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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Valvoline™ SYNTHETIC DOT 3&4
BRAKE FLUID

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

Details of the supplier of the safety data sheet x P.O. Box 2219 Columbus, OH 43216 United States of America (USA) 614-790-3333 sds@valvoline.com	Emergency telephone number 1-800-ASHLAND (1-800-274-5263) Regulatory Information Number 1-800-325-3751 Product Information 614-790-3333
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Serious eye damage/eye irritation : Category 1

Reproductive toxicity : Category 2

Acute aquatic toxicity : Category 3

Chronic aquatic toxicity : Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H318 Causes serious eye damage.
H361d Suspected of damaging the unborn child.
H412 Harmful 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.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:

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P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage:

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 : Defatter

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (%)
Triethylene glycol monomethyl ether, borate	30989-05-0	Not a hazardous substance or mixture.	>= 30.00 - < 50.00
2-(2-(2-Butoxyethoxy)ethoxy)ethanol	143-22-6	Acute Tox. 5; H313 1; H318	>= 10.00 - < 20.00
ALKOXYLATED ALCOHOL	9004-77-7	Acute Tox. 5; H303 Acute Tox. 5; H313 1; H318	>= 10.00 - < 20.00
DIISOPROPANOLAMINE	110-97-4	2A; H319	>= 1.00 - < 10.00
BUTYLATED HYDROXY TOLUENE	128-37-0	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0.10 - < 1.00
SODIUM HYDROXIDE	1310-73-2	Met. Corr. 1; H290 1A; H314	>= 0.10 - < 1.00

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		1; H318 Aquatic Acute 3; H402	
GLYCOL	111-77-3	Repr. 2; H361d	>= 0.10 - < 1.00

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
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 : 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)
Causes serious eye damage.
Suspected of damaging the unborn child.

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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
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- 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
Hydrocarbons
Alcohols
Aldehydes
ethers
Nitrogen oxides (NO_x)
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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

- Personal precautions, protective equipment and emergency procedures : 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.
- 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 : Soak up with inert absorbent material (e.g. sand, silica gel,

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containment and cleaning up acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : 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.
- 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.
Observe label precautions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
DIISOPROPANOLAMINE	110-97-4	TWA	10 ppm	SUPLR EXP
Triethylene glycol monomethyl ether, borate	30989-05-0	TWA (Inhalable fraction.)	2 mg/m3 Inhalable fraction.	UY OEL
		STEL (Inhalable fraction.)	6 mg/m3 Inhalable fraction.	UY OEL
		TWA (Inhalable fraction.)	2 mg/m3 Inhalable fraction.	PY OEL
		STEL (Inhalable fraction.)	6 mg/m3 Inhalable fraction.	PY OEL
		TWA 48HRS (Inhalable fraction.)	2 mg/m3 Inhalable fraction.	BR OEL
		STEL (Inhalable fraction.)	6 mg/m3 Inhalable fraction.	BR OEL
		TWA (Inhalable fraction.)	2 mg/m3 Inhalable fraction.	EC OEL

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		STEL (Inhalable fraction.)	6 mg/m3 Inhalable fraction.	EC OEL
		TWA (Inhalable fraction.)	2 mg/m3 Inhalable fraction.	CR OEL
		STEL (Inhalable fraction.)	6 mg/m3 Inhalable fraction.	CR OEL
		(Inhalable fraction.)		CR OEL
		(Inhalable fraction.)		PY OEL
BUTYLATED HYDROXY TOLUENE	128-37-0	CMP (Vapour and aerosol, inhalable fraction)	2 mg/m3 Vapour and aerosol, inhalable fraction	AR OEL
		CPT	10 mg/m3	PA OEL
		CCT	20 mg/m3	PA OEL
		CAP (Vapour and aerosol, inhalable fraction)	2 ppm Vapour and aerosol, inhalable fraction	VE OEL
SODIUM HYDROXIDE	1310-73-2	CMP-C	2 mg/m3	AR OEL
		LPA	2 ppm	CL OEL
		C	2 mg/m3	CR OEL
		CPT	2 mg/m3	PA OEL
		CCT	4 mg/m3	PA OEL
		CEIL	2 mg/m3	PE OEL
		T	2 ppm	VE OEL

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 : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

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 and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.

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Maintain eye wash station in immediate work area.

- Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- 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
- Colour : yellow
- Odour : ammoniacal
- Odour Threshold : No data available
No data available
- pH : 7.7
- Melting point/freezing point : < -59 °C
- Boiling point/boiling range : > 243 °C
- Flash point : 132 °C
Method: closed cup
- Evaporation rate : No data available
No data available
- Flammability (solid, gas) : No data available
No data available
- Upper explosion limit : No data available
No data available
- Lower explosion limit : No data available
No data available
- Vapour pressure : Estimated < 0.01 mmHg
- Relative vapour density : > 10AIR=1

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Relative density : No data available
No data available

Density : 1.03 - 1.08 g/cm3

Solubility(ies)
Water solubility : soluble

Solubility in other solvents : No data available
No data available

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

Thermal decomposition : No data available
No data available

Viscosity
Viscosity, dynamic : No data available
No data available

Viscosity, kinematic : 1100 mm2/s (40 °C)

Oxidizing properties : No data available
No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.
Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat
Do not allow evaporation to dryness.

Incompatible materials : Acids
Alkaline earth metals
aluminum
Bases
Copper

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galvanized metals
halogenated hydrocarbons
nitrites
strong alkalis
Strong oxidizing agents
Zinc

Hazardous decomposition products : Aldehydes
carbon dioxide and carbon monoxide
Nitrogen oxides (NOx)
Organic acids
ketones

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

Triethylene glycol monomethyl ether, borate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

2-(2-(2-Butoxyethoxy)ethoxy)ethanol:

Acute oral toxicity : LD50 (Rat): 5,300 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 3,502 mg/kg

ALKOXYLATED ALCOHOL:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): 3,540 mg/kg

DIISOPROPANOLAMINE:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rabbit): 8,000 mg/kg

BUTYLATED HYDROXY TOLUENE:

Acute oral toxicity : LD50 (Rat): > 6,000 mg/kg
Method: OECD Test Guideline 401
GLP: yes

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Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: Not classified as acutely toxic by dermal absorption under GHS.
Remarks: No mortality observed at this dose.

SODIUM HYDROXIDE:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Acute inhalation toxicity : Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: Moderate respiratory irritant

Acute dermal toxicity : Symptoms: Corrosion
Assessment: Not classified as acutely toxic by dermal absorption under GHS.

GLYCOL:

Acute oral toxicity : LD50 (Mouse): > 5,288 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute inhalation toxicity : LC0 (Rat): > 1.2 mg/l
Exposure time: 6 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): 9,404 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Not classified based on available information.

Components:

Triethylene glycol monomethyl ether, borate:
Result: No skin irritation

2-(2-(2-Butoxyethoxy)ethoxy)ethanol:

Result: No skin irritation

ALKOXYLATED ALCOHOL:

Result: Slight, transient irritation

DIISOPROPANOLAMINE:

Result: No skin irritation

BUTYLATED HYDROXY TOLUENE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

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SODIUM HYDROXIDE:

Result: Corrosive after 3 minutes or less of exposure

GLYCOL:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

Components:

Triethylene glycol monomethyl ether, borate:

Result: Slight, transient irritation

2-(2-(2-Butoxyethoxy)ethoxy)ethanol:

Result: Corrosive

ALKOXYLATED ALCOHOL:

Result: Corrosive

DIISOPROPANOLAMINE:

Result: Severely irritating to eyes

BUTYLATED HYDROXY TOLUENE:

Species: Rabbit

Result: Slight, transient irritation

Method: OECD Test Guideline 405

SODIUM HYDROXIDE:

Result: Corrosive

GLYCOL:

Species: Rabbit

Result: Slight, transient irritation

Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

Triethylene glycol monomethyl ether, borate:

Test Type: Maximisation Test

Species: Guinea pig

Assessment: Does not cause skin sensitisation.

Method: OECD Test Guideline 406

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ALKOXYLATED ALCOHOL:

Test Type: Maximisation Test
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

BUTYLATED HYDROXY TOLUENE:

Assessment: Does not cause skin sensitisation.

SODIUM HYDROXIDE:

Exposure routes: Skin contact
Species: Humans
Result: negative

GLYCOL:

Test Type: Maximisation Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

Germ cell mutagenicity
Not classified based on available information.

Components:

Triethylene glycol monomethyl ether, borate:
Genotoxicity in vitro : Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative

BUTYLATED HYDROXY TOLUENE:

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

GLYCOL:

Genotoxicity in vitro : Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

GLYCOL:

Reproductive toxicity - : Some evidence of adverse effects on development, based on

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Assessment animal experiments.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Triethylene glycol monomethyl ether, borate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Daphnia magna)): >= 500 mg/l
 Exposure time: 48 h

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201

ALKOXYLATED ALCOHOL:

Toxicity to fish : LC50 (Flatfish, flounder (Scophthalmus maximus)): > 1,800 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203

Toxicity to algae : ErC50 (Skeletonema costatum (marine diatom)): 391 mg/l
 Exposure time: 72 h

DIISOPROPANOLAMINE:

Toxicity to fish : LC50 (Carassius auratus (goldfish)): 1,100 mg/l
 Exposure time: 24 h
 Test Type: static test

BUTYLATED HYDROXY TOLUENE:

Toxicity to fish : LC50 (Fish): Estimated 0.199 mg/l
 Exposure time: 96 h
 Remarks: QSAR

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Daphnia magna)): 0.48 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

M-Factor (Acute aquatic) : 1

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toxicity)

Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 0.053 mg/l
Exposure time: 42 d
Test Type: flow-through test

M-Factor (Chronic aquatic toxicity) : 1

SODIUM HYDROXIDE:
Toxicity to fish : LC50 (Western mosquitofish (Gambusia affinis)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Daphnia magna)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Toxicity to bacteria : Remarks: Not applicable

Ecotoxicology Assessment
Acute aquatic toxicity : Neutralisation will reduce ecotoxic effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

GLYCOL:
Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 5,741 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Bluegill (Lepomis macrochirus)): 7,500 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,192 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l
End point: Biomass
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201

No data available

Persistence and degradability

Components:

Triethylene glycol monomethyl ether, borate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

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BUTYLATED HYDROXY TOLUENE:

Biodegradability : Result: Not readily biodegradable.
 Biodegradation: 4.5 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301C

Physico-chemical removability : Remarks: The product can be degraded by abiotic (e.g. chemical or photolytic) processes.

SODIUM HYDROXIDE:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

GLYCOL:

Biodegradability : aerobic
 Inoculum: activated sludge
 Result: Readily biodegradable.
 Biodegradation: 100 %
 Exposure time: 28 d

No data available

Bioaccumulative potential

Components:

DIISOPROPANOLAMINE:

Partition coefficient: n-octanol/water : log Pow: -0.82

BUTYLATED HYDROXY TOLUENE:

Partition coefficient: n-octanol/water : log Pow: 4.17 (21 °C)

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., Harmful 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

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handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
-----------	----------------------	---------------	--------------------	---------------	------------------------------

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

UN_DG

Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant		no
------------------	--	----

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	: SODIUM HYDROXIDE
Emergency Decree on Controlling the Use of Volatile Substances B.E. 2533	: Not applicable

Other international regulations

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

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

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

- H290 May be corrosive to metals.
- H303 May be harmful if swallowed.
- H313 May be harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H361d Suspected of damaging the unborn child.
- H400 Very toxic to aquatic life.
- H402 Harmful to aquatic life.
- H410 Very toxic 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 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.

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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

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)