

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Issue date: 1/4/2023 Revision date: 1/4/2023 Supersedes: 10/26/2022 Version: 2.0

SECTION 1: Identification

SECTION 1: Identification	
1.1. Identification	
Product form Trade name Chemical name CAS-No. Product code	 Substance Rocket Propellant Kerosene 8008-20-6 HF0229, HF0697, HF2082
1.2. Recommended use and restrictions on	use
Use of the substance/mixture	: Fuel for engine development and testing
1.3. Supplier	
Manufacturer Haltermann Solutions™ 15600 West Hardy Rd. Houston, TX, 77060 USA T 1-800-969-2542 - F 281-457-1469	
1.4. Emergency telephone number	
Emergency number	: 24 HR CHEMTREC: 1-800-424-9300; Emergency Assistance: 1-800-969-2542 (8 AM to 5 PM CDT)
SECTION 2: Hazard(s) identification	
2.1. Classification of the substance or mixtu	Ire
GHS US classification Flammable liquids Category 4 Aspiration hazard Category 1 Full text of H statements : see section 16	H227 Combustible liquid H304 May be fatal if swallowed and enters airways
2.2. GHS Label elements, including precauti	ionary statements
GHS US labeling	
Hazard pictograms (GHS US)	
Signal word (GHS US) Hazard statements (GHS US) Precautionary statements (GHS US)	 Danger H227 - Combustible liquid H304 - May be fatal if swallowed and enters airways P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER. P202 - De NOT induce compilier
	 P331 - Do NOT induce vomiting. P370+P378 - In case of fire: Use carbon dioxide (CO2), alcohol resistant foam, dry extinguishing powder to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up.

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P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Chemical name	:	Kerosene
CAS-No.	:	8008-20-6

Name	Product identifier	%
Kerosene	CAS-No.: 8008-20-6	100
Petroleum distillates, hydrotreated light	CAS-No.: 64742-47-8	70 – 100
Solvent naphtha, petroleum, medium aliphatic	CAS-No.: 64742-88-7	0 – 30
Full text of hazard classes and H-statements : see section 16	•	

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures	
4.1. Description of first aid measures	
First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician. Do not induce vomiting. Call a physician immediately.
4.2. Most important symptoms and effects	s (acute and delayed)
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects after ingestion	: Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures	
5.1. Suitable (and unsuitable) extinguishing	y media
Suitable extinguishing media Unsuitable extinguishing media	Foam. Dry powder. Carbon dioxide. Water spray. Sand.Do not use a heavy water stream.
5.2. Specific hazards arising from the chem	nical
Fire hazard Explosion hazard Hazardous decomposition products in case of fire	 Combustible liquid. May form flammable/explosive vapor-air mixture. Toxic fumes may be released.
5.3. Special protective equipment and prec	autions for fire-fighters
Firefighting instructions Protection during firefighting	 Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measure	S
6.1. Personal precautions, protective equipm	nent and emergency procedures
General measures	Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
6.1.1. For non-emergency personnel	
Emergency procedures	Ventilate spillage area. Evacuate unnecessary personnel. No open flames, no sparks, and no smoking.
6.1.2. For emergency responders	
Protective equipment	Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	Ventilate area.
6.2. Environmental precautions	

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containmer	nt and cleaning up
Methods for cleaning up	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.
6.4. Reference to other sections	

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage	
7.1. Precautions for safe handling	
Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces No smoking.

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Precautions for safe handling	: Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
7.2. Conditions for safe storage, including	any incompatibilities
Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Keep in fireproof place. Store in a well-ventilated place. Keep cool. Store locked up.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Kerosene (8008-20-6)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Kerosene/Jet fuels, as total hydrocarbon vapor
ACGIH OEL TWA	200 mg/m³ (application restricted to conditions in which there are negligible aerosol exposures- total hydrocarbon vapor (Kerosene/Jet fuels)
Remark (ACGIH)	Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure)
USA - NIOSH - Occupational Exposure Limits	·
NIOSH REL (TWA)	100 mg/m ³
Petroleum distillates, hydrotreated light (6474	2-47-8)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) [2]	500 ppm
Solvent naphtha, petroleum, medium aliphatic	: (64742-88-7)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) [2]	500
8.2. Appropriate engineering controls	
	Ensure good ventilation of the work station. Avoid release to the environment.
8.3. Individual protection measures/Personal p	protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

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Hand protection:
Near protective gloves.
Eye protection:
Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Near suitable protective clothing
Respiratory protection:
Near respiratory protection.

Personal protective equipment symbol(s):



Other information: Do not eat, drink or smoke during use.

9.1. Information on basic physical and ch	iemical properties
Physical state	: Liquid
Appearance	: Clear, colorless to pale yellow liquid.
Color	: Colourless to light yellow
Odor	: mild
Odor threshold	: No data available
рН	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 170 – 365 °F
Flash point	: 140 – 200 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: 4.5
Relative density	: 33 - 42 °API
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: 410 °F
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 0.7 – 5 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Combustible liquid. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects		
Acute toxicity (dermal)	Not classified Not classified Not classified	
Kerosene (8008-20-6)		
LD50 oral rat	> 5000 mg/kg	
LD50 dermal rabbit	> 2000 mg/kg	
LC50 Inhalation - Rat	> 5.28 mg/l/4h	
Petroleum distillates, hydrotreated light (64742-47-8)		
LD50 oral rat	> 5000 mg/kg	
LD50 dermal rabbit	> 2000 mg/kg	
LC50 Inhalation - Rat	> 5.2 mg/l/4h	
Solvent naphtha, petroleum, medium aliphatic (64742-88-7)		
LD50 oral rat	> 25 ml/kg	
LD50 dermal rabbit	> 4000 mg/kg	
LC50 Inhalation - Rat	> 5.28 mg/l/4h	
Skin corrosion/irritation :	Not classified	
Serious eye damage/irritation :	Not classified	
Respiratory or skin sensitization :	Not classified	
Germ cell mutagenicity :	Not classified	
Carcinogenicity :	Not classified	

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Solvent naphtha, petroleum, medium aliphatic (64742-88-7)		
National Toxicology Program (NTP) Status Evidence of Carcinogenicity		
Reproductive toxicity	Not classified	
STOT-single exposure	: Not classified	
STOT-repeated exposure	: Not classified	
Aspiration hazard	: May be fatal if swallowed and enters airways.	
Viscosity, kinematic	: No data available	
Potential Adverse human health effects and	: Based on available data, the classification criteria are not met.	
symptoms		
Symptoms/effects after ingestion	: Risk of lung edema.	

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general

: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Petroleum distillates, hydrotreated light (64742-47-8)			
LC50 - Fish [1]	45 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])		
LC50 - Fish [2]	2.2 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])		
Solvent naphtha, petroleum, medium aliphatic (64742-88-7)			
LC50 - Fish [1]	800 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])		
EC50 - Crustacea [1]	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)		
EC50 96h - Algae [1]	450 mg/l (Species: Pseudokirchneriella subcapitata)		

12.2. Persistence and degradability

Kerosene (8008-20-6)		
Persistence and degradability	Not established.	
12.3. Bioaccumulative potential		
Kerosene (8008-20-6)		
Bioaccumulative potential	Not established.	
Petroleum distillates, hydrotreated light (64742-47-8)		
BCF - Fish [1] 61 – 159		
Solvent naphtha, petroleum, medium aliphatic (64742-88-7)		
BCF - Fish [1] (bioaccumulation expected)		

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information

: Avoid release to the environment.

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SECTION 13: Disposal considerations	
13.1. Disposal methods	
Waste treatment methods Product/Packaging disposal recommendations	 Dispose of contents/container in accordance with licensed collector's sorting instructions. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information Ecology - waste materials	 Handle empty containers with care because residual vapors are flammable. Avoid release to the environment. Hazardous waste due to toxicity.
SECTION 14: Transport information	
In accordance with DOT / IMDG / IATA	
14.1. UN number	
DOT NA No UN-No. (IMDG) UN-No. (IATA)	: UN1223 : 1223 : 1223
14.2. UN proper shipping name	
Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) Transport document description (DOT) Transport document description (IMDG) Transport document description (IATA)	 Kerosene KEROSENE Kerosene UN1223 Kerosene, 3, III UN 1223 KEROSENE, 3, III UN 1223 Kerosene, 3, III
14.3. Transport hazard class(es)	
DOT Transport hazard class(es) (DOT) Hazard labels (DOT)	: 3 : 3
IMDG Transport hazard class(es) (IMDG) Hazard labels (IMDG)	
IATA Transport hazard class(es) (IATA) Hazard labels (IATA)	: 3 : 3

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14.4. Packing group	
Packing group (DOT) Packing group (IMDG) Packing group (IATA)	: III : III : III
14.5. Environmental hazards	
Other information	: Transportation Notes: Material is not regulated by the U.S. DOT for ground transportation within the U.S. if shipped in non-bulk packaging (<119 gallons).
14.6. Special precautions for user	
DOT UN-No.(DOT) DOT Special Provisions (49 CFR 172.102)	 UN1223 144 - If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter. B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of Iess than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T2 - 1.5 178.274(d)(2) Normal
DOT Packaging Exceptions (49 CFR 173.xxx) DOT Packaging Non Bulk (49 CFR 173.xxx) DOT Packaging Bulk (49 CFR 173.xxx) DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) DOT Vessel Stowage Location	: 220 L : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a
IMDG Special provision (IMDG) Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) IBC packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG)	 passenger vessel. 363 5 L E1 P001, LP01 IBC03 T2 TP2 F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS S-E - SPILLAGE SCHEDULE Echo - FLAMMABLE LIQUIDS, FLOATING ON WATER A

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Properties and observations (IMDG)	: Immiscible with water.
IATA	
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y344
PCA limited quantity max net quantity (IATA)	: 10L
PCA packing instructions (IATA)	: 355
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 366
CAO max net quantity (IATA)	: 220L
Special provision (IATA)	: A324
ERG code (IATA)	: 3L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Kerosene (8008-20-6)

Listed on the Canadian DSL (Domestic Substances List)

Petroleum distillates, hydrotreated light (64742-47-8)

Listed on the Canadian DSL (Domestic Substances List)

Solvent naphtha, petroleum, medium aliphatic (64742-88-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Kerosene (8008-20-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Petroleum distillates, hydrotreated light (64742-47-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Solvent naphtha, petroleum, medium aliphatic (64742-88-7)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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National regulations

Kerosene (8008-20-6)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Listed on the NCI (Vietnam - National Chemical Inventory)

Petroleum distillates, hydrotreated light (64742-47-8)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Listed on the NCI (Vietnam - National Chemical Inventory)

Solvent naphtha, petroleum, medium aliphatic (64742-88-7)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Listed on the NCI (Vietnam - National Chemical Inventory)

15.3. US State regulations

Kerosene (8008-20-6)		
	U.S New Jersey - Right to Know Hazardous Substance List U.S Pennsylvania - RTK (Right to Know) List U.S Massachusetts - Right To Know List	

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and RegulationsRevision date: 1/4/2023Other information: None.

Full text of H-phrases		
H227	Combustible liquid	
H304	H304 May be fatal if swallowed and enters airways	

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NFPA health hazard	: 1 - Materials that, under emergency conditions, can cause significant irritation.	
NFPA fire hazard	2 - Materials that must be moderately heated or exposed to relatively	
NFPA reactivity	 high ambient temperatures before ignition can occur. 0 - Material that in themselves are normally stable, even under fire 	
	conditions.	

Indication of changes:			
Section	Changed item	Change	Comments
	Issue date	Modified	No additional information available
	Revision date	Modified	No additional information available
	Supersedes	Modified	No additional information available
9	Flash point	Modified	No additional information available

Safety Data Sheet (SDS), USA

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