SAFETY DATA SHEET

1. Identification

Product identifier	**Type aviation turbine fuel**
Other means of identification	
SDS number	8521
Synonyms	Jet A1 Fuel, Jet A, Jet Fuel, Kerosine
Recommended use	Fuel
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer/Supplier	Énergie Valero Inc. 1801 McGill College, 13e étage Montreal, Quebec H3A 2N4
General Information	1-800-295-0391
24-Hour Emergency	Canutec (613) 996-6666
New Brunswick Poison Information Center	(506) 857-5555
Newfoundland Poison Control Center	(709) 722-1110
Nova Scotia / PEI Poison Control Center	1-800-565-8161
Ontario Regional Poison Information Center	1-800-267-1373 (Ottawa) 1-800-268-9017 (Toronto)
Quebec Poison Control Center	1-800-463-5060

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
	Physical hazards not otherwise classified	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Specific target organ toxicity following single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

Label elements

Signal word	Danger
Hazard statement	Flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. Toxic if inhaled. May cause drowsiness or dizziness. Toxic to aquatic life with long lasting effects. Presents a physical hazard which is not otherwise classified.

Precautionary statements

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use non-sparking tools and explosion-proof equipment. Explosion-proof general and local exhaust ventilation. Keep container tightly closed. When using, do not eat, drink or smoke. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Take precautionary measures against static discharges. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid breathing mist or vapour. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Rinse mouth. Do NOT induce vomiting. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Call a POISON CENTRE/doctor. In case of fire: Use appropriate media to extinguish. Collect spillage.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	Static Accumulating Liquid. Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Kerosine (petroleum)	8008-20-6	0 - 100
Kerosine, (petroleum), hydrosulfurized	64742-81-0	0 - 100

Constituents	CAS number	%
Xylene	1330-20-7	≤ 1
Naphthalene	91-20-3	0 - 0.3
Toluene	108-88-3	≤ 0.2
Ethylbenzene	100-41-4	≤ 0.1

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

Composition comments Occupational Exposure Limits for constituents are listed in Section 8. Jet Fuel 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 160- 300°C.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTRE or doctor/physician if you feel unwell. Get medical attention.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops or persists. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Wash clothing separately before reuse. Remove contaminated clothing and shoes. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control centre immediately. Rinse mouth thoroughly. Get medical attention immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary oedema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhoea. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. The toxicological properties of this material have not been fully investigated.
General information	Take off all contaminated clothing immediately. If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discolouration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Move containers from fire area if you can do so without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
Specific methods	In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Flammable liquid and vapour.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Use only with adequate ventilation. Do not taste or swallow. Avoid breathing mist or vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
The product is combustible, and heating may generate vapours which may form explosive vapour/air mixtures.

Conditions for safe storage, including any incompatibilities

Store locked up. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see section 10 of the SDS). Flammable liquid storage. Keep container tightly closed in a cool, well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value	Form
Type aviation turbine fuel	TWA	200 mg/m3	Non-aerosol.

Components	Type	Value	Form
Kerosine (petroleum) (CAS 8008-20-6)	TWA	200 mg/m3	Non-aerosol.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	TWA	200 mg/m3	Non-aerosol.

Constituents	Type	Value
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Naphthalene (CAS 91-20-3)	TWA	10 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Material	Type	Value	Form
Type aviation turbine fuel	TWA	200 mg/m3	Vapour.

Components	Type	Value	Form
Kerosine (petroleum) (CAS 8008-20-6)	TWA	200 mg/m3	Vapour.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	TWA	200 mg/m3	Vapour.

Constituents	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	543 mg/m3
		125 ppm
	TWA	434 mg/m3
		100 ppm
Toluene (CAS 108-88-3)	TWA	188 mg/m3
		50 ppm
Naphthalene (CAS 91-20-3)	STEL	79 mg/m3
		15 ppm
	TWA	52 mg/m3
		10 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Constituents	Type	Value
Xylene (CAS 1330-20-7)	STEL	651 mg/m3
		150 ppm
	TWA	434 mg/m3
		100 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Material	Type	Value	Form
Type aviation turbine fuel	TWA	200 mg/m3	Non-aerosol.

Components	Type	Value	Form
Kerosine (petroleum) (CAS 8008-20-6)	TWA	200 mg/m3	Non-aerosol.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	TWA	200 mg/m3	Non-aerosol.

Constituents	Type	Value
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Naphthalene (CAS 91-20-3)	STEL	15 ppm
	TWA	10 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Material	Type	Value	Form
Type aviation turbine fuel	TWA	200 mg/m3	Non-aerosol.

Components	Type	Value	Form
Kerosine (petroleum) (CAS 8008-20-6)	TWA	200 mg/m3	Non-aerosol.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	TWA	200 mg/m3	Non-aerosol.

Constituents	Type	Value
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Naphthalene (CAS 91-20-3)	TWA	10 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Material	Type	Value	Form
Type aviation turbine fuel	TWA	200 mg/m3	Non-aerosol.

Components	Type	Value	Form
Kerosine (petroleum) (CAS 8008-20-6)	TWA	200 mg/m3	Non-aerosol.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	TWA	200 mg/m3	Non-aerosol.

Constituents	Type	Value
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Naphthalene (CAS 91-20-3)	STEL	15 ppm
	TWA	10 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Constituents	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	543 mg/m3
		125 ppm
	TWA	434 mg/m3
		100 ppm
Toluene (CAS 108-88-3)	TWA	188 mg/m3
		50 ppm
Naphthalene (CAS 91-20-3)	STEL	79 mg/m3
		15 ppm
	TWA	52 mg/m3
		10 ppm
Xylene (CAS 1330-20-7)	STEL	651 mg/m3
		150 ppm
	TWA	434 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Constituents	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Naphthalene (CAS 91-20-3)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Kerosine (petroleum) (CAS 8008-20-6)	Can be absorbed through the skin.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.
Toluene (CAS 108-88-3)	Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Kerosine (petroleum) (CAS 8008-20-6)	Can be absorbed through the skin.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Kerosine (petroleum) (CAS 8008-20-6)	Can be absorbed through the skin.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Kerosine (petroleum) (CAS 8008-20-6)	Can be absorbed through the skin.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Toluene (CAS 108-88-3)	Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Kerosine (petroleum) (CAS 8008-20-6)	Can be absorbed through the skin.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Toluene (CAS 108-88-3)	Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Kerosine (petroleum) (CAS 8008-20-6)	Can be absorbed through the skin.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Can be absorbed through the skin.
Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Provide adequate general and local exhaust ventilation. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapour cartridge and full facepiece. Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

Skin protection

Hand protection Avoid exposure - obtain special instructions before use. Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Flame retardant protective clothing is recommended. Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations.

Respiratory protection Chemical respirator with organic vapour cartridge and full facepiece. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Consult supervisor for special handling instructions. Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance	Liquid.
Physical state	Liquid.
Form	Liquid.
Colour	Clear. Straw.
Odour	Characteristic odour.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	≤ -47 °C (-53 °F)
Flash point	> 38.0 °C (> 100.4 °F) Closed cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.8 %
Flammability limit - upper (%)	7 %
Vapour pressure	< 8 mm Hg (38°C)
Vapour density	4.5
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	240 °C (464 °F)
Decomposition temperature	Not available.
Viscosity	1 - 2.4 cSt (40 °C (104 °F)) <= 8 cSt (-20 °C (-4 °F))
Other information	
Bulk density	6.46 - 7.01 lb/gal
Density	0.775 - 0.84 (15 °C (59 °F))
Explosive properties	Not explosive.
Heat of combustion (NFPA 30B)	>= 42.8 kJ/g
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. Ignition sources.
Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary oedema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhoea. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. In high concentrations, vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

Components	Species	Test Results
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	5280 mg/m3
Oral		
LD50	Rat	> 5000 mg/kg

Constituents	Species	Test Results
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	15400 mg/kg

Constituents	Species	Test Results
Inhalation		
LC50	Rat	17.4 mg/l, 4 hours
Oral		
LD50	Rat	3500 - 4700 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12200 mg/kg
Inhalation		
Vapour		
LC50	Rat	28.1 mg/l, 4 Hours
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	490 mg/kg
Xylene (CAS 1330-20-7)		
Acute		
Oral		
LD50	Rat	3523 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitiser.

Skin sensitisation Irritating to skin.

Germ cell mutagenicity This product is not classified as a mutagen.

Carcinogenicity Diesel exhaust has been reported to be an occupational hazard due to NIOSH-reported potential carcinogenic properties. International Agency for Research on Cancer (IARC): Whole diesel engine exhaust – IARC Group 1. Exposure may cause lung cancer and also noted a positive association with an increased risk of bladder cancer.
A life time skin painting study by the American Petroleum Institute has shown that similar naphtha products with a boiling range of 350-700° 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.

ACGIH Carcinogens

Ethylbenzene (CAS 100-41-4)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Kerosine (petroleum) (CAS 8008-20-6)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Naphthalene (CAS 91-20-3)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Toluene (CAS 108-88-3)	A4 Not classifiable as a human carcinogen.
Xylene (CAS 1330-20-7)	A4 Not classifiable as a human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Ethylbenzene (CAS 100-41-4)	Confirmed animal carcinogen with unknown relevance to humans.
Kerosine (petroleum) (CAS 8008-20-6)	Confirmed animal carcinogen with unknown relevance to humans.
Kerosine, (petroleum), hydrosulfurized (CAS 64742-81-0)	Confirmed animal carcinogen with unknown relevance to humans.
Naphthalene (CAS 91-20-3)	Confirmed animal carcinogen with unknown relevance to humans.
Toluene (CAS 108-88-3)	Not classifiable as a human carcinogen.
Xylene (CAS 1330-20-7)	Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.

Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
Xylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Danger of serious damage to health by prolonged exposure. Possible cancer hazard - may cause cancer based on animal data. Suspected of causing genetic defects. Prolonged or repeated overexposure may cause central nervous system, kidney, liver, and lung damage.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Constituents		Species	Test Results
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1.81 - 2.38 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4.2 mg/l, 96 hours
Chronic			
Crustacea	EC50	Ceriodaphnia dubia	3.6 mg/l, 7 days
Toluene (CAS 108-88-3)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	11.5 mg/l, 48 hours
Fish	LC50	Oncorhynchus kisutch	5.5 mg/l, 96 hours
Chronic			
Crustacea	NOEC	Ceriodaphnia dubia	0.74 mg/l, 7 days
Fish	NOEC	Oncorhynchus kisutch	1.4 mg/l, 40 days
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	0.95 - 1.62 mg/l, 96 hours
Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.6 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Offer rinsed packaging material to local recycling facilities.

14. Transport information

TDG

UN number	UN1863
UN proper shipping name	FUEL, AVIATION, TURBINE ENGINE, (Pollutant marin)
Transport hazard class(es)	
Class	Combustible Liquid
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1863
UN proper shipping name	Fuel, aviation, turbine engine, (Marine Pollutant)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1863
UN proper shipping name	FUEL, AVIATION, TURBINE ENGINE, (MARINE POLLUTANT)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.
General information	IMDG Regulated Marine Pollutant.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Ethylbenzene (CAS 100-41-4)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

Precursor Control Regulations

Toluene (CAS 108-88-3) Class B

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Naphthalene (CAS 91-20-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 15-March-2018

Revision date -

Version No. 01

Disclaimer The information given is based on data available for the material, the components of the material, and similar materials. Énergie Valero Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.