

**MSDS - Material Safety Data Sheet****Product Name: DOT 3 HEAVY DUTY BRAKE FLUID**

MSDS No.: M4434

SOT

**I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Address:** 600 RADIATOR ROAD**City, ST Zip:** INDIAN TRAIL, NC 28079**Country:****Contact:** Robert Geer**Information Telephone Number:** 704-684--181 1**Emergency Contact:** Rocky Mountain Poison Control Center**Emergency Telephone Number:** 303-623-5716**Emergency Restrictions:****Product Name:** DOT 3 HEAVY DUTY BRAKE FLUID**MSDS No.:** M4434**Issue Date:** 09/30/2009**Supersedes Date:** 03/20/2009**II. Hazards Identification:****EMERGENCY OVERVIEW**

CAUTION: HARMFUL IF SWALLOWED. EYE IRRITANT.

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Potential Health Effects****Route(s) of Entry:**

Absorption, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**

Exposure to high concentrations of mist generated at room temperature may cause lung injury and liver/kidney dysfunction. Skin contact may cause sensitization and allergic skin reaction.

**Signs and Symptoms:****EYE CONTACT:** Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, marked excess redness and swelling of the conjunctiva.**SKIN CONTACT:** Prolonged or repeated contact may cause discomfort and local redness. Prolonged or repeated contact may cause defatting and drying of the skin.**INHALATION:** Short-term health effects are not expected from vapor generated at ambient temperature.**INGESTION:** Slightly toxic. May cause abdominal discomfort, nausea, and vomiting. May produce central nervous system depression and kidney damage.**Medical Conditions Generally Aggravated by Exposure:**

Skin contact may aggravate an existing dermatitis. Pre-existing skin, eye, and respiratory disorders may be aggravated by exposure to this product.

**Other Health Warnings:**

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

**Potential Environmental Effects**

Not Available

**III. Composition/Information on Ingredients:**

Chemical Name	CAS No.	% Range	Trade Secret
2-Butoxyethoxy-2-ethanol	112-34-5	5.0 - 15.0	
Diethylene Glycol	111-46-6	<5.0	
Diethylene glycol methylether	111-77-3	<5.0	
Diethylene glycol monoethyl ether	111-90-0	5.0 - 20.0	
Diisopropanolamine	110-97-4	<3.0	
Pentaethylene Glycol	4792-15-8	<10.0	
Phosphoric acid	7664-38-2	<1.0	
Poly(ethylene oxide)	25322-68-3	5.0 - 50.0	
Polyalkylene glycol monobutyl ether	9038-95-3	5.0 - 20.0	

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Polyethylene glycol monobutyl ether	9004-77-7	5.0 - 20.0
Polyethylene glycol monomethyl ether	9004-74-4	5.0 - 20.0
Sodium hydroxide	1310-73-2	<1.0
Sodium phosphate, tribasic	7601-54-9	<5.0
Tetraethylene Glycol	112-60-7	>1.0 - <20.0
Tetraethylene Glycol Monomethyl Ether	23783-42-8	5.0 - 20.0
Trade Secret Inhibitor Package	Proprietary	<3.0
Triethylene glycol	112-27-6	>1.0 - <15.0
Triethylene glycol monobutyl ether	143-22-6	5.0 - 20.0
Triethylene glycol monoethyl ether	112-50-5	5.0 - 50.0
Triethylene glycol monomethyl ether	112-35-6	5.0 - 20.0

**IV. First Aid Measures:****Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.

Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.

Inhalation: Remove to fresh air. If breathing becomes difficult give oxygen and get prompt medical attention. If breathing stops, give artificial respiration and get prompt medical attention.

Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately.

**Note to Physicians:**

N/E

**V. Fire Fighting Measures:****Suitable Extinguishing Media:**

Water Fog or Fine Spray, Foam, Carbon Dioxide and Dry Chemical fire extinguishers.

**Unsuitable Extinguishing Media:**

Do not use forced water stream as this could cause the fire to spread.

**Products of Combustion:**

Carbon dioxide, carbon monoxide, nitrogen oxides and smoke.

**Protection of Firefighters:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**VI. Accidental Release Measures:****Personal Precautions:**

Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed.

**Environmental Precautions:**

Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred.

**Methods for Containment:**

Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc).

**Methods for Cleanup:**

Use a non-sparking scoop and tools, place contaminated material into an approved chemical waste container. Where possible, vacuum spilled liquid using an explosion proof vacuum to recover material.

**Other Information:**

Ventilate area of leak or spill. Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred.

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**VII. Handling and Storage:****Handling Precautions:**

Avoid contact with eyes, skin, and clothing. Avoid repeated breathing of mist. Keep containers closed. Use with adequate ventilation. Wash thoroughly after handling.

**Storage Precautions:**

Store in cool, dry area away from heat sources. Avoid high temperatures in the presence of strong bases, acids, strong oxidizing agents. Do not mix this product with nitrites or other nitrosating agent because nitrosamines may be formed. Keep containers tightly closed.

**VIII. Exposure Controls/Personal Protection:**

Chemical Name	OSHA PEL	ACGIH TLV	Other Limits
Diethylene Glycol	N/E	N/E	50 ppm
Triethylene glycol monoethyl ether	N/E	N/E	Not Available
Triethylene glycol monobutyl ether	N/E	N/E	Not Available
Poly(ethylene oxide)	N/E	N/E	10 mg/m3
Polyethylene glycol monobutyl ether	N/E	N/E	Not Available
Triethylene glycol monomethyl ether	N/E	N/E	Not Available
Polyethylene glycol monomethyl ether	N/E	N/E	Not Available
2-Butoxyethoxy-2-ethanol	N/E	N/E	Not Available
Diethylene glycol monoethyl ether	N/E	N/E	Not Available
Tetraethylene Glycol Monomethyl Ether	N/E	N/E	Not Available
Polyalkylene glycol monobutyl ether	N/E	N/E	Not Available
Diethylene glycol methylether	N/E	N/E	Not Available
Trade Secret Inhibitor Package	N/E	N/E	Not Available
Triethylene glycol	N/E	N/E	100 mg/m3
Diisopropanolamine	Not Available	Not Available	10 ppm
Sodium hydroxide	2 mg/m3	2 mg/m3	Not Available
Sodium phosphate, tribasic	N/E	N/E	Not Available
Tetraethylene Glycol	N/E	N/E	Not Available
Pentaethylene Glycol	Not Available	Not Available	10 mg/m3
Phosphoric acid	1 mg/m3	1 mg/m3	Not Available

**Engineering Controls:**

General (mechanical) room ventilation is expected to be satisfactory. Avoid breathing mist.

As Ethylene Glycol Vapors ACGIH -TLV recommends a ceiling level of 39.4 ppm (v)  
OSHA - PEL recommends a ceiling level of 50 ppm (v)

**Personal Protective Equipment:**

Safety glasses and goggles for bulk handling. Use nitrile or neoprene gloves. Other protective equipment: eye bath and shower.

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**IX. Physical and Chemical Properties:**

Boiling Point: &gt;401°F

Boiling Range: N/D

Solubility In Water: Soluble

Flash Point: 270°F

Odor Threshold: N/D

Vapor Density (AIR = 1): 6

pH Range: N/A

Decomposition Temp: N/D

Lower Explosive Limit: ND

Specific Gravity (H2O = 1): 1.04

Other Information: N/D

Melting Point: NA

Freezing Point: N/D

Evaporation Rate (Butyl Acetate = 1): &lt;0.01

Flash Point Method: TCC

Appearance and Odor: Clear colorless to yellow with mild ether like odor

Vapor Pressure (mm Hg.): &lt;0.1

Partition Coefficient: N/D

Auto-Ignition Temp: N/D

Upper Explosive Limit: ND

**X. Stability and Reactivity:****Stability:**

Stable

**Conditions to Avoid:**

Avoid heat sources.

**Incompatible Materials:**

Avoid contact with: strong acids, strong bases and strong oxidizers.

**Hazardous Decomposition Products:**

Carbon monoxide. Oxides of nitrogen. Aldehydes, ketones and organic acids.

**Possibility of Hazardous Reactions:**

Will not occur.

**XI. Toxicological Information:**

Contains one or more amines which may react with nitrites to form nitrosamines.

**XII. Ecological Information:**

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

**XIII. Disposal Considerations:**

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Do not dump into any sewers, on the ground, or into any body of water. All disposal of unused product must be in compliance with all local, state government and federal laws and regulations

**XIV. Transport Information:**

Shipping Name: Not Available

DOT Hazard Class: Not Available

UN/NA#: Not Available

**Transportation Information:**

DOT Subsidiary Hazard Class: Not Available

Packing Group: Not Available

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U.S. Department of Transportation (DOT)

Non-Bulk: Not Regulated

Bulk: Not Regulated

Air: IATA Regulated: no

International Information:

Vessel: IMDG Regulated: no

Air: ICAO Regulated: no

**XV. Regulatory Information:**

SARA 313 Reportable Chemicals.

Triethylene Glycol Monobutyl Ether (143-22-6)

2-Butoxyethoxy-2-ethanol (112-34-5)

Triethylene glycol monomethyl ether (112-35-6)

Triethylene glycol monoethyl ether (112-50-5)

USA TSCA: All chemicals used are listed on the TSCA Inventory.

State RTK Chemicals:

Diethylene Glycol (111-46-6)

Triethylene Glycol Monobutyl Ether (143-22-6)

Diethylene Glycol Monobutyl Ether (112-34-5)

Triethylene Glycol Monomethyl Ether (112-35-6)

Diethylene Glycol Methyl Ether (111-77-3)

Triethylene glycol monoethyl ether (112-50-5)

Triethylene glycol (112-27-6)

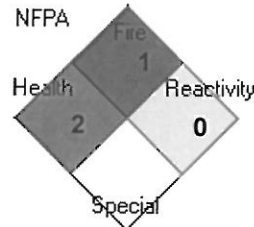
Diisopropanolamine (110-97-4)

Sodium hydroxide (1310-73-2)

Sodium phosphate (7601-54-9)

**XVI. Other Information:**Chemical State:  Liquid  Gas  SolidChemical Type:  Pure  Mixture

Hazard Category:

 Acute  Chronic  Fire  
 Pressure  Reactive**Additional Manufacturer Warnings:**

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

**Additional Product Information:**

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