DOT 4 Brake Fluid

Safety Data Sheet

In accordance with Hazard Classification and Communication System of Hazardous Substances B.E. 2555 (2012)

Revision Date:: 28/05/2021 Date of Issue:: 04/08/2016 Version:: 2.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: DOT 4 Brake Fluid

Intended Use of the Product

No use is specified.

Name, Address, and Telephone of the Responsible Party

Company

TC Chemicals, LLC
1871 Mykawa Road
Pearland, TX 77581
PH: 281-412-0275
sds@thirdcoast.com

Emergency Telephone Number

Emergency number : +1-800-424-9300
CHEMTREC – TOLL FREE 24 HOUR EMERGENCY TELEPHONE NUMBER

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS TH)

Health Hazards Serious eye damage/eye irritation Category 1

Label Elements

GHS TH labelling

Hazard pictograms (GHS TH) :

GHS05

Signal word (GHS TH) : Danger

Hazard statements (GHS TH) : H318 - Causes serious eye damage

Precautionary statements (GHS TH) : P280 - Wear protective gloves, protective clothing, and eye protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor.

Other Hazards

Other Hazards: Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-TH)**:** Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Concentration(%)	Product identifier
Ethanol, 2-[2-(2-Ethoxyethoxy)Ethoxy]-, Ester With Boric Acid (H3bo3)	30 – 45%	(CAS-No.) 68550-96-9
Triethylene Glycol Monomethyl Ether	28 – 31%	(CAS-No.) 112-35-6
Polyethylene Glycol Methyl Ether	14 – 28%	(CAS-No.) 9004-74-4
Diethylene Glycol	≤ 5%	(CAS-No.) 111-46-6
Triethylene Glycol Monobutyl Ether	≤ 5%	(CAS-No.) 143-22-6
Tetraethylene Glycol	≤ 3%	(CAS-No.) 112-60-7
Polyethylene Glycol	≤ 3%	(CAS-No.) 25322-68-3
3,6,9,12-Tetraoxahexadecan-1-Ol	≤ 3%	(CAS-No.) 1559-34-8

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SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Immediately drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Immediately rinse with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Obtain medical attention. Do NOT induce vomiting.

Personal Protection in First Aid and Measures: Use appropriate personal protective equipment (PPE).

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes serious eye damage.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: Prolonged exposure may cause skin irritation.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None known.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, fog, carbon dioxide (CO_2), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Thermal decomposition generates: Carbon oxides (CO, CO_2).

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not breathe vapor, mist or spray. Do not get in eyes, on skin, or on clothing.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Clean up spills immediately and dispose of waste safely.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

Specific End Use(s)

No use is specified.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Thermal Hazard Protection: Not required for normal conditions of use.

Environmental Exposure Controls: Avoid release to the environment.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Slight yellow to yellow
Odor	:	Mild odor
Odor Threshold Limit	:	Not available
pH	:	8.6 (25% Aqueous Solution)
Melting Point/Freezing Point	:	< -50 °C (-58 °F)
Initial Boiling Point and Boiling Range	:	> 232 °C (449.6 °F)
Flash Point	:	121 °C (249.8 °F) (PMCC)
Auto-ignition Temperature	:	310 °C (590 °F)
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not available

Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Vapor Density	:	Not available
Relative Density	:	1.06
Specific Gravity	:	Not available
Solubility	:	Soluble in water.
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight, extremely high or low temperatures, and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

Hazardous Decomposition Products: Thermal decomposition may produce: Carbon oxides (CO, CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Likely Routes Of Exposure: Dermal, Ingestion, Inhalation.

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Not classified.

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified.

pH: 8.6 (25% Aqueous Solution)

Eye Damage/Irritation: Causes serious eye damage.

pH: 8.6 (25% Aqueous Solution)

Respiratory or Skin Sensitization: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None known.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Triethylene glycol monomethyl ether (112-35-6)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	7100 mg/kg
Polyethylene glycol methyl ether (9004-74-4)	
LD50 Oral Rat	22 ml/kg
LD50 Dermal Rabbit	> 20 ml/kg
Diethylene glycol (111-46-6)	
LD50 Oral Rat	1120 mg/kg
LD50 Dermal Rabbit	11890 mg/kg

LC50 Inhalation Rat	> 4600 mg/m³ (Exposure time: 4 h)
Triethylene glycol monobutyl ether (143-22-6)	
LD50 Oral Rat	5300 mg/kg
LD50 Dermal Rabbit	3540 mg/kg
Tetraethylene glycol (112-60-7)	
LD50 Oral Rat	29 g/kg
LD50 Dermal Rabbit	20 ml/kg
Polyethylene glycol (25322-68-3)	
LD50 Oral Rat	22 g/kg
LD50 Dermal Rabbit	> 20 g/kg
ATE TH (oral)	47,000.00 mg/kg body weight
3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)	
LD50 Oral Rat	5175 mg/kg
LD50 Dermal Rat	> 4000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Not classified.

Triethylene glycol monomethyl ether (112-35-6)	
LC50 Fish 1	> 5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	> 500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	> 10000 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
Diethylene glycol (111-46-6)	
LC50 Fish 1	75200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	84000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
Triethylene glycol monobutyl ether (143-22-6)	
LC50 Fish 1	2400 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [1]	> 500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	2400 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
Tetraethylene glycol (112-60-7)	
LC50 Fish 1	> 1000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 - Crustacea [1]	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)	
EC50 - Crustacea [1]	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Persistence and Degradability

DOT 4 Brake Fluid	
Persistence and Degradability	Not established.

Bioaccumulative Potential

DOT 4 Brake Fluid	
Bioaccumulative Potential	Not established.
Triethylene glycol monomethyl ether (112-35-6)	
Partition coefficient n-octanol/water (Log Pow)	1.13 (at 25 °C)
Diethylene glycol (111-46-6)	
BCF Fish 1	100 – 180
Partition coefficient n-octanol/water (Log Pow)	-1.98 (at 25 °C)
Triethylene glycol monobutyl ether (143-22-6)	
BCF Fish 1	(no significant bioaccumulation)

Partition coefficient n-octanol/water (Log Pow)	0.51 (at 25 °C)

Tetraethylene glycol (112-60-7)	
BCF Fish 1	(no bioconcentration expected)

3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)	
BCF Fish 1	(no significant bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Sewage Disposal Recommendations: Do not empty into drains. Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORTATION INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

In Accordance with UNRTDG Not regulated for transport

In Accordance with IATA Not regulated for transport

Special precautions for user

Special Transport Precautions : Avoid release to the environment.

Transport in Bulk (According to Annex II of Marpol 73/78 and IBC code) Not available

SECTION 15: REGULATORY INFORMATION

National Regulations

Ethanol, 2-[2-(2-ethoxyethoxy)ethoxy]-, ester with boric acid (H3BO3) (68550-96-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Triethylene glycol monomethyl ether (112-35-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

Polyethylene glycol methyl ether (9004-74-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

Diethylene glycol (111-46-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

Triethylene glycol monobutyl ether (143-22-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

Tetraethylene glycol (112-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

Polyethylene glycol (25322-68-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EU NLP (No Longer Polymers) inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (National Chemicals Inventory)

International Agreements

Diethylene glycol (111-46-6)

This chemical is subject to the International Convention for the Prevention of Pollution from Ships (MARPOL)

Tetraethylene glycol (112-60-7)

This chemical is subject to the International Convention for the Prevention of Pollution from Ships (MARPOL)

Polyethylene glycol (25322-68-3)

This chemical is subject to the International Convention for the Prevention of Pollution from Ships (MARPOL)

Thailand Regulations

No additional Information available

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 28/05/2021

Other Information : According to Notification of Ministry of Industry Subject: Hazard Classification and Communication System of Hazardous Substances B.E. 2555 (2012).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Thailand GHS SDS