

Material Safety Data Sheet

Kerosene

MSDS Number: M1002
Effective Date: 8/12/2004

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Section 1 - Chemical Product and Company Identification

MSDS Name: Kerosene
Synonyms: Kerosine, Coal Oil, Fuel Oil #1, Turbine Fuel
Company Identification:
VEE GEE Scientific, Inc.
13600 NE 126th PI Ste A
Kirkland, WA 98034
For information in North America, call: 425-823-4518

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
8008-20-6	Kerosene	90-100%	232-366-4

Hazard Symbols: XN
Risk Phrases: 65

Section 3 - Hazards Identification

1. The major effect of exposure to this product is headache, drowsiness, irritation of the eyes and nose, and lungs. Target organs include the respiratory system, nervous system, and mucous membranes.
2. NIOSH recommends that whole diesel engine exhaust be regarded as a potential occupational carcinogen. Follow OSHA and NSHA rules where diesel engine exhaust fumes may be generated.
3. A life time skin painting study by the American Petroleum Institute has shown that similar naphtha products with a boiling range of 350-700 degrees F usually produce skin tumors and/ or skin cancers in laboratory mice. Only a weak to moderate response occurred. The effect to humans has not been determined. Contact dermatitis (skin irritation) may occur with prolonged or repeated contact.
4. IARC has listed kerosene as probably carcinogenic to humans based on sufficient evidence in experimental animals and limited evidence in humans.

Hazards of Combustion Products: Carbon monoxide and carbon dioxide can be found in the combustion products of this product and other forms of hydrocarbon combustion. Carbon monoxide in moderate concentrations can cause symptoms of headache, nausea, vomiting, increased cardiac output, and confusion. Exposure to higher concentrations of carbon monoxide can cause loss of consciousness, heart damage, brain damage, and/or death. Exposure to high concentrations of carbon dioxide can cause simple asphyxiation by displacing available oxygen. Combustion of this and other similar materials should only be carried out in well ventilated areas. The National Kerosene Heater Association has released preliminary test results that indicate no increased emissions of carbon monoxide or nitrogen dioxide resulted from using red-dyed kerosene in "new generation" heaters.

Medical Condition Generally Aggravated By Exposure: Medical conditions which have the same symptoms and effects as those outlined under the health hazard information section can be aggravated by exposure to this product.

Routes Of Exposure

Inhalation: Irritation of the upper respiratory tract and eyes, with possible euphoria, dizziness, headache, discoordination, ringing in the ears, convulsions, coma, and respiratory arrest.

Skin Contact: Defatting of the skin may occur with continued and prolonged contact. Irritation and burning sensation may occur on exposure to the liquid or mists, as well as the possibility of blisters. Hair loss can occur upon chronic exposure.

Skin Absorption: Not significant.

Eye Contact: Severe burning sensation with temporary irritation and swelling of lids.

Ingestion: Irritation of the mucous membranes of throat, esophagus and stomach which may result in nausea and vomiting; central nervous system depression may occur, if absorbed (see inhalation symptoms above). If aspirated, chemical pneumonitis may occur with potentially fatal results.

Carcinogenicity Statement: Kerosene is not listed as carcinogenic by NTP, OSHA, and ACGIH. IARC has listed kerosene as a probable human carcinogen (2A).

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with large amount of water for at least 15 minutes holding lids apart to ensure flushing of the entire eye surface. SEEK MEDICAL ATTENTION.

Skin: Wash contaminated areas with plenty of soap and water. A soothing ointment may be applied to irritated skin after thoroughly cleansing. Remove contaminated clothing and footwear. SEEK MEDICAL ATTENTION.

Inhalation: Get person out of contaminated area to fresh air. If breathing has stopped resuscitate and administer oxygen if readily available. SEEK MEDICAL ATTENTION IMMEDIATELY.

Ingestion: Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep airway clear. SEEK MEDICAL ATTENTION IMMEDIATELY.

Note to Physician: Do not induce vomiting, use gastric lavage only. Aspiration of liquid into the lungs could result in chemical pneumonitis. Use of adrenaline is not advised. Treat symptomatically.

Section 5 -

Fire Fighting Measures

Flash Point: 100°F PM (minimum)

Autoignition Temperature: 410°F

Flammable Limits In Air: UEL: 5% - LEL: 0.7%

Extinguishing Media: Use dry chemical, carbon dioxide, foam or water spray. Water may be ineffective in fighting fires of liquids with low flash points, but water should be used to keep fire exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect persons attempting to stop a leak.

Special Fire Fighting Procedures: Pressure-demand, self contained, breathing apparatus should be provided for fire fighters in buildings or confined areas where product is stored.

Unusual Fire And Explosion Hazard: Clothing, rags, or similar organic material contaminated with the product and stored in a closed space may undergo spontaneous combustion. Vapor accumulation is possible and flashback can occur with explosive force if vapors are ignited.

Section 6 -

Accidental Release Measures

If material is spilled, steps should be taken to contain liquid and prevent discharges to streams or sewer systems and control or stop the loss of volatile materials to the atmosphere. Spills or releases should be reported, if required to the appropriate local, state and federal regulatory agencies.

Small Spills: Remove ignition sources. Absorb spilled material with non-combustible materials such as cat litter, dirt, sand, or petroleum sorbent pads/pillows. Do not use combustible materials like rags, wood chips, or saw dust. Remove contaminated materials to an appropriate disposal container.

Large Spills: Remove ignition sources. Dike spill area with sand or dirt to contain material and cover sewers/drains. Remain upwind and keep unnecessary people away. Contact trained emergency response team for cleanup. Remove liquid using grounded suction pumps, isolate hazard area and deny entry.

Section 7 -

Handling and Storage

Store only in approved containers. Protect containers against physical damage. Outside or detached storage is preferred. Separate from oxidizing materials. Store in cool, well ventilated area of non-combustible construction away from possible sources of ignition. Keep away from incompatible materials and follow OSHA 29 CFR 1910.106 and NFPA 30 for storage requirements.

Product Use: This product is intended for use as a fuel in engines and heaters designed for kerosene or diesel fuels, and for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

Section 8 -

Exposure Controls, Personal Protection

Ventilation Requirements: Work in well ventilated areas using good engineering practices to process, transfer and store. Special ventilation is not required unless product is sprayed or heated. High volume use may require engineering controls.

Specific Personal Protective Equipment

Respiratory: Respiratory protection is not required unless product is sprayed or heated. Use NIOSH approved respiratory protection following manufacturer's recommendations where spray, mists, or vapors may be generated. Supplied air respiratory protection is required for IDLH areas. See 29 CFR 1910.134 for OSHA Respirator Protection regulations.

Eye: Face shield and goggles or chemical goggles should be worn where mist or spray may be generated, and where splashing occurs. Shower and eyewash facilities should be accessible.

Gloves: Impermeable protective gloves such as nitrile gloves should be worn during routine handling of this product. Barrier creams may also be appropriate where tactile sensitivity is required.

Other Clothing and Equipment: Clothing contaminated with this product should be removed and laundered before reuse. Items which can not be laundered should be discarded. Allow contaminated items to air dry or hang in a well ventilated area. Spontaneous combustion or fire may result from contaminated materials being placed together before drying.

Exposure Monitoring

Biological: No applicable procedure, breath analysis for hydrocarbons has been suggested.

Personal/Area: Monitor for kerosene using both active and passive monitors employing charcoal adsorption follow by gas chromatography. An average molecular weight of 170 has been suggested as the average value to convert the determined weight of hydrocarbons to ppm. Direct reading colorimetric tubes are available to evaluate short term exposure.

Section 9 -

Physical and Chemical Properties

Appearance and Odor: Colorless to pale straw, or red oily liquid with characteristic odor.

Viscosity: Specification dependent, 1.0-1.9 cSt @ 40°C for K1, 8.0 cSt max @ -4°C for Jet-A.

Boiling Range @ 760 mm Hg: 304-574°F (151-301°C)

Vapor Density (Air=1): 4.5

Evaporation Rate (BuAc=1): N/A

Specific Gravity (H2O=1): 0.80-0.81

Bulk Density At 60°F: 6.67 lbs./gal.

Solubility in H2O % by WT.: Insoluble

Freezing Point: 0°F (-18°C)

Vapor Pressure: 0.5 mmHg @ 20°C

% Volatiles By Vol.: N/A

API Gravity: Specification dependent

pH: NA

Section 10 -

Stability and Reactivity

Conditions Contributing to Instability: Under normal conditions, the material is stable. Avoid sources of ignition such as flames, hot surfaces, sparks, and electrical equipment.

Incompatibility: Avoid contact with strong oxidizers such as chlorine, fluorine, nitrogen tetroxide, concentrated oxygen, and sodium hypochlorite or other hypochlorites.

Hazardous Decomposition Products: Thermal decomposition products may include carbon monoxide, carbon dioxide, oxides of sulfur and nitrogen, and other toxic gases.

Hazardous Polymerization: Material is not known to polymerize.

Section 11 -

Toxicological Information

RTECS#:

CAS# 8008-20-6: OA5500000

LD50/LC50:

CAS# 8008-20-6:

Draize test, rabbit, skin: 500 mg Severe;

Draize test, rabbit, skin: 100%/24H Moderate;

Oral, rabbit: LD50 = 2835 mg/kg

Carcinogenicity:

CAS# 8008-20-6:

ACGIH: A3 - Animal Carcinogen (as total hydrocarbon vapor).

Epidemiology: Ingestion of kerosene has been known to produce rapid death by gross aspiration and occlusion of the respiratory system. Even when death does not occur promptly, there is abundant evidence that the pneumonia commonly seen in children who swallow kerosene usually results from aspiration. The aspiration usually occurs at the moment of ingestion or as the result of vomiting within the first hour.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Section 12 -

Ecological Information

Ecotoxicity: No data available. Bluegill (fresh water) TLm=2990ppm/24H

Environmental: Biological Oxygen Demand (BOD): 53%, 5 days.

Physical: No information available.

Other: None.

Section 13 -

Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 -

Transport Information

	US DOT	Canada TDG
Shipping Name	Kerosene	Kerosene
Hazard Class	3	3
UN Number	UN1223	UN1223
Packing Group	III	NA

Section 15 -

Regulatory Information

US FEDERAL

TSCA: CAS# 8008-20-6 is listed on the TSCA inventory.

Health & Safety Reporting List: None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules: None of the chemicals in this product are under a Chemical Test Rule.

Section 12b: None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule: None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs: None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances: None of the chemicals in this product have a TPQ.

SARA Codes: CAS # 8008-20-6: acute, flammable.

Section 313: No chemicals are reportable under Section 313.

Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE: CAS# 8008-20-6 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases: R 65 Harmful: may cause lung damage if swallowed.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 24 Avoid contact with skin.

S 62 If swallowed, do not induce vomiting, seek medical advice immediately and show this container or label.

WGK (Water Danger/Protection)

CAS# 8008-20-6: No information available.

Canada - DSL/NDSL

CAS# 8008-20-6 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

Canadian Ingredient Disclosure List

Exposure Limits

Section 16 -

Additional Information

MSDS Creation Date: 08/12/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall VEE GEE Scientific be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if VEE GEE Scientific has been advised of the possibility of such damages.