

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

SECTION 1: Identification

Product Identifier	Kerosene
Other means of identification	1K Kerosene; Dyed Kerosene; K1 Kerosene; K1 Kerosene LS; K1 Super Kerosene LS; K2 Kerosene; Kerosine; Ultra Low Sulfur Kerosene; Straight Run Kerosene; Kero 153; Kero LS 04; Kero LS 047; Kero ULS 001
SDS Number	310
MARPOL Annex I Category	Kerosenes
Relevant identified uses	Fuel
Uses advised against	All others
24 Hour Emergency Phone Number	CHEMTREC 1-800-424-9300 CANUTEC 613-996-6666 CHEMTREC Mexico 01-800-681-9531

Supplied for:	SDS Information
RelaDyne	Phone: 888-830-3156
9395 Kenwood Rd,	Email: sales@reladyne.com
Suite 104	URL: www.reladyne.com
Blue Ash, OH 45242	

SECTION 2: Hazard identification

Classified Hazards

H226 - Flammable liquids -- Category 3
H304 -- Aspiration Hazard -- Category 1
H315 -- Skin corrosion/irritation -- Category 2
H336 -- Specific target organ toxicity (single exposure) -- Category 3
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2

Hazards Not Otherwise Classified (HNOC)

PHNOC: Electrostatic charge may be generated during pumping and other operations

HHNOC: None known

Label Elements



DANGER

Flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
May cause drowsiness or dizziness
Toxic to aquatic life with long lasting effects



Keep away from heat/sparks/open flames/hot surfaces. - No smoking; Ground/bond container and receiving equipment; Use only non-sparking tools; Take precautionary measures against static discharge; Avoid breathing dust/fume/gas/mist/vapours/spray; Wash skin thoroughly after handling; Use only outdoors or in a well-ventilated area; Avoid release to the environment; Wear protective gloves/protective clothing and eye/face protection; IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician; Do NOT induce vomiting; IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower; IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing; Call a POISON CENTER or doctor/physician if you feel unwell; Take off contaminated clothing and wash before reuse; In case of fire: Use CO2, dry chemical, or foam for extinction; Store in a well-ventilated place. Keep container tightly closed; Dispose of contents/container to an approved waste disposal plant



SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration ¹
Petroleum distillates, hydrotreated light	64742-47-8	0-100
Kerosine, petroleum, hydrodesulfurized	64742-81-0	0-100
Kerosine, petroleum	8008-20-6	0-100
Naphthalene	91-20-3	<3
Ethylbenzene	100-41-4	<1

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Most important symptoms and effects, both acute and delayed: While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting. Prolonged or repeated contact may dry skin and cause irritation

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 1 Flammability: 2 Instability: 0



0 (Minimal)

- 1 (Slight)
- 2 (Moderate)
- 3 (Serious)
- 4 (Severe)

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe) Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

Special protective actions for firefighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Static Accumulation Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that special slow load procedures for "switch loading" are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Chemical Name	ACGIH	OSHA	Other
Petroleum distillates, hydrotreated light	TWA: 200 mg/m ³ Skin	---	200 mg/m ³ TWA8hr 100 mg/m ³ TWA12hr 28 ppm TWA8hr 14 ppm TWA12hr (Phillips 66 Guidelines)
Kerosine, petroleum, hydrodesulfurized	TWA: 200 mg/m ³ Skin	---	200 mg/m ³ TWA8hr 100 mg/m ³ TWA12hr 28 ppm TWA8hr 14 ppm TWA12hr (Phillips 66 Guidelines)
Kerosine, petroleum	TWA: 200 mg/m ³ Skin	---	200 mg/m ³ TWA8hr 100 mg/m ³ TWA12hr 28 ppm TWA8hr 14 ppm TWA12hr (Phillips 66 Guidelines)
Naphthalene	TWA: 10 ppm Skin	TWA: 10 ppm : 50 mg/m ³	---
Ethylbenzene	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m ³	20 ppm TWA8hr 10 ppm TWA12hr 87 mg/m ³ TWA8hr 43.5 mg/m ³ TWA12hr (Phillips 66 Guidelines)

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance: Clear, light yellow or light green (may be dyed red) **Flash Point:** 100 - 150 °F / 38 - 66 °C

Physical Form: Liquid

Odor: Kerosene

Odor Threshold: No data

pH: Not applicable

Vapor Density (air=1): > 4.5

Upper Explosive Limits (vol % in air): 7.0

Lower Explosive Limits (vol % in air): 0.7

Evaporation Rate (nBuAc=1): <1

Particle Size: Not applicable

Percent Volatile: 98-100% @ 545°F (285°C)

Flammability (solid, gas): Not applicable

Test Method: Tag Closed Cup (TCC), ASTM D56

Initial Boiling Point/Range: 300 - 572 °F / 149 - 300 °C

Vapor Pressure: 0.40 mm HG

Partition Coefficient (n-octanol/water) (Kow): No data

Melting/Freezing Point: < -40 °F / < -40 °C

Auto-ignition Temperature: 410 °F / 210 °C

Decomposition Temperature: No data

Specific Gravity (water=1): 0.775-0.840 @ 68°F (20°C)

Bulk Density: 6.73 lbs/gal

Viscosity: 1-2.4 cSt @ 40°C

Solubility in Water: <0.1%

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5.2 mg/L (mist)
Dermal	Unlikely to be harmful		> 2 g/kg
Oral	Unlikely to be harmful		> 5 g/kg

Aspiration Hazard: May be fatal if swallowed and enters airways

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause organ effects from repeated exposure.

Carcinogenicity: Not expected to cause cancer.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity. Hydrodesulfurized kerosene applied to the skin of female rats at 494, 330, or 165 mg/kg daily for 7 consecutive weeks (pre-mating, mating, and gestation), or for 8 consecutive weeks in males did not result in systemic, reproductive, or developmental toxicity.

Other Comments: Naphthalene has been shown to cause cataracts in humans upon eye contact with vapors or dusts, and upon ingestion or inhalation in laboratory animals.

Information on Toxicological Effects of Components

Naphthalene

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

Ethylbenzene

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC.

Target Organ(s): In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilic foci, hypertrophy, necrosis), lung (alveolar epithelium metaplasia), thyroid (hyperplasia), thyroid (hyperplasia) and pituitary (hyperplasia). In animal models (particularly rats), ethyl benzene affects the auditory function mainly in the cochlear mid-frequency range and ototoxicity was observed after combined exposure to noise and ethyl benzene. There is no evidence of either ethyl benzene-induced hearing losses or ototoxicity with combined exposure to ethyl benzene and noise in workers.

SECTION 12: Ecological information



GHS Classification:
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2
Toxic to aquatic life with long lasting effects.

Toxicity: Acute aquatic toxicity studies on samples of jet fuel and kerosine streams show acute toxicity values greater than 1 mg/L and mostly in the range 1-100 mg/L. These tests were carried out on water accommodated fractions, in closed systems to prevent evaporative loss. Results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon composition. Kerosines should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganisms.

Persistence per IOPC Fund definition: Non-Persistent

Bioaccumulative Potential: Hydrocarbon constituents of kerosine show measured or predicted Log Kow values ranging from 3 to 6 and above and therefore would be regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: On release to water, hydrocarbons will float on the surface and since they are sparingly soluble, the only significant loss is volatilization to air. It is possible that some of the higher molecular weight hydrocarbons will be adsorbed on sediment. Biodegradation in water is a minor loss process. In air, these hydrocarbons are photodegraded by reaction with hydroxyl radicals with half lives varying from 0.1 to 0.7 days.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste. Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

EPA Waste Number(s)

- D001 - Ignitability characteristic

SECTION 14: Transport information

U.S. Department of Transportation (DOT)

UN Number: UN1223

UN proper shipping name: Kerosene,

Transport hazard class(es): 3; *or*; Combustible liquid

Packing Group: III

Environmental Hazards: Marine pollutant - Environmentally Hazardous

Special precautions for user: ***Combustible liquid classification is dependent on a flash point of >60° C (140° F) and <93° C (200° F).***

If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.

Container(s) greater than 5 liters (liquids) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(l)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health Hazard: Yes
Chronic Health Hazard: Yes

Fire Hazard: Yes
Pressure Hazard: No
Reactive Hazard: No

CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40CFR 372:

Chemical Name	Concentration ¹	de minimis
Naphthalene	<3	0.1%
Ethylbenzene	<1	0.1%

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

EPA (CERCLA) Reportable Quantity (in pounds):

This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65:

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the warning requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Chemical Name	Type of Toxicity
Naphthalene	Cancer
Ethylbenzene	Cancer
Toluene	Developmental Toxicant
Benzene	Cancer Developmental Toxicant Male Reproductive Toxicant

Canada:

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

International Inventories

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

SECTION 16: Other information

Issue Date:	Previous Issue Date:	SDS Number	Status:
02-Dec-2015	19-Mar-2015	682950	FINAL

Revised Sections or Basis for Revision:

Composition (Section 3); Exposure limits (Section 8); Regulatory information (Section 15)

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

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