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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Valvoline Professional Series Fuel Rail Cleaner
TM Trademark, Valvoline or its subsidiaries, registered in various countries


Relevant identified uses of the substance or mixture and uses advised against

Details of the supplier of the safety data sheet Valvoline LLC 3499 Blazer Parkway Lexington, KY 40509 United States of America (USA) 1-800-TEAMVAL SDS@valvoline.com	Emergency telephone number +1-800-VALVOLINE (+1-800-825-8654) Regulatory Information Number 1-800-TEAMVAL Product Information 1-800-TEAMVAL
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

- Flammable liquids : Category 2
- Acute toxicity (Inhalation) : Category 4
- Skin corrosion/irritation : Category 2
- Serious eye damage/eye irritation : Category 2A
- Carcinogenicity : Category 2
- Reproductive toxicity : Category 2
- Specific target organ toxicity - single exposure : Category 3 (Central nervous system)
- Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision))
- Aspiration hazard : Category 1
- Acute aquatic toxicity : Category 2

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Chronic aquatic toxicity : Category 2


GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
 H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.
 H361d Suspected of damaging the unborn child.
 H373 May cause damage to organs (Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision)) through prolonged or repeated exposure if inhaled.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P233 Keep container tightly closed.
 P240 Ground and bond container and receiving equipment.
 P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242 Use non-sparking tools.
 P243 Take action to prevent static discharges.
 P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

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easy to do. Continue rinsing.
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 P331 Do NOT induce vomiting.
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P362 + P364 Take off contaminated clothing and wash it before reuse.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
 P391 Collect spillage.
Storage:
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
 No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
 Chemical nature : Static Accumulator
 Chemical nature : Defatter

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (%)
TOLUENE	108-88-3	Flam. Liq. 2; H225 Acute Tox. 5; H333 2; H315 2A; H319 Repr. 2; H361d STOT SE 3; H336 STOT RE 2; H373 Asp. Tox. 1; H304	>= 50.00 - < 70.00

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		Aquatic Acute 2; H401 Aquatic Chronic 3; H412	
ISOPROPANOL	67-63-0	Flam. Liq. 2; H225 Acute Tox. 5; H333 2A; H319 STOT SE 3; H336	>= 10.00 - < 20.00
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2	Flam. Liq. 4; H227 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 2; H315 2A; H319	>= 10.00 - < 20.00
PETROLEUM DISTILLATES	64741-86-2	Flam. Liq. 3; H226 2A; H319 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 1.00 - < 10.00
Polymer		2; H315 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 1.00 - < 10.00

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MORPHOLINE	110-91-8	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 3; H311 1A; H314 1; H318 Aquatic Acute 3; H402	>= 1.00 - < 10.00
Poly[oxy(1,2-propanediyl)].alpha.-propyl-omega.-hydroxy-C12-15 alkyl ethers		2; H315 1; H318	>= 0.10 - < 1.00
HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE		Flam. Liq. 4; H227 Carc. 2; H351 STOT SE 3; H335, H336 Asp. Tox. 1; H304 Aquatic Acute 2; H401 Aquatic Chronic 2; H411	>= 0.10 - < 1.00

SECTION 4. FIRST AID MEASURES

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- General advice : Move out of dangerous area.
 Call a POISON CENTRE or doctor/physician if exposed or you feel unwell.
 Show this safety data sheet to the doctor in attendance.
 Symptoms of poisoning may appear several hours later.
 Do not leave the victim unattended.
- If inhaled : Move to fresh air.
 Keep patient warm and at rest.
 If unconscious, place in recovery position and seek medical advice.
 Consult a physician after significant exposure.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
 If on skin, rinse well with water.
 Wash contaminated clothing before re-use.
 If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
 Remove contact lenses.
 Protect unharmed eye.
- If swallowed : Obtain medical attention.
 Do NOT induce vomiting.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material.
 Administration of high doses of isopropanol in combination with known hepatotoxic chemicals resulted in enhanced liver toxicity in experimental animals.
 Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
 stomach or intestinal upset (nausea, vomiting, diarrhea)
 irritation (nose, throat, airways)
 Cough
 temporary changes in mood and behavior
 confusion
 irregular heartbeat
 Bloody urine
 lung edema (fluid buildup in the lung tissue)
 Difficulty in breathing
 May be fatal if swallowed and enters airways.
 Causes skin irritation.
 Causes serious eye irritation.

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Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
Suspected of damaging the unborn child.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : carbon dioxide and carbon monoxide
Hydrocarbons
Aldehydes
Ketones
Organic acids
formaldehyde
nitrogen compounds
Ammonia
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use a water spray to cool fully closed containers.

Product is compatible with standard fire-fighting agents.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Remove all sources of ignition.
Use personal protective equipment.
Ensure adequate ventilation.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
Suppress (knock down) gases/vapours/mists with a water spray jet.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). No sparking tools should be used. Keep away from open flames, hot surfaces and sources of ignition. Use only explosion-proof equipment.
- Advice on safe handling : Open drum carefully as content may be under pressure.
Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Take precautionary measures against static discharges.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
Container may be opened only under exhaust ventilation hood.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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Observe label precautions.
 No smoking.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
TOLUENE	108-88-3	CMP	50 ppm	AR OEL
		LT	78 ppm 290 mg/m3	BR OEL
		LPP	87 ppm 328 mg/m3	CL OEL
		LPT	150 ppm 560 mg/m3	CL OEL
		TWA	50 ppm	CR OEL
		TLV-TWA	50 ppm	DO OEL
		CCT	200 ppm 750 mg/m3	PA OEL
		CPT	50 ppm 188 mg/m3	PA OEL
		TWA	50 ppm 188 mg/m3	PE OEL
		CAP	50 ppm 188 mg/m3	VE OEL
SOPROPANOL	67-63-0	CMP	400 ppm	AR OEL
		CMP - CPT	500 ppm	AR OEL
		LT	310 ppm 765 mg/m3	BR OEL
		LPP	350 ppm 858 mg/m3	CL OEL
		LPT	500 ppm 1,230 mg/m3	CL OEL
		TWA	400 ppm	CR OEL
		STEL	500 ppm	CR OEL
		CPT	400 ppm 960 mg/m3	PA OEL
		CCT	500 ppm 1,225 mg/m3	PA OEL
		TWA	200 ppm 491 mg/m3	PE OEL
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2	STEL	400 ppm 983 mg/m3	PE OEL
		CAP	400 ppm	VE OEL
		LEB	500 ppm	VE OEL
		CMP	20 ppm	AR OEL

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		LT	39 ppm 190 mg/m3	BR OEL
		LPP	18 ppm 85 mg/m3	CL OEL
		TWA	20 ppm	CR OEL
		CPT	50 ppm 240 mg/m3	PA OEL
		CCT	100 ppm 480 mg/m3	PA OEL
		TWA	20 ppm 97 mg/m3	PE OEL
		STEL	50 ppm 242 mg/m3	PE OEL
		CAP	20 ppm	VE OEL
MORPHOLINE	110-91-8	CMP	20 ppm	AR OEL
		TWA	20 ppm	CR OEL
		TLV-TWA	20 ppm	DO OEL
		CPT	20 ppm 71 mg/m3	PA OEL
		CCT	30 ppm 140 mg/m3	PA OEL
		TWA	20 ppm 71 mg/m3	PE OEL
		CAP	20 ppm	VE OEL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
TOLUENE	108-88-3	toluene	Blood	Before shift at end of workweek	0.05 mg/l	ZCL_BE I
		toluene	Urine	End of workday	30 µg/l	ZCL_BE I
		o-Cresol	Urine	End of shift	0.5 mg/l	ZCR_BE I
		Hippuric acid	Urine	End of shift	1.6 g/g creatinine	ZCR_BE I
		Toluene	Blood	Prior to last shift of workweek	0.05 mg/l	ZCR_BE I
		hippuric acid	Urine	End of workday	1.6 g/g creatinine	ZUY_BE I
		o-cresol	Urine	End of workday	0.5 mg/l	ZUY_BE I
		o-Cresol	Urine	End of workday	0.5 mg/l	ZVE_BE I
		Hippuric acid	Urine	End of workday	1.6 g/g creatinine	ZVE_BE I

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		Toluene	Blood	Prior to last workday of workweek	0.05 mg/l	ZVE_BE I
		Toluene	In blood	Prior to last shift of workweek	0.02 mg/l	ZUS_A CGIHB
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ZUS_A CGIHB
		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g Creatinine	ZUS_A CGIHB
ISOPROPANOL	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ZUS_A CGIHB
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2	Butoxyacetic acid (BAA)	Urine	End of shift (As soon as possible after exposure ceases)	200 mg/g Creatinine	ZUS_A CGIHB

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection
 Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection

: Wear as appropriate:

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Impervious clothing
Safety shoes
Flame-resistant clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Odour : No data available

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Boiling point/boiling range : 82.5 °C (1,013.232 hPa)
Calculated Phase Transition Liquid/Gas

Flash point : 7.22 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : 12 %(V)
Calculated Explosive Limit

Lower explosion limit : 1.1 %(V)
Calculated Explosive Limit

Vapour pressure : 60.52728 hPa (25 °C)
Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : 0.8575 (60.00 °F)

Density : 0.86 g/cm³ (15.56 °C)

Solubility(ies)
Water solubility : No data available

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Solubility in other solvents : No data available

Partition coefficient: n-
octanol/water : No data available

Thermal decomposition : No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous
reactions : Vapours may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.
Do not allow evaporation to dryness.

Incompatible materials : Acids
acrylates
Alcohols
Aldehydes
Amines
Ammonia
Bases
chlorates
Chlorine
Ethylene oxide
glycols
halogenated hydrocarbons
halogens
isocyanates
Ketones
nitrites and other nitrosating agents
organic anhydrides
phenols
salts of strong bases
Strong oxidizing agents
Do not use with aluminum equipment at temperatures above
49C or 120 degrees F.

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Hazardous decomposition products : Aldehydes
 carbon dioxide and carbon monoxide
 formaldehyde-like
 Hydrocarbons
 nitrogen compounds
 Organic acids
 Ammonia
 ketones

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if inhaled.

Components:

TOLUENE:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Acute inhalation toxicity : LC50 (Rat): 8000 ppm
 Exposure time: 4 h
 Acute dermal toxicity : LD50 (Rabbit): 12,124 mg/kg

ISOPROPANOL:

Acute oral toxicity : LD50 (Rat): 5.84 g/kg
 Acute inhalation toxicity : LC50 (Rat): 16000 ppm
 Exposure time: 4 h
 Test atmosphere: vapour
 Acute dermal toxicity : LD50 (Rabbit): 12,800 mg/kg

ETHYLENE GLYCOL MONOBUTYL ETHER:

Acute oral toxicity : LD50 (Guinea pig): 1,200 mg/kg
 Acute inhalation toxicity : LC50 (Rat): 2.17 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.
 Acute dermal toxicity : Assessment: The component/mixture is classified as acute dermal toxicity, category 4.
 LD50 (Rabbit): 400 - 500 mg/kg

PETROLEUM DISTILLATES:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

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MORPHOLINE:

Acute oral toxicity : LD50 (Rat): ca. 1,900 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Assessment: The component/mixture is classified as acute
inhalation toxicity, category 3.

Acute dermal toxicity : LD50 (Rabbit): ca. 500 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks: May cause skin irritation and/or dermatitis.

Result: Repeated exposure may cause skin dryness or cracking.

Components:**TOLUENE:**

Result: Irritating to skin.

ISOPROPANOL:

Result: Slight, transient irritation

ETHYLENE GLYCOL MONOBUTYL ETHER:

Species: Rabbit

Result: Irritating to skin.

PETROLEUM DISTILLATES:

Result: Slight, transient irritation

Polymer:

Result: Irritating to skin.

MORPHOLINE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive after 3 minutes or less of exposure

Poly[oxy(1,2-propanediyl)].alpha.-propyl-.omega.-hydroxy-C12-15 alkyl ethers:

Result: Irritating to skin.

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

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Result: **Slight, transient irritation**

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

Components:**TOLUENE:**

Result: **Irritating to eyes.**

ISOPROPANOL:

Result: **Irritating to eyes.**

ETHYLENE GLYCOL MONOBUTYL ETHER:

Species: **Rabbit**

Result: **Irritating to eyes.**

PETROLEUM DISTILLATES:

Result: **Irritating to eyes.**

Polymer:

Result: **Risk of serious damage to eyes.**

MORPHOLINE:

Species: **Rabbit**

Result: **Corrosive**

Method: **OECD Test Guideline 405**

Poly[oxy(1,2-propanediyl)].alpha.-propyl-.omega.-hydroxy-C12-15 alkyl ethers:

Result: **Risk of serious damage to eyes.**

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

Result: **Slight, transient irritation**

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:**ETHYLENE GLYCOL MONOBUTYL ETHER:**

Test Type: **Maximisation Test**

Species: **Guinea pig**

Assessment: **Does not cause skin sensitisation.**

Method: **OECD Test Guideline 406**

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Polymer:

Assessment: **Does not cause skin sensitisation.**

Germ cell mutagenicity

Not classified based on available information.

Components:

ETHYLENE GLYCOL MONOBUTYL ETHER:

Genotoxicity in vitro : Test Type: **Ames test**
Test species: **Salmonella typhimurium**
Metabolic activation: **with and without metabolic activation**
Result: **negative**

MORPHOLINE:

Genotoxicity in vitro : Test Type: **unscheduled DNA synthesis assay**
Test species: **rat hepatocytes**
Metabolic activation: **without metabolic activation**
Method: **OECD Test Guideline 482**
Result: **negative**

: Test Type: **In vitro mammalian cell gene mutation test**
Test species: **mouse lymphoma cells**
Metabolic activation: **without metabolic activation**
Method: **OECD Test Guideline 476**
Result: **positive**

Carcinogenicity

Suspected of causing cancer.

Components:

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

Carcinogenicity - Assessment : **Limited evidence of carcinogenicity in animal studies**

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

TOLUENE:

Reproductive toxicity - Assessment : **Some evidence of adverse effects on development, based on animal experiments.**

STOT - single exposure


May cause drowsiness or dizziness.

Components:

TOLUENE:

Exposure routes: **Inhalation**
Target Organs: **Central nervous system**
Assessment: **May cause drowsiness or dizziness.**

ISOPROPANOL:

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Assessment: **May cause drowsiness or dizziness.**

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

Assessment: **May cause respiratory irritation., May cause drowsiness or dizziness.**

STOT - repeated exposure

Not classified based on available information.

Components:

TOLUENE:

Exposure routes: **Inhalation**

Target Organs: **Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision)**

Assessment: **May cause damage to organs through prolonged or repeated exposure.**

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

TOLUENE:

May be fatal if swallowed and enters airways.

PETROLEUM DISTILLATES:

May be fatal if swallowed and enters airways.

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

Components:

ISOPROPANOL:

Remarks: **Central nervous system**

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

TOLUENE:

Toxicity to fish : **LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/l**
 Exposure time: **96 h**
 Test Type: **flow-through test**

Toxicity to daphnia and other : **EC50 (Water flea (Ceriodaphnia dubia)): 3.78 mg/l**

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aquatic invertebrates	Exposure time: 48 h Remarks: Mortality
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (microalgae)): > 433 mg/l End point: Growth inhibition Exposure time: 96 h NOEC (Scenedesmus quadricauda (Green algae)): > 400 mg/l End point: Growth inhibition Exposure time: 7 d
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorhynchus mykiss (rainbow trout)): 1.39 mg/l Exposure time: 40 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Water flea (Ceriodaphnia dubia)): 0.74 mg/l Exposure time: 7 d

ISOPROPANOL:

Toxicity to fish	: LC50 (Fathead minnow (Pimephales promelas)): 5,770 - 7,450 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	: LC50 (Water flea (Daphnia magna)): > 10,000 mg/l Exposure time: 24 h Test Type: static test

ETHYLENE GLYCOL MONOBUTYL ETHER:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 1,474 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Water flea (Daphnia magna)): 1,550 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): 911 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	: NOEC (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 21 d Test Type: semi-static test

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Method: **OECD Test Guideline 204**

PETROLEUM DISTILLATES:
 Ecotoxicology Assessment

Chronic aquatic toxicity : **Toxic to aquatic life with long lasting effects.**

Polymer:
 Ecotoxicology Assessment

Acute aquatic toxicity : **Very toxic to aquatic life.**

Chronic aquatic toxicity : **Very toxic to aquatic life with long lasting effects.**

MORPHOLINE:

Toxicity to fish : **LC50 (Oncorhynchus mykiss (rainbow trout)): 380 mg/l**
 Exposure time: **96 h**
 Test Type: **static test**

Toxicity to daphnia and other aquatic invertebrates : **EC50 (Water flea (Daphnia magna)): 45 mg/l**
 Exposure time: **48 h**
 Method: **OECD Test Guideline 202**

Toxicity to algae : **ErC50 (Pseudokirchneriella subcapitata (green algae)): 28 mg/l**
 Exposure time: **96 h**
 Test Type: **static test**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : **NOEC (Water flea (Daphnia magna)): 5 mg/l**
 Exposure time: **21 d**
 Test Type: **semi-static test**
 Method: **OECD Test Guideline 211**

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

Toxicity to fish : **LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l**
 Exposure time: **96 h**
 Test Type: **semi-static test**
 Test substance: **WAF**
 Method: **OECD Test Guideline 203**
 Remarks: **Information given is based on data obtained from similar substances.**

Toxicity to daphnia and other aquatic invertebrates : **EL50 (Water flea (Daphnia magna)): 10 mg/l**
 Exposure time: **48 h**
 Test Type: **static test**
 Test substance: **WAF**
 Method: **OECD Test Guideline 202**
 Remarks: **Information given is based on data obtained from similar substances.**

Toxicity to algae : **EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 3 mg/l**
 End point: **Growth inhibition**
 Exposure time: **72 h**

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Test Type: **static test**
 Test substance: **WAF**
 Method: **OECD Test Guideline 201**
 Remarks: **Information given is based on data obtained from similar substances.**

Ecotoxicology Assessment

Acute aquatic toxicity : **Toxic to aquatic life.**

Chronic aquatic toxicity : **Toxic to aquatic life with long lasting effects.**

No data available

Persistence and degradability

Components:

TOLUENE:

Biodegradability : Result: **Readily biodegradable.**

ETHYLENE GLYCOL MONOBUTYL ETHER:

Biodegradability : Result: **Readily biodegradable.**

Biodegradation: **90.4 %**

Exposure time: **28 d**

Method: **OECD Test Guideline 301B**

MORPHOLINE:

Biodegradability : Result: **Readily biodegradable.**

Biodegradation: **92.6 %**

Exposure time: **22 d**

Method: **OECD Test Guideline 301E**

HYDROCARBONS, C10, AROMATICS, >1% NAPHTHALENE:

Biodegradability : Result: **Inherently biodegradable.**

No data available

Bioaccumulative potential

Components:

TOLUENE:

Bioaccumulation : Species: **Ide, silver or golden orfe (Leuciscus idus)**

Bioconcentration factor (BCF): **94**

Exposure time: **3 d**

Concentration: **0.05 mg/l**

Method: **Not reported**

Partition coefficient: n-octanol/water : log Pow: **2.73**

ISOPROPANOL:

Partition coefficient: n-octanol/water : log Pow: **0.05**

ETHYLENE GLYCOL MONOBUTYL ETHER:

Partition coefficient: n-octanol/water : log Pow: **0.83**



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MORPHOLINE:
 Partition coefficient: n-octanol/water : log Pow: **-0.86**

No data available
Mobility in soil
Components:
 No data available
Other adverse effects
 No data available
Product:
 Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life with long lasting effects.
Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- General advice : The product should not be allowed to enter drains, water courses or the soil.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.
- Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste handling site for recycling or disposal.
 Do not re-use empty containers.
 Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION


ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1993	FLAMMABLE LIQUID, N.O.S. (TOLUENE, ISOPROPANOL)	3		II
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1993	FLAMMABLE LIQUID, N.O.S. (TOLUENE, ISOPROPANOL)	3		II
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INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1993	FLAMMABLE LIQUID, N.O.S. (TOLUENE, ISOPROPANOL)	3	II	MARINE POLLUTANT:(POLYETHER AMINE)LIMITE D QUANTITY
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UN_DG

UN	1993	FLAMMABLE LIQUID, N.O.S. (TOLUENE, ISOPROPANOL)	3	II	
----	------	--	---	----	--

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant	yes
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Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION


Safety, health and environmental regulations/legislation specific for the substance or mixture

- Chemical Control Order (CCO) : Not applicable
- Priority Chemical List (PCL) : Not applicable
- Hazardous Substance Act B.E. 2535 : MORPHOLINE
- Emergency Decree on Controlling the Use of Volatile Substances B.E. 2533 : TOLUENE
ETHYLENE GLYCOL MONOBUTYL
ETHER

Other international regulations

The components of this product are reported in the following inventories:

- DSL : All components of this product are on the Canadian DSL
- AICS : On the inventory, or in compliance with the inventory
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory

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IECSC : On the inventory, or in compliance with the inventory

TSCA : On TSCA Inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information


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Full text of H-Statements

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H227 Combustible liquid.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H311 Toxic in contact with skin.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H333 May be harmful if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H361d Suspected of damaging the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

- H400 Very toxic to aquatic life.
- H401 Toxic to aquatic life.
- H402 Harmful to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable

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to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (1-800-VALVOLINE).

Sources of key data used to compile the Safety Data Sheet

Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.


List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CEATOX

Assistance Center of the Institute of Toxicology

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Children's Hospital Clinic, Faculty of Medicine
University of São Paulo.
BR OEL : Occupational Exposure Limit (Brazil)
UY OEL : Occupational Exposure Limit (Uruguay)
PY OEL : Occupational Exposure Limit (Paraguay)