

Safety Data Sheet

DATE ISSUED: July 29, 2022

DATE REVISED: April 18, 2023

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

Product identifier

Trade name: DOT 4 LV BRAKE FLUID

Other means of identification: No other identifiers

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

Application of the substance / the mixture: Brake fluid.

Uses advised against: No further relevant information available.

Details of the supplier of the Safety Data Sheet

Manufacturer/Supplier: Professional Series, LLC.
375 Ivyland Road, Suite
Warminster, PA 18974

Emergency telephone number:

24-Hour Emergency Contact: 1-800-424-9300

Section 2 - Hazard Identification

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Reproductive toxicity - Category 2

Label elements

Hazard Pictograms:



Signal word: WARNING

Hazards

Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

IF exposed or concerned: Get medical advice/ attention.

Storage

Store locked up.

Disposal

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

Other hazards

No data available

Further information

The values listed below represent the percentages of ingredients of unknown toxicity.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 36.026%

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 3 - Composition / Information on Ingredients

Component	CASRN	Concentration
Triethylene glycol monomethyl ether	112-35-6	> 40.0 - < 50.0 %
Triethylene glycol monomethyl ether borate ester	30989-05-0	> 30.0 - < 40.0 %
Triethylene glycol monobutyl ether	143-22-6	>10.0 - <20.0%
Diisopropanolamine	110-97-4	< 5.0%
Polyethylene glycol monobutyl ether	9004-77-7	< 5.0%
Diethylene glycol monomethyl ether	111-77-3	< 1.0 %
Di-t-butyl-p-cresol	128-37-0	< 1.0 %

Section 4 - First Aid Measures

Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5 - Fire Fighting Measures

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Nitrogen oxides.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 5 - Fire Fighting Measures (continued)

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Spills or discharge to natural waterways is likely to kill aquatic organisms. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Sand. Vermiculite. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Section 7 - Storage and Handling

Precautions for safe handling

Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel.

Storage stability

Storage temperature: > 5 - < 35 °C (> 41 - < 95°F)

Shelf life: Use within 24 Month

Section 8 - Exposure Controls/Personal Protection

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Diisopropanolamine	Dow IHG	TWA	10 ppm
Diethylene glycol monomethyl ether	Dow IHG Further information: SKIN: Absorbed via skin	TWA	10 ppm
Di-t-butyl-p-cresol	ACGIHI Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen	TWA Inhalable fraction and vapor	2 mg/m3
	CAL PEL	PEL	10 mg/m3

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 8 - Exposure Controls/Personal Protection (continued)

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). **NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

SECTION 9 - Physical and chemical properties

Appearance

Physical state	Liquid
Color	Yellow to brown
Odor	Ammoniacal
Odor Threshold	No test data available
pH7 .1 Estimated	
Melting point/range	No test data available
Freezing point	No test data available
Boiling point (760 mmHg)	269 °C (516 °F) FMVSS 116 Equilibrium Reflux Boiling Point, dry 165 °C (329 °F) FMVSS 116 Equilibrium Reflux Boiling Point, wet
Flash point	138 °C (280 °F) Pensky-Martens Closed Cup ASTM D 93
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	1.05 Estimated
Relative Density (water = 1)	No test data available
Water solubility	1,000 g/L Estimated
Partition coefficient: noctanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	No test data available
Explosive properties	No test data available
Oxidizing properties	No test data available
Molecular weight	No data available
Volatile Organic Compounds	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

Safety Data Sheet

DOT 4 LV BRAKE FLUID

SECTION 10 - Stability and reactivity

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with: Strong acids. Strong oxidizers. Strong bases.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

Section 11 - Toxicological Information

Toxicological information appears in this section when such data is available.

Acute toxicity:

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Single dose oral LOSO has not been determined.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LOSO has not been determined.

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat). The LCSO has not been determined.

Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

May cause slight temporary eye irritation.

Classification based on toxicity data for a compositionally similar material.

Sensitization

For skin sensitization:

For the component(s) tested:

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT -SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

Contains component(s) which did not cause cancer in laboratory animals.

Teratogenicity

In animals, diethylene glycol methyl ether is slightly toxic to the fetus at doses nontoxic to the mother following skin contact; birth defects have been seen only following high oral doses which have little relevance to human exposure.

Reproductive toxicity

In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals.

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 11 - Toxicological Information (continued)

Mutagenicity

Contains a component(s) which were negative in in vitro genetic toxicity studies. Contains component(s) which were negative in animal genetic toxicity studies.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:**Triethylene glycol monomethyl ether****Acute oral toxicity**

LD50, Rat, > 10,500 mg/kg OECD Test Guideline 401

Acute dermal toxicity

LD50, Rabbit, 7,100 mg/kg

Acute inhalation toxicity

An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration. LC50, Rat, 8 Hour, vapour, > 10 mg/l OECD Test Guideline 403

Triethylene glycol monomethyl ether borate ester**Acute oral toxicity**

LD50, Rat, > 2,000 mg/kg OECD Test Guideline 401

Acute dermal toxicity

LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402

Acute inhalation toxicity

The LC50 has not been determined.

Triethylene glycol monobutyl ether**Acute oral toxicity**

LD50, Rat, 5,170 mg/kg

Acute dermal toxicity

LD50, Rabbit, 3,540 mg/kg

Acute inhalation toxicity

As product: The LC50 has not been determined.

Diisopropanolamine**Acute oral toxicity**

LD50, Rat, > 2,000 mg/kg OECD 401 or equivalent No deaths occurred at this concentration.

Acute dermal toxicity

LD50, Rabbit, 8,000 mg/kg

Acute inhalation toxicity

The LC50 has not been determined. No deaths occurred following exposure to a saturated atmosphere.

Polyethylene glycol monobutyl ether**Acute oral toxicity**

Single dose oral LD50 has not been determined.

Based on information for a similar material: May cause nausea and vomiting.

May cause abdominal discomfort or diarrhea. May cause dizziness and drowsiness.

LD50, Rat, 2,630mg/kg

Acute dermal toxicity

Based on information for a similar material: LD50, Rabbit, 3,540 mg/kg

The dermal LD50 has not been determined.

Acute inhalation toxicity

As product: The LC50 has not been determined.

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 11 - Toxicological Information (continued)

Diethylene glycol monomethyl ether

Acute oral toxicity

LD50, Mouse, 7,128 mg/kg

Acute dermal toxicity

LDSO, Rabbit, 9,404 mg/kg

Acute inhalation toxicity

The LCS0 value is greater than the Maximum Attainable Concentration.

LCD, Rat, 6 Hour, vapour, > 1.2 mg/l No deaths occurred at this concentration.

Di-t-butyl-p-cresol

Acute oral toxicity

LD50, Rat, > 6,000 mg/kg OECD Test Guideline 401

Acute dermal toxicity

LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402

No deaths occurred at this concentration.

Acute inhalation toxicity

The LCS0 has not been determined.

Section 12 - Ecological Information

Ecotoxicological information appears in this section when such data is available.

TOXICITY

Triethylene glycol monomethyl ether

Acute toxicity to fish

LC50, Dania rerio (zebra fish), 96 Hour, > 5,000 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, > 500 mg/l, Directive 67/548/EEC, Annex V, C.2.

Acute toxicity to algae/aquatic plants

EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 500 mg/l

NOEC, No species specified, 96 Hour, 1,068 mg/l

Toxicity to bacteria

ECO, activated sludge, static test, 0.5 Hour, Respiration rates., > 2,000 mg/l, activated sludge test (OECD 209)

Triethylene glycol monomethyl ether borate ester

Acute toxicity to fish

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 222.2 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, > 211.2 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

EC50, 72 Hour, > 224.4 mg/l, OECD Test Guideline 201

NOEC, 72 Hour, 224.4 mg/l, OECD Test Guideline 201

Triethylene glycol monobutyl ether

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Leuciscus idus (Golden orfe), static test, 96 Hour, 2,200 - 4,600 mg/l, DIN 38412

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 500 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 62.5 mg/l, OECD Test Guideline 201 or Equivalent

Safety Data Sheet

DOT 4 LV BRAKE FLUID**Toxicity to bacteria**

IC50, Bacteria, static test, 16 Hour, > 5,000 mg/l

Diisopropanolamine**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Brachydanio rerio (zebrafish), static test, 96 Hour, 1,466 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 277.7 mg/l, Directive 84/449/EEC, C.2

Acute toxicity to algae/aquatic plants

EC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 339 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, 125 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, 30 min, > 1,995 mg/l

Polyethylene glycol monobutyl ether**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Based on information for a similar material:
LC50, Fish, semi-static test, 96 Hour, > 1,800 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

Based on information for a similar material:
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 3,200 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

Based on information for a similar material:
ErC50, Scenedesmus capricornutum (fresh water algae), static test, 72 Hour, Growth rate inhibition, 2,490 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

IC50, activated sludge, static test, 16 Hour, Growth inhibition, > 5,000 mg/l

Diethylene glycol monomethyl ether**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 5,741 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 1,192 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Biomass, > 1,000mg/l
OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, 0.5 Hour, > 1,000 mg/l

Di-t-butyl-p-cresol**Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), 96 Hour, > 0.57 mg/l

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 12 - Ecological Information (continued)

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.48 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 0.4 mg/l, Directive 67/548/EEC, Annex V, C.3.
 EC10, Desmodesmus subspicatus (green algae), 72 Hour, 0.4 mg/l, Directive 67/548/EEC, Annex V, C.3.

Toxicity to bacteria

EC50, 3 Hour, > 10,000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.07 mg/l

PERSISTENCE AND DEGRADABILITY

Triethylene glycol monomethyl ether

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation: 100 %
Exposure time: 13 d
Method: OECD Test Guideline 301B

Theoretical Oxygen Demand: 1.75 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	29%
10 d	33%
20 d	71 %

Photodegradation

Atmospheric half-life: 3.2 Hour
Method: Estimated.

Triethylene glycol monomethyl ether borate ester

Biodegradability: Material is readily biodegradable.
 Passes OECD test(s) for ready biodegradability.

Biodegradation: > 70 %
Exposure time: 10 d
Method: OECD Test Guideline 301A

Triethylene glycol monobutyl ether

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). 10-day Window: Fail

Biodegradation: 85 %
Exposure time: 28 d
Method: OECD Test Guideline 301 D or Equivalent
Theoretical Oxygen Demand: 2.10 mg/mg

Diisopropanolamine

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). 10-day Window: Pass

Biodegradation: 94 %
Exposure time: 28 d
Method: OECD Test Guideline 301 For Equivalent

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 12 - Ecological Information (continued)

Theoretical Oxygen Demand:	2.41 mg/mg	
Chemical Oxygen Demand:	1.86 mg/mg	
Biological oxygen demand (BOD)	Incubation Time	BOD
	5 d	3%
	10 d	60%
	20 d	91 %

Photodegradation

Test Type:	Half-life (indirect photolysis)
Sensitization:	OH radicals
Atmospheric half-life:	0.105 d
Method:	Estimated

Polyethylene glycol monobutyl ether

Biodegradability: Based on information for a similar material: Material is expected to be readily biodegradable.
10-day Window: Pass

Biodegradation:	76 %
Exposure time:	28 d
Method:	OECD Test Guideline 301 D or Equivalent

Photodegradation

Sensitization:	OH radicals
Atmospheric half-life:	0.21 d
Method:	Estimated

Diethylene glycol monomethyl ether

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass

Biodegradation:	100 %
Exposure time:	28 d
Method:	OECD Test Guideline 3018 or Equivalent

Theoretical Oxygen Demand: 1.73 mg/mg

Photodegradation

Atmospheric half-life:	4.9 Hour
Method:	Estimated

Di-t-butyl-p-cresol

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail

Biodegradation:	4.5 %
Exposure time:	28 d
Method:	OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 2.98 mg/mg

Chemical Oxygen Demand: 2.25 - 2.27 mg/mg

BIOACCUMULATIVE POTENTIAL

Triethylene glycol monomethyl ether

Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -1.12 at 25 °C

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 12 - Ecological Information (continued)

Triethylene glycol monomethyl ether borate ester

Bioaccumulation: Bioaccumulation is unlikely. No data available

Triethylene glycol monobutyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.51 at 20 °C Measured

Diisopropanolamine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.79 at 20 °C Measured

Bioconcentration factor (BCF): 3 Fish Estimated.

Polyethylene glycol monobutyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.436 at 20 °C Measured

Diethylene glycol monomethyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.47 at 20 °C Measured

Di-t-butyl-p-cresol

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 4.17 - 5.10 Estimated.

Bioconcentration factor (BCF): 598.4 Fish Estimated.

MOBILITY IN SOIL

Triethylene glycol monomethyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 10 Estimated.

Triethylene glycol monomethyl ether borate ester

No relevant data found.

Triethylene glycol monobutyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 10 Estimated.

Diisopropanolamine

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): 43 Estimated.

Polyethylene glycol monobutyl ether

No data available.

Diethylene glycol monomethyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): < 1 Estimated.

Di-t-butyl-p-cresol

Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient (Koc): > 5000 Estimated.

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 13 - Disposal Considerations

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and **compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.**

SECTION 14 - Transport Information

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):
Transport in bulk

Not regulated for transport
Consult IMO regulations before transporting ocean bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15 - Regulatory Information

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Reproductive toxicity

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

The following components are subject to reporting levels established by SARA Title 111S, section 313:

Components	CASRN
Triethylene glycol monomethyl ether	112-35-6
Triethylene glycol monobutyl ether	143-22-6
Diethylene glycol monobutyl ether	112-34-5
Diethylene glycol monomethyl ether	111-77-3
Ethylene glycol monobutyl ether	111-76-2

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This material does not contain any components with a CERCLA RQ.

Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Triethylene glycol monomethyl ether	112-35-6
Triethylene glycol monobutyl ether	143-22-6
Diisopropanolamine	110-97-4

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 15 - Regulatory Information (continued)

California Prop. 65

WARNING: This product can expose you to chemicals including 2-Methoxyethanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Section 16- Other Information

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact.

Hazard Rating System

NFPA

Health Hazards	Flammability	Instability
2	1	0

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

- ACGIH USA. ACGIH Threshold Limit Values (TLV)
- CAL PEL California permissible exposure limits for chemical contaminants (Title 8, Article 107)
- Dow IHG Dow Industrial Hygiene Guideline
- PEL Permissible exposure limit
- TWA 8-hour, time-weighted average

Full text of other abbreviations

- AIC - Australian Inventory of Industrial Chemicals
- ASTM - American Society for the Testing of Materials; bw - Body weight
- CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
- CMR - Carcinogen, Mutagen or Reproductive Toxicant
- DIN - Standard of the German Institute for Standardisation
- DOT - Department of Transportation
- DSL - Domestic Substances List (Canada)
- ECx - Concentration associated with x% response
- EHS - Extremely Hazardous Substance
- ELx - Loading rate associated with xo/o response
- EmS - Emergency Schedule;
- ENCS - Existing and New Chemical Substances (Japan)
- ErCx - Concentration associated with x% growth rate response
- ERG - Emergency Response Guide
- GHS - Globally Harmonized System
- GLP - Good Laboratory Practice
- HMIS - Hazardous Materials Identification System
- IARC - International Agency for Research on Cancer
- IATA - International Air Transport Association
- IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
- IC50 - Half maximal inhibitory concentration
- ICAO - International Civil Aviation Organization
- IECSC - Inventory of Existing Chemical Substances in China
- IMDG - International Maritime Dangerous Goods
- IMO - International Maritime Organization
- ISHL - Industrial Safety and Health Law (Japan)
- ISO - International Organisation for Standardization
- KECI - Korea Existing Chemicals Inventory
- LC50 - Lethal Concentration to 50 % of a test population
- LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)

Safety Data Sheet

DOT 4 LV BRAKE FLUID

Section 16- Other Information

Full text of other abbreviations (continued)

MARPOL - International Convention for the Prevention of Pollution from Ships;

MSHA - Mine Safety and Health Administration

n.o.s. - Not Otherwise Specified

NFPA - National Fire Protection Association

NO(A)EC - No Observed (Adverse) Effect Concentration

NO(A)EL - No Observed (Adverse) Effect Level

NOELR - No Observable Effect Loading Rate

NTP - National Toxicology Program

NZIoC - New Zealand Inventory of Chemicals

OECD - Organization for Economic Co-operation and Development

OPPTS - Office of Chemical Safety and Pollution Prevention

PBT - Persistent, Bioaccumulative and Toxic substance

PICCS - Philippines Inventory of Chemicals and Chemical Substances

(Q)SAR - (Quantitative) Structure Activity Relationship

RCRA - Resource Conservation and Recovery Act

REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

RQ - Reportable Quantity

SADT - Self-Accelerating Decomposition Temperature

SARA - Superfund Amendments and Reauthorization Act

SDS - Safety Data Sheet

TCSI - Taiwan Chemical Substance Inventory

TECI - Thailand Existing Chemicals Inventory

TSCA - Toxic Substances Control Act (United States)

UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company. DDP Specialty Electronic Materials US, LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.