

1. Identification of the substance and of the supplier

1.1 Product identifiers

Product name : DUCKHAMS BRAKE FLUID DOT3

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

Identified uses : No further relevant information available

Application of the substance / the mixture: Industrial

1.3 Details of the supplier of the safety data sheet

Supplier : Duckhams Energy Co.,Ltd. (Head office)
55 Building 33 Space Tower B Room 601 Soi Pradiphat 17, Pradiphat Road,
Phyathai, Phyathai, Bangkok 10400

Hotline : (097) 926 3855

E-mail : Technical@duckhams.co.uk

2. Hazards identification

2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4 H302 Harmful if swallowed.

Eye Dam. 1 H318 Causes serious eye damage.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



Signal word Danger

Hazard-determining components of labelling:

2,2'-oxybisethanol

2-[2-(2-butoxyethoxy)ethoxy]ethanol

Hazard statements

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

- P260** Do not breathe dust/fume/gas/mist/vapours/spray.
- P264** Wash possible exposed body surfaces thoroughly after handling this product.
- P270** Do not eat, drink or smoke when using this product.
- P280** Wear eye protection / face 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.
- P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

- PBT:** Not applicable.
- vPvB:** Not applicable.




3. Composition/Information on ingredients

3.1 Chemical characterisation: Substances

- Identification number(s) Not applicable.

3.2 Chemical characterisation: Mixtures

- Description: Mixture: consisting of the following components.

Dangerous components:		
CAS: 143-22-6 EINECS: 205-592-6 Reg.nr.: 01-2119475107-38	2-[2-(2-butoxyethoxy)ethoxy]ethanol  Eye Dam. 1, H318	50-100%
CAS: 111-46-6 EINECS: 203-872-2 Reg.nr.: 01-2119457857-21	2,2'-oxybisethanol   STOT RE 2, H373 Acute Tox. 4, H302	25-50%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

4. First aid measures

4.1 Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing: Call for a doctor immediately.**

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents :

Use fire extinguishing methods suitable to surrounding conditions.

5.2 Special hazards arising from the substance or mixture

No further relevant information available.

5.3 Advice for firefighters

· **Protective equipment :** Wear self-contained respiratory protective device.

6. Accidental Release Measure

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Keep away from ignition sources.

6.2 Environmental precautions

Do not allow to penetrate the ground/soil.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and materials for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and Storage

7.1 Precautions for safe handling

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Store receptacle in a well ventilated area.

7.3 Specific end use(s)

See 1.2 : No further relevant information available.

8. Exposure Controls/Personal Protection

Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

111-46-6 2,2'-oxybisethanol

WEL Long-term value: 101 mg/m³, 23 ppm

· DNELs		
143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol		
Oral	DNEL Long-term - Systemic (consumer)	2.5 mg/kg bw/day (l)
Dermal	DNEL Long-term - Systemic (worker)	50 mg/kg bw/day (l)
Inhalative	DNEL Long-term - Systemic (worker)	195 mg/m ³ (l)
	DNEL Long-term - Systemic (consumer)	117 mg/m ³ (l)
111-46-6 2,2'-oxybisethanol		
Dermal	DNEL Long-term - Systemic (worker)	106 mg/kg bw/day (l)
Inhalative	DNEL Long-term - Systemic (consumer)	53 mg/kg bw/day (l)
	DNEL Long-term - Local (worker)	60 mg/m ³ (l)
	DNEL Long-term - Local (consumer)	12 mg/m ³ (l)
102-71-6 Triethanolamine		
Oral	DNEL Long-term - Systemic (worker)	13 mg/kg bw/day (l)
Dermal	DNEL Long-term - Systemic (worker)	6.3 mg/kg bw/day (l)
	DNEL Long-term - Systemic (consumer)	3.1 mg/kg bw/day (l)
Inhalative	DNEL Long-term - Systemic (worker)	1.25 mg/m ³ (l)
	DNEL Long-term - Local (worker)	1.25 mg/m ³ (l)
	DNEL Long-term - Systemic (consumer)	5 mg/m ³ (l)
	DNEL Long-term - Local (consumer)	5 mg/m ³ (l)
· PNECs		
143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol		
PNEC Fresh water	1.5 mg/l (l)	
PNEC Marine water	0.15 mg/l (l)	
PNEC Intermittent releases	5 mg/l (l)	
PNEC Fresh water sediment	5.77 mg/kg (l)	
PNEC Marine sediment	0.13 mg/kg (l)	
PNEC Soil	0.45 mg/kg (l)	
PNEC STP	200 mg/l (l)	
111-46-6 2,2'-oxybisethanol		
PNEC Fresh water	10 mg/l (l)	
PNEC Marine water	1 mg/l (l)	
PNEC Intermittent releases	10 mg/l (l)	
PNEC Fresh water sediment	20.9 mg/kg (l)	
PNEC Marine sediment	20.9 mg/kg (l)	
PNEC Soil	1.53 mg/kg (l)	
PNEC STP	199.5 mg/l (l)	
102-71-6 Triethanolamine		
PNEC Fresh water	0.32 mg/l (l)	
PNEC Marine water	0.032 mg/l (l)	
PNEC Intermittent releases	5.12 mg/l (l)	
PNEC Fresh water sediment	1.7 mg/kg (l)	
PNEC Marine sediment	0.17 mg/kg (l)	
PNEC Soil	0.151 mg/kg (l)	
PNEC STP	10 mg/l (l)	

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

EN374

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**

EN 166



Tightly sealed goggles

- **Body protection:** Protective work clothing

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9. Physical and Chemical Properties

· 9.1 Information on basic physical and chemical properties	
· General Information	
· Appearance:	
Form:	Fluid
Colour:	According to product specification
· Odour:	Characteristic
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	245 °C
· Flash point:	131 °C
· Flammability (solid, gas):	Not applicable
· Auto-ignition temperature:	202 °C
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	1.6 Vol %
Upper:	10.8 Vol %
· Vapour pressure at 20 °C:	<0.1 hPa
· Density at 20 °C:	1.035 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
Solubility in / Miscibility with water:	Fully miscible.
· oxidizing properties	Not determined.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	36.2 %
VOC-content	36.16 %
· 9.2 Other information	No further relevant information available.

10. Stability and Reactivity

10.1 Reactivity	Not determined. No further relevant information available.
10.2 Chemical stability	Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions	No dangerous reactions known.
10.4 Conditions to avoid	No further relevant information available.
10.5 Incompatible materials	No further relevant information available.
10.6 Hazardous decomposition products	No dangerous decomposition products known.
Additional information:	None.

11. Toxicological Information

11.1 Information on toxicological effects

- Acute toxicity Harmful if swallowed.

· LD/LC50 values relevant for classification:		
143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol		
Oral	LD50	5,170 mg/kg (rat)
Dermal	LD50	3,540 mg/kg (rabbit)
111-46-6 2,2'-oxybisethanol		
Oral	LD50	>300 - ≤2,000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/4 h	>5 mg/l (rat)
102-71-6 Triethanolamine		
Oral	LD50	6,400 mg/kg (rat) (BASF-test)
Dermal	LD50	>2,000 mg/kg (rabbit) (OESO 402)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects** (carcinogenicity, mutagenicity and toxicity for reproduction)
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

12. Ecological Information

· 12.1 Toxicity

- **Aquatic toxicity:**

143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol

EC 50 (72 h)	62.5 mg/l (Desmodesmus subspicatus)
LC 50 (96 h)	2,200-4,600 mg/l (Leuciscus idus)
EC 50 (48 h)	>500 mg/l (daphnia magna)
IC 50 (16 h)	>5,000 mg/l (Bacteria)

111-46-6 2,2'-oxybisethanol

LC/EC/IC 50	>100 mg/l (fish)
	>100 mg/l (algae)
	>100 mg/l (Bacteria)
NOEC	>100 mg/l (fish)
	>100 mg/l (TISBE Marine copepod)

102-71-6 Triethanolamine

EC 50 (24 h)	2,038 mg/l (daphnia magna) (acute)
EC 50 (72 h) (static)	512 mg/l (Scenedesmus subspicatus) (growth rate, DIN 38412 part 9)
EC 50 (3 h)	>1,000 mg/l (Activated Sludge) (domestic, OESO 209)
NOEC	16 mg/l (daphnia magna) (21 d, semi-dynamic)
LC 50 (96 h) (dynamic)	11,800 mg/l (Pimephales promelas) (acute)
EC 50 (48 h)	609.9 mg/l (Ceriodaphnia dubia)

· **12.2 Persistence and degradability** No further relevant information available.

· **Degree of elimination:**

143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol

OECD 301 D	85 % (/)
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102-71-6 Triethanolamine

OESO 301E	90-100 % (Activated Sludge) (aerob; domestic; 19 d; 92/69/EEG, C.4-B)
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· **12.3 Bioaccumulative potential**

143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol

BCF	< 100 (/)
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102-71-6 Triethanolamine

BCF	<3.9 (Cyprinus caprio)
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· **12.4 Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:** Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

13. Disposal Considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14. Transport Information

14.1 UN number

· ADR, ADN, IMDG, IATA Void

14.2 UN proper shipping name

· ADR, ADN, IMDG, IATA Void

14.3 Transport hazard class(es)

· ADR, ADN, IMDG, IATA
· Class Void

14.4 Packaging group

· ADR, IMDG, IATA Void

14.5 Environmental hazards

· 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

Not applicable.

· UN "Model Regulation": Void

15. Regulatory Information

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

- Labelling according to Regulation (EC) No 1272/2008 GHS label elements
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
NK	35.0

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. Other Information

Date 1 November 2021

Prepared by: Duckhams Energy Co.,Ltd.

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

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