

MATERIAL SAFETY DATA SHEET

1. Chemical Product

Product Name SPEC OIL BRAKE FLUID DOT 4

Product Use Brake Fluids – For specific applications advice see appropriate Technical Data Sheet or consult our company representative.

2. Composition / Information On Ingredients

Chemical Name	Cas- no.	Weight %	Symbol Codes	R-Phrase Numbers
2,2-oxybisethanol (Diethylene glycol)	111-46-6	5-10		
Poly (oxy-1,2-ethanediyl), a-butyl-w-hydroxy-	9004-77-7	10-15		
2-(2-butoxyethoxy) ethanol	112-34-5	1-5		
di-isopropanolamine	110-97-4	1-5		

3. Hazards Identification

Emergency response data:	Yellow Amber Liquid. DOT ERG No.- Not applicable
Potential health effects	
Note	<p>DANGER!</p> <p>Harmful if swallowed.</p> <p>Inhalation causes headaches, dizziness, drowsiness, nausea and may lead to unconsciousness.</p> <p>Causes eye irritation.</p> <p>Causes skin irritation.</p> <p>Do not ingest. Avoid contact with eyes, skin and clothing. Do not breathe vapour or mist. Keep container closed. Use only with adequate ventilation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and or dermatitis. Wash thoroughly after handling.</p>
Routes of entry	Skin contact. Eye contact. Inhalation. Ingestion.
Health effects	
Eyes	Causes eye irritation.
Skin	Causes skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and or dermatitis.
Inhalation	Over-exposure by inhalation may cause respiratory irritation. Inhalation causes Headaches, dizziness, drowsiness and nausea. May lead to unconsciousness.
Ingestion	Harmful if swallowed. Symptoms similar to alcohol intoxication. Contains material which may cause damage to the kidneys. See toxicological information (section 11).
Medical Conditions aggravated by overexposure	None Identified.

See Section 11 for further health effects / toxicological data

4. First Aid Measures

Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Skin contact	Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact	Flush thoroughly with water. If irritation occurs call a doctor.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

5. Fire-Fighting Measures

Flammability of the product	May be combustible at high temperature.
Auto-ignition temperature	n/a
Explosion limits	n/a
Products of combustion	These products are carbon oxides, nitrogen oxides.
Unusual fire/explosion hazards	This material is not explosive as defined by established regulatory criteria
Fire-fighting media and instructions	In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. Do not use water jet.
Protective clothing (fire)	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Special remarks on fire hazards	None

6. Accidental Release Measures

Environmental precautions and clean-up methods

If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills like spilled material or otherwise contain material to ensure runoff does not reach a waterway Place spilled material in an appropriate container for disposal.

Personal protection in case of a large spill

Chemical splash goggles. Chemical resistant protective suit. Boots. Chemical resistant gloves. Vapour respirator or a self-contained breathing apparatus. Suggested protective clothing might not be sufficient; consult a specialist Before handling this product.

CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

7. Handling And Storage

Safe handling advice

Do not ingest. Avoid contact with skin and clothing. Avoid contact with eyes. Use only with adequate ventilation. Avoid breathing vapour or mist. Wash thoroughly after handling.

Storage information

Keep containers closed when not in use. Do not store in open or unlabelled containers. Do not store near sources, sparks, flames, strong oxidizing agents and combustible materials.

8. Exposure Controls / Personal Protection

Occupational Exposure Limits (OELs)

Components	Cas- no.	Source	TWA	Value	Notations
2,2-oxybisethanol (Diethylene glycol)	None assigned				
Poly (oxy-1,2-ethanediyl), a-butyl-w-hydroxy-	None assigned				
2-(2-butoxyethoxy) ethanol	None assigned				
di-isopropanolamine	None assigned				

Some states may enforce more stringent exposure limits.

Personal Protection Equipment (PPE)

Control measures	Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.
Respiratory protection	Use only with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.
Eye protection	Avoid contact with eyes; chemical type goggles should be worn.
Skin and body protection	Avoid contact with skin and clothing. Wear suitable protective clothing.
Hands	<p>Wear gloves that cannot be penetrated by chemicals or oils.</p> <p>Recommended: Nitrile gloves.</p> <p>The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier / manufacturer and with a full assessment of the working conditions.</p> <p>Consult your supervisor or S.O.P. for special handling directions.</p> <p>Consult local authorities for acceptable exposure limits.</p>

9. Physical And Chemical Properties

Appearance	Liquid
Colour	Pale Amber
Odour	Neutral
pH	12-14
Heat of combustion	Not available
Boiling point / range	275 °C
Solubility	Insoluble in water
Viscosity, kinematic	1.5mm ² /s @ 100 °C (ASTM D445) 1100mm ² /s @ - 40 °C (ASTM D445)

10. Stability And Reactivity

Stability	Stable
Condition to avoid	Not available
Materials to avoid	Oxidizing materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Will not occur.

11. Toxicological Information

Acute toxicity	Ethylene glycol: ingestion of ethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, convulsions and death. The estimated human lethal dose is approximately 1ml/kg (about ½ cup for an adult). Vapour from hot operations or an aerosol can cause eye a respiratory irritation. Birth defects were reported in laboratory animal fed ethylene glycol repeatedly in large amounts based on these studies, there may be a potential for birth defects following ingestion of ethylene glycol by pregnant woman.
Chronic toxicity Carcinogenic effects	No component of this product at levels greater than 0.1 % is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1 % is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).
Mutagenic effects	No component of this product at levels greater than 0.1 % is classified by established regulatory criteria as a mutagen.
Reproductive effects	No component of this product at levels greater than or equal to 0.1 % is classified by established regulatory criteria as a reproductive toxin.
Teratogenic effects	No component of this product at levels greater than 0.1 % is classified by established regulatory criteria as teratogenic or embryotoxic.

12. Ecological Information

Ecotoxicity

No testing has been performed by the manufacturer.

13. Disposal Considerations

Waste information

Avoid contact of spilled material an runoff with oil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, and treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

Consult your local or regional authorities.

14. Transport Information

Not classified as hazardous for transport (DOT,TDG, IMO/IMDG,IATA/ICAO)

15. Regulatory Information

U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted. This product is not regulated under Section 302 of SARA and 40 CFR Part 355. SARA 311/312 MSDS distribution – chemical inventory – hazard identification:
Spec Oil Brake fluid Dot 3: Immediate (Acute) Health Hazard, Delayed (chronic) Health Hazard

SARA 313

	Product Name	CAS number	Concentration
Form R-Reporting requirements	2-(2-butoxyethoxy) ethanol	112-34-5	0-2.99
Supplier notification	2-(2-butoxyethoxy) ethanol	112-34-5	0 – 2.99
	CERCLA Sections 102a/103 Hazardous substances (40 CFR Part 302.4)		
	2-(2-butoxyethoxy) ethanol		

16. Other Information

Note: Spec Oil products do not contain PCBs.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for any other applications. In any case, the following advice should be considered:

FIRST AID	Wash skin with soap and water. Flush eyes with water. If overcome by fumes or vapour, remove to fresh air. If ingested do not induce vomiting. If any symptoms persist seek medical attention. Read and understand the MSDS before using this product.
INJECTION INJURY WARNING	If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.
SAFETY	Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or irritation. Always observe good hygiene measures.

Disclaimer

Information given here in is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind of nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.
