



SAFETY DATA SHEET

Valvoline™ DIESEL SYSTEM PROTECTOR

Version: 3.0

Revision Date: 12.03.2020

Print Date: 12/05/2020

Conforms to EU Regulation 1907/2006/EC as amended. - SDSGHS_DE

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Valvoline™ DIESEL SYSTEM PROTECTOR

Product code : 882817

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

Recommended use : Fuels and fuel additives

1.3 Details of the supplier of the safety data sheet

Ellis Enterprises B.V., an affiliate of Valvoline
Wieldrechtseweg 39
3316 BG Dordrecht
Netherlands
+31 (0)78 654 3500 (in the Netherlands), or
contact your local CSR contact person

SDS@valvoline.com

1.4 Emergency telephone number

00-800-825-8654 / 001-859-202-3865, or contact
your local emergency telephone number at 0 30-1
92 40

Product Information

+31 (0)78 654 3500 (in the Netherlands), or
contact your local CSR contact person

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2

H319: Causes serious eye irritation.

Aspiration hazard, Category 1

H304: May be fatal if swallowed and enters
airways.

Long-term (chronic) aquatic hazard,
Category 3

H412: Harmful to aquatic life with long lasting
effects.

2.2 Label elements

UFI : 9NRC-3SHX-C00Y-WDGN



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Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: H304

May be fatal if swallowed and enters airways.

H319

Causes serious eye irritation.

H412

Harmful to aquatic life with long lasting effects.

Supplemental Hazard Statements

: EUH066

Repeated exposure may cause skin dryness or cracking.

Precautionary statements

: P101

If medical advice is needed, have product container or label at hand.

P102

Keep out of reach of children.

Prevention:

P280

Wear eye protection/ face protection.

P273

Avoid release to the environment.

Response:

P337 + P313

If eye irritation persists: Get medical advice/ attention.

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P331

Do NOT induce vomiting.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Disposal:

P501

Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Additional advice

No information available.

SECTION 3: Composition/information on ingredients



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3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	918-481-9 01-2119457273-39-xxxx	Asp. Tox.1; H304	>= 90,00 - <= 100,00
2-Ethylhexyl nitrate	27247-96-7 248-363-6 01-2119539586-27-xxxx	Acute Tox.4; H302 Acute Tox.4; H332 Acute Tox.4; H312 Aquatic Chronic2; H411	>= 5,00 - < 10,00
2-Ethylhexan-1-ol	104-76-7 203-234-3 01-2119487289-20-xxxx	Acute Tox.4; H332 Skin Irrit.2; H315 STOT SE3; H335	>= 2,50 - < 5,00
(Z)-N-Methyl-N-(1-oxo-9-octadecenyl)glycine	110-25-8 203-749-3 01-2119488991-20-xxxx	Acute Tox.4; H332 Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Acute1; H400	>= 2,50 - < 3,00
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol	95-38-5 202-414-9 01-2119777867-13-xxxx	Acute Tox.4; H302 Skin Corr.1C; H314 Eye Dam.1; H318 STOT RE2; H373 Aquatic Acute1; H400 Aquatic Chronic1; H410	>= 0,50 - < 1,00
Morpholine	110-91-8 203-815-1 01-2119496057-30-xxxx	Flam. Liq.3; H226 Acute Tox.4; H302 Acute Tox.3; H331 Acute Tox.3; H311 Skin Corr.1B; H314 Eye Dam.1; H318	>= 0,50 - < 1,00

For explanation of abbreviations see section 16.

SECTION 4: First aid measures



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4.1 Description of first aid measures

- General advice : Move out of dangerous area.
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.
IF INHALED: Call a POISON CENTER/ doctor if you feel unwell.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
- 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.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No symptoms known or expected.
- Risks : Repeated exposure may cause skin dryness or cracking.
Causes serious eye irritation.
May be fatal if swallowed and enters airways.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures



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5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : carbon dioxide and carbon monoxide

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Remove all sources of ignition.
Use personal protective equipment.
Ensure adequate ventilation.
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.



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Suppress (knock down) gases/vapours/mists with a water spray jet.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for 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).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : 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.
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.

Advice on protection against fire and explosion : No sparking tools should be used. Keep away from open flames, hot surfaces and sources of ignition.

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully



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resealed and kept upright to prevent leakage. Observe label precautions. No smoking.

Storage class (TRGS 510) : 10, Combustible liquids

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		AGW	600 mg/m ³	D900LV
2-Ethylhexan-1-ol	104-76-7	AGW (Vapour and aerosols)	10 ppm 54 mg/m ³ Vapour and aerosols	DE TRGS 900
		TWA	1 ppm 5,4 mg/m ³	2017/164/EU
(Z)-N-Methyl-N-(1-oxo-9-octadecenyl)glycine	110-25-8	AGW (Inhalable fraction)	0,05 mg/m ³ Inhalable fraction	DE TRGS 900
Morpholine	110-91-8	TWA	10 ppm 36 mg/m ³	2006/15/EC
		STEL	20 ppm 72 mg/m ³	2006/15/EC
		AGW	10 ppm 36 mg/m ³	DE TRGS 900

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol : End Use: **Workers**
Exposure routes: **Inhalation**
Potential health effects: **Long-term systemic effects**
Value: **0,46 mg/m³RD TOX - Repeated dose toxicity**
End Use: **Workers**



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Exposure routes: **Inhalation**
Potential health effects: **Acute systemic effects**
Value: **14 mg/m3RD TOX - Repeated dose toxicity**
End Use: **Workers**
Exposure routes: **Dermal**
Potential health effects: **Long-term systemic effects**
Value: **0,06 mg/kgRD TOX - Repeated dose toxicity**
End Use: **Workers**
Exposure routes: **Dermal**
Potential health effects: **Acute systemic effects**
Value: **2 mg/kgRD TOX - Repeated dose toxicity**

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

(Z)-N-Methyl-N-(1-oxo-9-octadecenyl)glycine : **Sewage treatment plant**
Value: **13 mg/l**
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol : **Sewage treatment plant**
Value: **0,27 mg/l**
Fresh water sediment
Value: **0,376 mg/kg**
Marine sediment
Value: **0,0376 mg/kg**
Soil
Value: **0,075 mg/kg**

8.2 Exposure controls

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

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

Hand protection

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

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Safety shoes
Impervious clothing
Wear as appropriate:

SECTION 9: Physical and chemical properties



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9.1 Information on basic physical and chemical properties

Appearance	: liquid
Colour	: yellow
Odour	: characteristic
Odour Threshold	: No data available
pH	: Not applicable
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: 100 °C
Flash point	: 62 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit / Upper flammability limit	: 7 %(V)
Lower explosion limit / Lower flammability limit	: 0,5 %(V)
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Density	: ca. 0,83 g/cm ³ (20 °C)
Solubility(ies)	
Water solubility	: insoluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Decomposition temperature	: No data available



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Viscosity
Viscosity, dynamic : No data available
Viscosity, kinematic : ca. 7 mm²/s (40 °C)
Oxidizing properties : No data available

9.2 Other information

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : excessive heat
Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : strong reducing agents
Strong oxidizing agents
Lead
alkalis
Acids

10.6 Hazardous decomposition products

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects



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Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate : > 2.000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 2.000 mg/kg
Method: Calculation method

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
Remarks: Information given is based on data obtained from similar substances.

Acute inhalation toxicity : LD50 (Rat): > 5.000 mg/m3
Exposure time: 8 h
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): >= 3.160 mg/kg
Method: OECD Test Guideline 402
Assessment: Not classified as acutely toxic by dermal absorption under GHS.

Components:

ETHYLHEXYL-2 NITRATE:

Acute oral toxicity : (Human):
Assessment: The component/mixture is classified as acute oral toxicity, category 4.

Acute inhalation toxicity : (Humans): Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : (Humans): Assessment: The component/mixture is classified



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as acute dermal toxicity, category 4.

Components:

ETHYLHEXANOL-2:

Acute oral toxicity	: LD50 (Rat, male): 3.290 mg/kg
Acute inhalation toxicity	: Test atmosphere: vapour Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.
Acute dermal toxicity	: LD50 (Rat): > 3.000 mg/kg Method: OECD Test Guideline 402 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Components:

OLEYL N-METHYLGLYCINE:

Acute oral toxicity	: LD50 (Rat): > 5.000 mg/kg
Acute inhalation toxicity	: LC50 (Rat): > 1,01 - 1,85 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Components:

OLEYL HYDROXYETHYL IMIDAZOLINE:

Acute oral toxicity	: LD50 (Rat): ca. 1.265 mg/kg
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Components:

MORPHOLINE:

Acute oral toxicity	: LD50 (Rat): ca. 1.900 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: Test atmosphere: vapour Assessment: The component/mixture is classified as acute inhalation toxicity, category 3.
Acute dermal toxicity	: LD50 (Rabbit): ca. 500 mg/kg

Skin corrosion/irritation

Repeated exposure may cause skin dryness or cracking.

Product:

Result: Repeated exposure may cause skin dryness or cracking.



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Remarks: May cause skin irritation in susceptible persons.

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Result: No skin irritation

Result: Repeated exposure may cause skin dryness or cracking.

ETHYLHEXYL-2 NITRATE:

Result: Repeated exposure may cause skin dryness or cracking.

Species: Rabbit

Result: No skin irritation

ETHYLHEXANOL-2:

Result: Irritating to skin.

OLEYL N-METHYLGLYCINE:

Species: Rabbit

Result: Irritating to skin.

OLEYL HYDROXYETHYL IMIDAZOLINE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive after 1 to 4 hours of exposure

MORPHOLINE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Result: Eye irritation

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

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Result: No eye irritation

ETHYLHEXYL-2 NITRATE:

Species: Rabbit



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Result: No eye irritation

ETHYLHEXANOL-2:

Result: Severely irritating to eyes

OLEYL N-METHYLGLYCINE:

Species: Rabbit

Result: Corrosive

OLEYL HYDROXYETHYL IMIDAZOLINE:

Result: Corrosive

MORPHOLINE:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Corrosive

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Assessment: Did not cause sensitisation on laboratory animals.

ETHYLHEXYL-2 NITRATE:

Test Type: Maximisation Test

Species: Guinea pig

Assessment: Does not cause skin sensitisation.

Method: OECD Test Guideline 406

OLEYL N-METHYLGLYCINE:

Test Type: Maximisation Test

Species: Guinea pig

Assessment: Does not cause skin sensitisation.

OLEYL HYDROXYETHYL IMIDAZOLINE:

Species: Guinea pig

Assessment: Does not cause skin sensitisation.

Method: OECD Test Guideline 406

Germ cell mutagenicity

Not classified based on available information.

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Genotoxicity in vitro : Test Type: in vitro assay



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Result: **negative**

ETHYLHEXYL-2 NITRATE:

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

OLEYL N-METHYLGLYCINE:

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

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

Components:

ETHYLHEXANOL-2:

Assessment: **May cause respiratory irritation.**

STOT - repeated exposure

Not classified based on available information.

Components:

OLEYL HYDROXYETHYL IMIDAZOLINE:

Exposure routes: **Ingestion**
Target Organs: **Gastrointestinal tract, thymus gland**



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

Repeated dose toxicity

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species: Rat
NOAEL: ≥ 1.000 mg/l
Application Route: Oral
Method: OECD Test Guideline 422

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Toxicity to fish : LL50 (*Oncorhynchus mykiss* (rainbow trout)): > 1.000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: WAF
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (*Daphnia magna* (Water flea)): > 1.000 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 202

Toxicity to algae : EL50 (*Pseudokirchneriella subcapitata* (green algae)): > 1.000 mg/l



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Exposure time: 72 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 201

2-Ethylhexyl nitrate

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 2 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 12,6 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

NOEC (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 3,22 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

2-Ethylhexan-1-ol

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 28,2 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 39 mg/l
Exposure time: 48 h

Toxicity to algae : (Desmodesmus subspicatus (green algae)): 11,5 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test

(Z)-N-Methyl-N-(1-oxo-9-octadecenyl)glycine

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 9,3 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,43 mg/l
Exposure time: 48 h
Test Type: static test



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Toxicity to algae : **EC50 (Desmodesmus subspicatus (green algae))**: 6,3 mg/l
End point: **Growth inhibition**
Exposure time: **72 h**
Test Type: **static test**

2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol

Toxicity to fish : **LC50 (Danio rerio (zebra fish))**: 0,3 mg/l
Exposure time: **96 h**
Test Type: **static test**
Method: **OECD Test Guideline 203**

Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea))**: 0,163 mg/l
Exposure time: **48 h**
Test Type: **semi-static test**
Method: **OECD Test Guideline 202**

Toxicity to algae : **EC50 (Desmodesmus subspicatus (green algae))**: 0,03 mg/l
End point: **Growth inhibition**
Exposure time: **72 h**
Test Type: **static test**
Method: **OECD Test Guideline 201**

M-Factor (Short-term (acute) aquatic hazard) : **10**

M-Factor (Long-term (chronic) aquatic hazard) : **1**

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 (Daphnia magna (Water flea))**: 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**: 5 mg/l
Exposure time: **21 d**
Species: **Daphnia magna (Water flea)**
Test Type: **semi-static test**
Method: **OECD Test Guideline 211**



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12.2 Persistence and degradability

Components:

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Biodegradability : Inoculum: **activated sludge**
Result: **Readily biodegradable.**
Biodegradation: **80 %**
Exposure time: **28 d**
Method: **OECD Test Guideline 301F**

2-Ethylhexyl nitrate

Biodegradability : Result: **Not readily biodegradable.**
Biodegradation: **0 %**
Exposure time: **28 d**
Method: **OECD Test Guideline 310**

2-Ethylhexan-1-ol

Biodegradability : Result: **Readily biodegradable.**
Biodegradation: **68 %**
Exposure time: **17 d**
Method: **Modified Sturm Test**

(Z)-N-Methyl-N-(1-oxo-9-octadecenyl)glycine

Biodegradability : Result: **Readily biodegradable.**
Biodegradation: **85 %**
Exposure time: **28 d**
Method: **OECD Test Guideline 301B**

2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol

Biodegradability : Result: **Not readily biodegradable.**
Biodegradation: **1 %**
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**

12.3 Bioaccumulative potential

Components:

2-Ethylhexyl nitrate

Partition coefficient: n-octanol/water : log Pow: **5,24**



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(Z)-N-Methyl-N-(1-oxo-9-octadecenyl)glycine

Partition coefficient: n-octanol/water : log Pow: 3,5 - 4,2

2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol

Partition coefficient: n-octanol/water : log Pow: 8

Morpholine

Partition coefficient: n-octanol/water : log Pow: -0,86

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : Harmful to aquatic life with long lasting effects., An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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.



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SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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

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

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable



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Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Water contaminating class (Germany) : WGK 3 highly hazardous to water
TA Luft List (Germany) : Total dust:
Not applicable
Inorganic substances in powdered form:
Not applicable
Inorganic substances in vapour or gaseous form:
Not applicable
Organic Substances:
portion Class 1: 4 %

Carcinogenic substances:
Not applicable
Mutagenic:
Not applicable
Toxic to reproduction:
Not applicable

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

DSL : This product contains one or several components that are not on the Canadian DSL and have annual quantity limits.

AICS : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory



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IECSC : Not in compliance with the inventory

TCSI : Not in compliance with the inventory

TSCA : Not 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)

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information

Internal information : 000000272888

Full text of H-Statements

H226	Flammable liquid and vapour.
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.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Other information : The information accumulated herein is believed to be accurate



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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 to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (+31 (0)78 654 3500).

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



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WEL : Workplace Exposure Level

ABM : Water Hazard Class for the Netherlands

ADR : Agreement concerning the International Carriage of Dangerous Goods by Road.

ADNR: Regulation for the Carriage of Dangerous Substances on the Rhine

CLP : Classification, Labelling and Packaging

CSA : Chemical Safety Assessment

CSR : Chemical Safety Report

DNEL : Derived No Effect Level.

EINECS : European Inventory of Existing Commercial Chemical Substances.

ELINCS : European List of Notified Chemical Substances

PEC : Predicted Effect Concentration

PEL : Permissible Exposure Limits

PNEC : Predicted No Effect Concentration

R-pharse : Risk phrase

REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals

RID : Regulation Concerning the International Transport of Dangerous Goods by Rail

S-pharse: Safety phrase

WGK : German Water Hazard Class