 8 hour(s).

TWA: 25 ppm 8 hour(s).

Naphthalene

ACGIH TLV (United States, 1/2008).

STEL: 79 mg/m³ 15 minute(s).

STEL: 15 ppm 15 minute(s).

TWA: 52 mg/m³ 8 hour(s).

TWA: 10 ppm 8 hour(s).

Ethylbenzene

ACGIH TLV (United States, 1/2008).

STEL: 125 ppm 15 minute(s).

TWA: 100 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** :
- If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.


- Engineering measures** :
- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Lab samples should be handled with adequate ventilation (under a fume hood if necessary). Provide mechanical ventilation for confined spaces.

- Hygiene measures** :
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

- Eyes** :
- Splash goggles.

8 . Exposure controls/personal protection

Skin	: Wear chemical resistant clothing if prolonged skin contact is likely.
Respiratory	: A respirator is not needed under normal and intended conditions of product use. Wear an appropriate NIOSH approved respirator if concentration levels exceed the safe exposure limits. If exposure levels are not known, wear an air supplied respirator(SCBA).
Hands	: Chemical resistant gloves.
Personal protective equipment (Pictograms)	: 
HMIS Code/Personal protective equipment	: x
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	: Liquid. [Clear.]
Flash point	: Closed cup: 47°C (116.6°F)
Auto-ignition temperature	: 227°C (440.6°F)
Flammable limits	: Lower: 1.1% Upper: 6%
Color	: Colorless.
Odor	: Petroleum. [Slight]
Boiling/condensation point	: 164 to 203°C (327.2 to 397.4°F)
Melting/freezing point	: <-54°C (<-65.2°F)
Specific gravity	: 0.8
Vapor pressure	: 0.03 kPa (0.224 mm Hg)
Vapor density	: 5 [Air = 1]
Volatility	: 100% (w/w)
Evaporation rate	: 0.01 (butyl acetate = 1)
VOC	: 0.81 % (w/w)
Solubility	: Very slightly soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability	: The product is stable. Use product with caution around heat, sparks, pilot lights, static electricity and open flames.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. Avoid exposure - obtain special instructions before use.
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Smoke, carbone monoxide, fumes.
Conditions of reactivity	: Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Slightly flammable in the presence of the following materials or conditions: heat.



11 . Toxicological information

Acute toxicity

Product/ingredient name	Species	Dose	Result	Exposure
Xylene	Rabbit	>1700 mg/kg	LD50 Dermal	-
	Rat	4300 mg/kg	LD50 Oral	-
	Rat	5000 ppm	LC50 Inhalation Gas.	4 hours
1,2,4-Trimethylbenzene	Rat	5 g/kg	LD50 Oral	-
Naphthalene	Rabbit	>20 g/kg	LD50 Dermal	-
	Rat	>2500 mg/kg	LD50 Dermal	-
	Rat	>490 mg/kg	LD50 Oral	-
Ethylbenzene	Rabbit	17800 uL/kg	LD50 Dermal	-
	Rat	3500 mg/kg	LD50 Oral	-
	Rat	55000 mg/m ³	LC50 Inhalation Vapor	2 hours

Inhalation : Irritating to respiratory system.

Ingestion : Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Distillates (petroleum), hydrotreated light	A3	-	-	-	-	-
Naphthalene	A4	2B	-	None.	Possible	-
Ethylbenzene	A3	2B	-	None.	-	-

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Species	Exposure	Result
Distillates (petroleum), hydrotreated light	-	Fish	96 hours	Acute LC50 2900 ug/L
	-	Crustaceans	48 hours	Acute LC50 17000 ug/L
	-	Fish	96 hours	Acute LC50 7720 to 8280 ug/L
Naphthalene	-	Daphnia	48 hours	Acute EC50 1.96 mg/L
	-	Fish	96 hours	Acute LC50 2.25 mg/L
	-	Daphnia	48 hours	Acute LC50 17.4 mg/L
	-	Fish	96 hours	Acute LC50 2.1 ppm
	-	Crustaceans	48 hours	Acute LC50 2.6 to 2.89 ppm
Ethylbenzene	-	Daphnia	48 hours	Acute EC50 2930 to 4400 ug/L
	-	Crustaceans	48 hours	Acute LC50 >5200 ug/L
	-	Fish	96 hours	Acute LC50 4.3 to 4.7 uL/L

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.






13 . Disposal considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

AERG : 128

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	1268	PETROLEUM DISTILLATES, N.O.S. (Stoddart solvent)	3	III		-Limited Quantity Exemption: 454 L.
IMDG Class	1268	PETROLEUM DISTILLATES, N.O.S. (Stoddart solvent)	3	III		-
IATA-DGR Class	1268	PETROLEUM DISTILLATES, N.O.S. (Stoddart solvent)	3	III		-

PG* : Packing group

15 . Regulatory information

Canada

WHMIS (Canada)

- : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
- Class D-2A: Material causing other toxic effects (Very toxic).
- Class D-2B: Material causing other toxic effects (Toxic).



Canadian lists

- : **CEPA Toxic substances:** None of the components are listed.
- Canadian ARET:** None of the components are listed.
- Canadian NPRI:** The following components are listed: Stoddart solvent;Hydrotreated light distillate
- Alberta Designated Substances:** None of the components are listed.
- Ontario Designated Substances:** None of the components are listed.
- Quebec Designated Substances:** None of the components are listed.

Canada inventory (DSL/NDL)

- : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists

- : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements : COMBUSTIBLE. CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Fire hazard		2
Physical Hazard		0
Personal protection		X

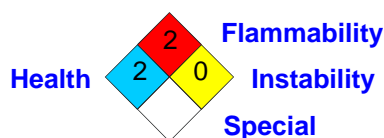
HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

See section 8 for more detailed information on personal protection.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.