SAFETY DATA SHEET
Dot 4 ESP Brake Fluid

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

1.1. Product identifier

Product name Dot 4 ESP Brake Fluid

Product number 7558

Internal identification GHS22807

REACH registration number n/a Mixture

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

Identified uses Hydraulic fluid for use in automotive brake and clutch systems

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier

Morris Lubricants
Castle Foregate
Shrewsbury
Shropshire
SY1 2EL
+44 (0) 1743 232200
+44 (0) 1743 353584
sds@morris-lubricants.co.uk

1.4. Emergency telephone number

Emergency telephone +44(0)1743 232200 (08.45 - 17.00 GMT)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Not Classified

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Not classified

2.2. Label elements

Hazard statements NC Not Classified

Supplemental label information EUH210 Safety data sheet available on request.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

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3.2. Mixtures

2,2'-OXYBISETHANOL		**5-10%**
CAS number: 111-46-6	EC number: 203-872-2	REACH registration number: 01-2119457857-21-0000

Classification	**Classification (67/548/EEC or 1999/45/EC)**
Acute Tox. 4 - H302 STOT RE 2 - H373	Xn;R22

2-(2-METHOXYETHOXY)ETHANOL		**1-5%**
CAS number: 111-77-3	EC number: 203-906-6	REACH registration number: 01-2119475100-52-0000

Classification	**Classification (67/548/EEC or 1999/45/EC)**
Repr. 2 - H361d	Repr. Cat. 3;R63

2-(2-butoxyethoxy)ethanol		**1-5%**
CAS number: 112-34-5	EC number: 203-961-6	REACH registration number: 01-2119475104-44-0000

Classification	**Classification (67/548/EEC or 1999/45/EC)**
Eye Irrit. 2 - H319	Xi;R36.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Get medical attention if any discomfort continues.

Inhalation If spray/mist has been inhaled, proceed as follows. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

Ingestion Get medical attention if any discomfort continues. Do not induce vomiting.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation Upper respiratory irritation.

Ingestion May cause discomfort if swallowed.

Skin contact Prolonged contact may cause redness, irritation and dry skin.

Eye contact May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Medical personnel seeking to administer first aid are referred to the services of the Poisons Information Service, who can advise in such instances. There is no specific antidote and treatment of over exposure should be directed at control of symptoms and the patient's clinical condition.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Heat from fire could result in drums bursting

Hazardous combustion products Fire may also create other unidentified organic gases some of which may be toxic.

5.3. Advice for firefighters

Protective actions during firefighting Control run-off water by containing and keeping it out of sewers and watercourses. Eye protection should be worn.

Special protective equipment for firefighters Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions For personal protection, see Section 8. In case of spills, beware of slippery floors and surfaces. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Environmental precautions The product is insoluble in water and will spread on the water surface. Avoid the spillage or runoff entering drains, sewers or watercourses. Contain spillage with sand, earth or other suitable non-combustible material.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up In case of spillage on water prevent the spread by use of suitable barrier equipment Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid the formation or spread of mists in the air Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Brake fluid absorbs water from the atmosphere - always keep containers tightly closed. Avoid contamination with any other substances and in particular with mineral oils which are incompatible. Do not store in lined tanks or drums. Suitable bulk storage vessels are mild/stainless steel tanks fitted with a dry air breathing system or tight head steel drums.

Storage class Miscellaneous hazardous material storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

2,2'-OXYBISETHANOL

Long-term exposure limit (8-hour TWA): WEL 23 ppm 101 mg/m³
Short-term exposure limit (15-minute): WEL

2-(2-METHOXYETHOXY)ETHANOL

8 hrs TWA 10ppm; 15 mins 50.1 mg/m3

2-(2-butoxyethoxy)ethanol

Long-term exposure limit (8-hour TWA): WEL 10 ppm 67.5 mg/m³
Short-term exposure limit (15-minute): WEL 15 ppm 101.2 mg/m³
WEL = Workplace Exposure Limit

2,2'-OXYBISETHANOL (CAS: 111-46-6)

DNEL	Workers - Dermal; Long term systemic effects: 106 mg/kg/day Workers - Inhalation; Long term systemic effects: 60 mg/m³ Consumer - Dermal; Long term systemic effects: 53 mg/kg/day Consumer - Inhalation; Long term systemic effects: 12 mg/m³
PNEC	- Water, Fresh water; 10 mg/l - Water, marine water; 1 mg/l - Water, Intermittent release; 10 mg/l - STP; 199.5 mg/l - Sediment (Freshwater); 20.9 mg/kg/sediment dw - Soil; 1.53 mg/kg

2-(2-butoxyethoxy)ethanol (CAS: 112-34-5)

DNEL	Workers - Inhalation; Short term local effects: 101.2 mg/m³ Workers - Dermal; Long term systemic effects: 20 mg/kg/day Workers - Inhalation; Long term systemic effects: 67 mg/m³ Consumer - Inhalation; Short term local effects: 50.6 mg/m³ Consumer - Dermal; Long term systemic effects: 10 mg/kg/day Consumer - Inhalation; Long term systemic effects: 34 mg/m³ Consumer - Oral; Long term systemic effects: 1.25 mg/kg/day
PNEC	- Water, Fresh water; 1.0 mg/l - Water, marine water; 0.1 mg/l - Water, Intermittent release; 3.9 mg/l - STP; 200 mg/l - Sediment (Freshwater); 4.0 mg/kg/sediment dw - Sediment (Marinewater); 0.4 mg/kg/sediment dw - Soil; 0.4 mg/kg

2-(2-METHOXYETHOXY)ETHANOL (CAS: 111-77-3)

DNEL	Workers - Dermal; Long term systemic effects: 0.53 mg/kg/day Workers - Inhalation; Long term systemic effects: 50.1 mg/m³ Consumer - Dermal; Long term systemic effects: 0.27 mg/kg/day Consumer - Inhalation; Long term systemic effects: 25 mg/m³

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PNEC

- Water, Fresh water; 12 mg/l
- Water, marine water; 1.2 mg/l
- Water, Intermittent release; 12 mg/l
- STP; 10000 mg/l
- Sediment (Freshwater); 44.4 mg/kg/sediment dw
- Sediment (Marinewater); 0.44 mg/kg/sediment dw
- Soil; 2.44 mg/kg

2-[2-(2-BUTOXYETHOXY)ETHOXY]ETHANOL (CAS: 143-22-6)

DNEL

Workers - Dermal; Long term systemic effects: 50 mg/kg/day
Workers - Inhalation; Long term systemic effects: 195 mg/m³
Consumer - Dermal; Long term systemic effects: 25 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 117 mg/m³
Consumer - Oral; Long term systemic effects: 2.5 mg/kg/day

PNEC

- Water, Fresh water; 1.5 mg/l
- Water, marine water; 0.25 mg/l
- Water, Intermittent release; 50 mg/l
- STP; 200 mg/l
- Sediment (Freshwater); 5.77 mg/kg/sediment dw
- Sediment (Marinewater); 0.13 mg/kg/sediment dw
- Soil; 0.45 mg/kg

Oral - ; 111 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Hygiene measures

Use engineering controls to reduce air contamination to permissible exposure level. Wash promptly with soap and water if skin becomes contaminated.

Respiratory protection

No specific recommendations. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

Thermal hazards

Not anticipated under normal conditions of use. The product is combustible if heated excessively and an ignition source is applied.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Clear liquid.

Colour

Colourless to amber (although some brake fluids may be dyed.)

Odour

Bland.

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Odour threshold	Very low odour.
pH	7.0 to 11.50
Melting point	<-50°C
Initial boiling point and range	>260°C @
Flash point	> 120°C
Evaporation rate	Negligible.
Upper/lower flammability or explosive limits	Not known.
Other flammability	Product is not flammable but on excessive heating may become combustible.
Vapour pressure	<2 mbar @ 20°C
Vapour density	Not established as non-volatile.
Relative density	1.03-1.09 @ 20°C
Solubility(ies)	In water: miscible in any ratio In ethanol: miscible in any ratio
Auto-ignition temperature	>300°C
Decomposition Temperature	>300°C
Viscosity	5-10 cSt @ 20°C
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Material is considered non-oxidizing.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Glycol Ethers can form peroxides on storage. Glycol Ethers can react with light metals with the evolution of hydrogen.

10.4. Conditions to avoid

Conditions to avoid Do not distil to dryness without testing for peroxide formation.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. For user safety, brake fluid should never be contaminated with any other substance.

10.6. Hazardous decomposition products

Hazardous decomposition products None known.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD_{50}) Based on available data the classification criteria are not met.

ATE oral (mg/kg) 10,000.0

Acute toxicity - dermal

Notes (dermal LD_{50}) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC_{50}) The product is unlikely to present any significant inhalation hazard at ambient temperatures and under normal conditions of use.

Serious eye damage/irritation

Serious eye damage/irritation May cause mild, short lasting discomfort to eyes.

Respiratory sensitisation

Respiratory sensitisation No evidence to suggest the product will be a respiratory sensitiser.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Major ingredients have not been shown to cause significant fertility or development problems at levels which are not themselves toxic to the animal concerned. One minor ingredient - methyl diglycol - has been shown to affect foetus development in some studies and is classified as H631d.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Kinematic viscosity > 20.5 mm^2/s. The product viscosity is greater than the upper limit assigned for classification.

Inhalation Unlikely to be hazardous by inhalation because of the low vapour pressure of the product at ambient temperature. Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion Product is of low acute oral toxicity.-LD50 (oral)= >5000 mg/kg. (Sparse experience indicates lethal dose in man could be less.) However, if any significant amount is ingested, there is a risk of renal damage which in extreme cases could lead to kidney failure, coma or death. Other symptoms of overexposure include CNS effects, abdominal discomfort, metabolic acidosis, headache and nausea.

Skin contact Skin irritation should not occur when used as recommended. Repeated exposure may cause skin dryness or cracking. Acts as a defatting agent on skin. May cause cracking of skin, and eczema.

Eye contact May cause temporary eye irritation.

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SECTION 12: Ecological information

Ecotoxicity Based on available data the classification criteria are not met. Not regarded as dangerous for the environment.

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: >100 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates Based on available data the classification criteria are not met.

12.2. Persistence and degradability

Persistence and degradability Product is inherently biodegradable and is expected to be readily biodegradable based on ingredients.

Biological oxygen demand Not determined.

Chemical oxygen demand Not determined.

12.3. Bioaccumulative potential

Bioaccumulative potential Not expected to bio-accumulate. Log POW for all main ingredients = <2.0

12.4. Mobility in soil

Mobility Soluble in water and will partition to aqueous phase. Volatilisation from water to air not expected. Mobile in soil until degraded.

Henry's law constant Not determined.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not relevant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information This material and its container must be disposed of as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Dispose of waste via a licensed waste disposal contractor. Controlled incineration or recycling is recommended. Do not dispose of to landfill or drains. It is recommended that contaminated packaging is either incinerated or cleaned and sent for recycling.

Waste class European Waste Catalogue (EWC) number: 16 01 13

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

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Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). Control of Substances Hazardous to Health Regulations 2002 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Guidance	Workplace Exposure Limits EH40. Safety Data Sheets for Substances and Preparations.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

Canada - DSL/NDSL
All the ingredients are listed or exempt.

US - TSCA
All the ingredients are listed or exempt.

Australia - AICS
All the ingredients are listed or exempt.

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Korea - KECI
All the ingredients are listed or exempt.

China - IECSC
All the ingredients are listed or exempt.

Philippines – PICCS
All the ingredients are listed or exempt.

New Zealand - NZIOC
All the ingredients are listed or exempt.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. CAS: Chemical Abstracts Service. DNEL: Derived No Effect Level. GHS: Globally Harmonized System. IATA: International Air Transport Association. IMDG: International Maritime Dangerous Goods. REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. vPvB: Very Persistent and Very Bioaccumulative.
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Issued by	Regulatory Affairs
Revision date	24/02/2020
Revision	2
Supersedes date	24/05/2016
SDS number	22807
Hazard statements in full	H302 Harmful if swallowed. H319 Causes serious eye irritation. H361d Suspected of damaging the unborn child. H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure if swallowed.