* The ACGIH has proposed adopting an exposure limit of 100 mg/m3 for Diesel fuel/Kerosene. NIOSH has also proposed 100 mg/m3 for an 8 hr. TWA or~14 ppm 8 hr. TWA, based on an average molecular weight of 170 for kerosene like fractions. Product may contain traces of sulfur and benzene.

3. Hazards Identification

Health Hazard Data:

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.

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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 aggraved by exposure to this product.

Medical Limitation: N/A

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).

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.

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5. Fire and Explosion Data

Flash Point: 100 degrees F PM (minimum)
Autoignition Temperature: 410 degrees 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.

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.

7. Handling and Storage Information

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.

8. Exposure Controls/Personal Protection

Ventilation Requirements: Work in well ventilated areas using good engineering practices to process, transfer and store. Special ventilation in 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 manufacture'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.

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 degrees C for K1, 8.0 cSt max @ -4 degrees C for Jet-A.
Boiling Range @ 760 mm Hg: 304-574 degrees F (151-301 degrees 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 degrees F: 6.67 lbs./gal.

Solubility in H2O % by WT.: Insoluble
Freezing Point: 0 degrees F (-18 degrees C)
Vapor Pressure: 0.5 mmHg @ 20 degrees C
% Volatiles By Vol.: N/A
API Gravity: Specification dependent
pH: NA

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10. Stability and Reactivity Information

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 tetraoxide, 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.

11. Toxicological Information

For detailed information, contact MSDS Assistance at (210) 592-4593

12. Ecological Information

For detailed information, contact MSDS Assistance at (210) 592-4593

13. Disposal Considerations

Shipment, storage, disposal, and cleanup actions of waste materials are regulated under local, state and federal rules. Contact the appropriate agencies if uncertain of applicability. Waste product and contaminated material having a flash point below 140 degrees F is considered a hazardous waste. DOT Hazardous Waste Number D001 applies. Consult 40 CFR 262 for EPA disposal requirements.

14. Transport Information

DOT Proper Shipping Name	Kerosene	Diesel Fuel	Fuel, aviation, turbine engine
DOT Hazard Class*	3*	3*	3*
DOT Packing Group (PG)	III	III	III
I.D. Number	UN 1223*	NA 1993	UN 1863*
Required Labeling	Flammable Liquid	Flammable Liquid	Flammable Liquid

* Since this product has a flash point >100 degrees F and no other hazard class

applies, it may be reclassed as Combustible Liquid and NA 1993 substituted for the product specific I.D.

Number above. Consult 49 CFR 173.120 for specific details.

15. Regulatory Information

TSCA (Toxic Substance Control Act) Inventory

Gasoline is listed in the TSCA inventory.

SARA (Superfund Amendments and Reauthorization Act) TITLE III

This product is reportable under SARA Title III, Sections 311 & 312 as a hazardous substance.

Hazard Categories Applicable under 40 DFR 370.2 (SARA Section 311):

Acute Health	Chronic Health	Pressure	Fire	Reactive
Yes	Yes	No	Yes	No

Components Listed under 40 CFR 372.2 (SARA Section 311):

This product does not contain chemicals identified as toxic by EPA under CFR part 372 and is not subject to the reporting requirements of this section.

State Regulations:

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

16. Other Information

NFPA (National Fire Protection Association) Hazard Ratings Codes*

Fire	Health	Reactivity	Other
2	1	0	Blank

*Based on Standard System for the Identification of the Fire Hazards of Materials, NFPA No. 704 M

This material safety data sheet was prepared by T. W. Brown Oil Co., Inc. in

accordance with 29 CFR 1910.1200. All information, recommendations and suggestions appearing herein concerning this product are based upon tests and data believed to be reliable, however, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made by T. W. Brown Oil Co., Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of the product nor does T. W. Brown Oil Co., Inc. assume any liability arising out of use by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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MATERIAL SAFETY DATA SHEET essentially similar to form OSHA - 174

KELLY-MOORE Paint Company, Inc.
987 Commercial Street, San Carlos, California 94070
INFORMATION PHONE: 650-592-8337 EMERGENCY: 800-424-9300 (Chemtrec)

I - PRODUCT IDENTIFICATION

PRODUCT NAME	PRODUCT NUMBER	HMIS CODES: H F R PP
KEL-COTE ALKYD SEMI-GLOSS ENAMEL	1630-series (all colors)	1 2 0 I

II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS REG #	WT PCT	EXPOSURE LIMITS TLV-ACGIH	EXPOSURE LIMITS PEL-OSHA	VAPOR PRESSURE MM HG @ 68° F
SOLVENT NAPHTHA. MEDIUM ALIPHATIC	64742-88-7	< 35 %	100 ppm	500 ppm	2.0

Also known as mineral spirits. a commercial petroleum distillate that contains a mixture of naphthenes. paraffins and alkylbenzenes.

III - PHYSICAL PROPERTIES

BOILING RANGE: > 300° F DENSITY: 10 - 11 # / gal PERCENT VOLATILE: 46 - 52 % (by volume)

VOC of material (Pounds per gallon): < 3.2 VOC (Grams per liter less water): < 380

VAPOR DENSITY: heavier than air EVAPORATION RATE: slower than ether

IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: Combustible liquid / class II

FLASH POINT: 100 - 110° F LEL: 1.0 % UEL: n/a

EXTINGUISHING MEDIA: Use approved class B fire extinguisher or extinguishing agents such as CO_2, foam etc.

FIRE AND EXPLOSION HAZARDS: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. Do not apply to hot surfaces. Vapors may travel along the ground and be ignited at distant locations with possible flashback to the handling site.

SPECIAL FIRE FIGHTING PROCEDURES: Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed container to prevent pressure buildup. Water spray or water fog should be used carefully in fire fighting. This product will float on water and can be ignited on the water surface.

PREPARED BY: George Hunt DATE: 9/22/99 SII

KELLY-MOORE PAINT CO

F-1

V - REACTIVITY DATA

STABILITY: Stable CONDITIONS TO AVOID: High temperatures, ignition sources

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents

HAZARDOUS POLYMERIZATION: Will Not Occur

HAZARDOUS DECOMPOSITION PRODUCTS: May produce hazardous fumes when heated to decomposition or combustion as in welding or fire.

VI - HEALTH HAZARD DATA

- SYMPTOMS/EFFECTS OF EXPOSURE AND OVEREXPOSURE -

PRIMARY ROUTES OF ENTRY: Inhalation, Skin and Eye Contact, Ingestion.

ACUTE: Dizziness, headache, nausea, confusion, irritation to upper respiratory tract, unconsciousness, skin & eye irritation. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

CHRONIC: Prolonged exposure to high vapor concentrations may result in kidney or liver damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Respiratory conditions such as bronchitis, asthma, emphysema or allergies may be aggravated by exposure to spray mist or solvent vapors. See your physician for specific medical opinion regarding your condition.

- EMERGENCY AND FIRST AID PROCEDURES -

INHALATION: Remove to fresh air. Restore breathing. Consult physician.

EYE CONTACT: Flush with large volumes of water for 15 minutes. Get medical attention.

SKIN CONTACT: Wipe off with a rag. Wash thoroughly with soap and water.

INGESTION: Consult hospital emergency room or Poison Control Center immediately.

VII - PRECAUTIONS FOR HANDLING & USE

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED: Extinguish all sources of ignition. Ventilate area to prevent build-up of vapors that may accumulate in low areas. For larger spills, dike area with absorbent material and scoop up with non-sparking tools. Soak up small spills with absorbent.

WASTE DISPOSAL METHOD: Dispose in accordance with local, state and federal regulations, preferably by incineration in an approved facility. Do not incinerate in closed containers.

HANDLING AND STORAGE PRECAUTIONS: Store upright in sealed containers away from sources of heat and flame.

OTHER PRECAUTIONS: This product contains pigments which like most naturally occurring minerals contain small amounts of crystalline silica. This presents no hazard when applying the coating, but sanding it will cause a dust hazard. IARC has determined that if you breath crystalline silica as a dust you could get cancer. The control measures in Section VIII should be followed when you sand this product and most other paints and building materials such as spackles and dry wall compounds.

Remove and wash contaminated clothing before reuse. Discard contaminated shoes.

VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: Use a particle mask (NIOSH/MSHA TC-21C) to avoid breathing spray mist or sanding dust if local ventilation is adequate to keep concentrations within acceptable (TLV) limits. If local ventilation is not sufficient, or where exposure limits are exceeded, wear a suitable, properly fitted respirator (NIOSH/MSHA TC-23C or better) for organic vapors with a dust filter as needed.

VENTILATION: Local cross-ventilation or mechanical exhaust sufficient to keep all hazardous vapor concentrations below prescribed limits.

PROTECTIVE GLOVES: Neoprene or other chemical-resistant rubber or plastic.

EYE PROTECTION: Glasses with side shields or chemical goggles are recommended to prevent eye contact.

NOTE: THIS INFORMATION IS BELIEVED TO BE COMPLETE AND ACCURATE. IF ANY QUESTIONS ARISE, CONTACT MANUFACTURER LISTED ABOVE.

SII

MSDS
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Material Safety Data Sheet for Kerosene

1. Chemical Product

MSDS Number: U8012

MSDS Date: 01-31-99

Product Name: Kerosene

24 Hour Emergency Phone: (210) 979-8346
Transportation Emergencies: Call Chemtrec at 1-800-424-9300
MSDS Assistance: (210) 592-4593

Distributors Name and Address:

T.W. Brown Oil Co., Inc.
1857 Knoll Drive
Ventura, California 93003

Chemical Name: Kerosene **Cas Number:** 8008-20-6

Synonyms/Common Names: This Material Safety Data Sheet applies to the following product descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the product, and are not reflected in this document. Consult specification sheets for technical information.

Kerosene	Dyed K-1 Kerosene	Dyed Highway #1 Diesel
K1-Kerosene	JP-5	#1 Diesel Fuel, On-Road
Jet-A Turbine Fuel	JP-8	On-Highway #1 Diesel
Jet-Q Turbine Fuel	Turbine Fuel	Off-Road #1 Diesel
Low Aromatic Feedstock		

2. Composition, Information On Ingredients

Description: Kerosene is a complex mixture of hydrocarbons from a variety of chemical processes blended to meet standardized product specifications. Composition varies greatly and includes C9 to C16 hydrocarbons with a boiling range of about 300-550 degrees F. The following is a non-exhaustive list of common components, typical percentage ranges in product, and occupational exposure limits for each. Functional and performance additives may also be present at concentrations below reporting thresholds.

Component or Material Name	%	CAS Number	ACGIH Limits TLV -- STEL -- Units	OSHA Exposure Limits PEL -- STEL -- C/P -- Units
Hydrodesulfurized Kerosene	0-100	64742-81-0	100* -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Hydrotreated distillate light	0-100	64742-47-8	100* -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A
Kerosene, straight run	0-100	8008-20-6	100* -- NA -- mg/m3	N/A -- N/A -- N/A -- N/A