

VALVOLINE® SYNTHETIC DOT
3&4 BRAKE FLUID 601458

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone	1-800-ASHLAND (1-800-274-5263)

Product name	VALVOLINE® SYNTHETIC DOT 3&4 BRAKE FLUID
Product code	601458
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid,, yellow

WARNING! MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE DERMATITIS AND BURNS.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Skin absorption of this material (or a component) may be increased through injured skin. Although rare, skin contact with ethylene glycol may cause allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects).

Ingestion

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Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Liver, kidney and brain damage in humans has resulted from swallowing lethal or near-lethal amounts of ethylene glycol. Ingestion of medications contaminated with diethylene glycol has caused kidney failure and death in humans. Products containing diethylene glycol should be considered toxic by ingestion.

Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma-like conditions), skin, Liver, kidney, Central nervous system, Upper respiratory tract

Symptoms

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), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), pain in the abdomen and lower back, acute kidney failure (sudden slowing or stopping of urine production), lung edema (fluid buildup in the lung tissue)

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: male reproductive effects, kidney damage, liver damage, central nervous system damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: liver damage, kidney damage

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

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This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
POLYETHYLENE GLYCOL	9004-74-4	>=20-<30%
MONOMETHYL ETHER TRIETHYLENE GLYCOL	112-35-6	>=20-<30%
MONOMETHYL ETHER TRIETHYLENE GLYCOL	143-22-6	>=15-<20%
MONOBUTYL ETHER TETRAETHYLENE GLYCOL	112-60-7	>=5-<10%
DIETHYLENE GLYCOL	111-46-6	>=1.5-<5%
TRIETHYLENE GLYCOL	112-27-6	>=1.5-<5%
SODIUM HYDROXIDE	1310-73-2	>=1-<1.5%
DIISOPROPANOLAMINE	110-97-4	>=1-<1.5%

4. FIRST AID MEASURES**Eyes**

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

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If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: Ingestion or other significant exposure to this material (or a component) may cause metabolic acidosis.

Treatment: Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol, diethylene glycol and methanol poisoning.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO₂), Alcohol-resistant foam, Water spray
Carbon dioxide (CO₂), Dry chemical

Hazardous combustion products

Alcohols, Aldehydes, ethers, carbon dioxide and carbon monoxide, nitrogen oxides (NO_x), toxic fumes, various hydrocarbons

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

Flammability Class for Flammable Liquids

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

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Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

SODIUM HYDROXIDE		1310-73-2
ACGIH	Ceiling Limit Value:	2 mg/m3
NIOSH	Ceiling Limit Value and Time Period (if specified):	2 mg/m3
OSHA Z1	Permissible exposure limit	2 mg/m3

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

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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.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist. Maintain eye wash station near work area.

Skin and body protection

Wear resistant gloves (consult your safety equipment supplier).
Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	No data
Colour	yellow
Odour	ammoniacal
Boiling point/boiling range	230.00 °C / 446 °F @ 760.00 mmHg
pH	(Average) 8.0
Flash point	250 °F / 121 °C, Closed Cup
Evaporation rate	No data
Explosion limits	No data
Vapour pressure	0.16 hPa @ 68 °F / 20 °C
Vapour density	(>) 10 (AIR=1)
Density	(Average) 1.055 g/cm ³ @ 68 °F / 20 °C 8.76 lb/gal

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Solubility	soluble in water
Partition coefficient: n-octanol/water	No data
log Pow	no data available
Autoignition temperature	419 °F / 215 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Avoid heat, open flame, and prolonged storage at elevated temperatures.

Incompatible products

Avoid contact with: acids, acid anhydrides, Alkaline earth metals, Alkali metals, aluminum, salts of strong bases, strong bases, strong oxidizing agents, Sulphur compounds

Hazardous decomposition products

acetaldehyde, Alcohols, Aldehydes, carbon dioxide and carbon monoxide, dioxolanes, ethers, formaldehyde, ketones, nitrogen oxides (NOx), Organic acids, various hydrocarbons

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

POLYETHYLENE GLYCOL MONOMETHYL ETHER	no data available
TRIETHYLENE GLYCOL MONOMETHYL ETHER	LD 50 Rat: 11,800 mg/kg
TRIETHYLENE GLYCOL MONOBUTYL ETHER	LD 50 Rat: 5,300 mg/kg
TETRAETHYLENE GLYCOL	LD 50 Rat: ca. 30,000 mg/kg

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	LD 50 Rat: 32,800 mg/kg
DIETHYLENE GLYCOL	LD 50 Rat: 12,565 mg/kg
TRIETHYLENE GLYCOL	LD 50 Rat: 15,000 - 22,000 mg/kg
SODIUM HYDROXIDE	LD Lo Rabbit: 500 mg/kg
DIISOPROPANOLAMINE	LD 50 Rat: 2,000 mg/kg

Acute inhalation toxicity

POLYETHYLENE GLYCOL MONOMETHYL ETHER	no data available
TRIETHYLENE GLYCOL MONOMETHYL ETHER	no data available
TRIETHYLENE GLYCOL MONOBUTYL ETHER	no data available
TETRAETHYLENE GLYCOL	no data available
DIETHYLENE GLYCOL	LC Lo Mouse: 130 mg/m ³ , 2 h
TRIETHYLENE GLYCOL	LC 50 Rat: > 3.9 mg/l , 4 h
SODIUM HYDROXIDE	no data available
DIISOPROPANOLAMINE	no data available

Acute dermal toxicity

POLYETHYLENE GLYCOL MONOMETHYL ETHER	no data available
TRIETHYLENE GLYCOL MONOMETHYL ETHER	no data available
TRIETHYLENE GLYCOL MONOBUTYL ETHER	LD 50 Rabbit: 3,502 mg/kg
TETRAETHYLENE GLYCOL	LD 50 Rabbit: 22,460 mg/kg
DIETHYLENE GLYCOL	LD 50 Rabbit: 11,890 mg/kg
TRIETHYLENE GLYCOL	LD 50 Rabbit: > 22.6 g/kg
SODIUM HYDROXIDE	LD 50 Rabbit: 1,350 mg/kg
DIISOPROPANOLAMINE	LD 50 Rabbit: 8,000 mg/kg

12. ECOLOGICAL INFORMATION

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Aquatic toxicity

Acute and Prolonged Toxicity to Fish

No data

Acute Toxicity to Aquatic Invertebrates

No data

Environmental fate and pathways

No data

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

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.

15. REGULATORY INFORMATION

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SARA Hazard Classification Acute Health Hazard

SARA 313 Component(s)

TRIETHYLENE GLYCOL MONOMETHYL ETHER	112-35-6	30.00%
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	18.00%

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New Jersey RTK Label Information

Triethylene glycol monomethyl ether, borate	30989-05-0
POLYETHYLENE GLYCOL MONOMETHYL ETHER	9004-74-4
TRIETHYLENE GLYCOL MONOMETHYL ETHER	112-35-6
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6
POLYOXYETHYLENE MONOBUTYL ETHER	9004-77-7
SODIUM HYDROXIDE	1310-73-2

Pennsylvania RTK Label Information

Triethylene glycol monomethyl ether, borate	30989-05-0
POLYETHYLENE GLYCOL MONOMETHYL ETHER	9004-74-4
TRIETHYLENE GLYCOL MONOMETHYL ETHER	112-35-6
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6
POLYOXYETHYLENE MONOBUTYL ETHER	9004-77-7
TETRAETHYLENE GLYCOL	112-60-7
DIETHYLENE GLYCOL	111-46-6
TRIETHYLENE GLYCOL	112-27-6
Pentaethylene glycol	4792-15-8
SODIUM HYDROXIDE	1310-73-2
DIISOPROPANOLAMINE	110-97-4

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302) 66671 lbs

Reportable quantity - Components

POLYETHYLENE GLYCOL	9004-74-4	none
MONOMETHYL ETHER		
TRIETHYLENE GLYCOL	112-35-6	none
MONOMETHYL ETHER		
TRIETHYLENE GLYCOL	143-22-6	none
MONOBUTYL ETHER		
TETRAETHYLENE GLYCOL	112-60-7	none
DIETHYLENE GLYCOL	111-46-6	none
TRIETHYLENE GLYCOL	112-27-6	none
SODIUM HYDROXIDE	1310-73-2	1000 lbs
DIISOPROPANOLAMINE	110-97-4	none

	Health	Flammability	Reactivity	Other
HMIS	2	1	0	
NFPA	1	1	0	

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16. 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 MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).