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

1.1 Product identifier

Product name:	**Textar Brake fluid DOT4**
Article name:	**95002100** **95002200** **95002300** **95002400** **95002500**
Ingredients giving rise to classification	Polyalkylene glycol ethers & polyglycols including diethylene glycol

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

Use of the substance/ mixture:	Hydraulic fluid for use in automotive brake and clutch systems

1.3 Details of the supplier of the safety data sheet:

TMD Friction Services GmbH
Schlebuscher Str. 99
51381 Leverkusen / Germany
www.tmdfriction.com
E-mail: serviceline@tmdfriction.com
Kontakt: Tel. +49 (2171)703 2905

1.4 Emergency telephone number

Informationszentrale gegen Vergiftungen,
Universitätsklinikum Bonn
Adenauerallee 119
D-53113 Bonn
Tel: +49 (0)228-19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition: **Mixture**

Classification according to Regulation (EG) No. 1272/2008 [CLP/GHS]

Eye Irritant-category 2; H319 Causes serious eye irritation.

2.2 Label elements

Hazards picrograms:

Signal word:	Warning
Hazard statements:	H319 Causes serious eye irritation

Precautionary statements

Prevention:	P102 – keep out of the reach of children
Reaktion:	P305/P351/P338 – IF IN EYES rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P337/313 – If eye irritation persists, get medical advice
P301/311 – IF SWALLOWED, call a POISON CENTRE or doctor/physician and have container or label at hand

2.3 Other hazards

Other hazards which do not result in classification

Product is not classified as flammable or combustible but will burn.
Product is not classified as PBT or vPvB according to Annex XIII.

SECTION 3: Composition / Information on ingredients

Substance / mixture:

Mixture.
Blend of polyglycol ethers, glycol ether esters and polyglycols with added corrosion and oxidation inhibitors.

Ingredient	EC-Nr.	CAS-No.	Registration No.	%	Classification (EC) Nr. 1272/2008 [CLP]
Butyl triglycol	205-592-6	143-22-6	01-2119531322-53	20-45	Eye Damage – Cat. 1; H318
Diethylene glycol	203-872-2	111-46-6	01-2119457857-21	0-10	Acute Oral Toxicity Cat. 4 –H302. STOT-RE Cat. 2 –H373.
Methyl diglycol	203-906-6	111-77-3	01-2119475100-52	0-3	Reproductive toxicity – Cat. 2; H361d
Butyl diglycol	203-961-6	112-34-5	01-2119475104-44	0-3	Eye Irritant – Cat. 2 H 319

See Section 16 for the full text of the H statements declared above.

SECTION 4: First aid measures

4.1 Description of first aid measures

General Advice: First Aid responders should pay attention to self-protection and use any recommended protective clothing –see section 8.

Eye contact: Flush eye with plenty of water for at least 10 minutes. If irritation persists seek medical attention.

Skin contact: Remove contaminated clothing. Wash affected skin with soap and water. If irritation persists seek medical attention.

Inhalation: Remove victim to fresh air –and keep at rest. If recovery is not rapid, seek medical attention.

Ingestion: Obtain medical advice immediately. If patient is fully conscious, wash out mouth with water and give plenty of water to drink. If medical attention is delayed and an adult has swallowed several ounces, give 90 -120ml of hard liquor such as 40%v/v spirits. For children give proportionately less at a rate of 2ml / kg body-weight. Never give anything by mouth to an unconscious person. Induce vomiting only under medical supervision.

4.2 Most important symptoms and effect, both acute and delayed

See sections 2 and 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: 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. Due to the diethylene glycol content this material may have a mechanism of intoxication similar to ethylene glycol and treatment similar to that for ethylene glycol poisoning may help.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Alcohol resistant foam, dry powder, carbon dioxide or water (fog or fine spray).

Unsuitable extinguishing media: Water jets (although these may be used to cool adjacent containers).

5.2 Special hazards arising from the subtance or mixture

Hazards from the subtance or mixture No special risk – combustion products may contain harmful or irritant fumes. Containers may rupture from gas generation if exposed to fire.

5.3 Advice for firefighters

Special protective equipment for fire-fighters: Eye protection should be worn. Keep containers cool with water spray. In extreme conditions self-contained breathing apparatus and protective suit should be worn.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Prevent unnecessary personnel entering area of spillage. Avoid contact with eyes, skin, and clothing. When cleaning up large spills, appropriate protective clothing should be worn including eye protection and impervious gloves -see section 8 for details.

6.2 Environmental precautions

Prevent from entering drains, ditches or rivers. If this happens inform relevant authorities. Prevent gross contamination of soil.

6.3 Methods and material for containment and cleaning up

Contain spillage using sand earth or absorbent booms. Small spillages can be absorbed using rags or absorbent granules. Remove all material to a suitable container for subsequent disposal. Label Salvage Container appropriately. Flush contaminated area with plenty of water.

6.4 Reference to other sections

For personal protection see section 8. For disposal methods see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures: Avoid any method of handling that generates mists or aerosols. Do not eat, drink or smoke when handling this product. Wash hands thoroughly after use.

7.2 Conditions for safe storage, including any incompatibilities

Suitable bulk storage vessels are mild/stainless steel tanks fitted with a dry air breathing system or tight head steel drums. Do not store in lined tanks or drums. 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.

7.3 Specific end use(s) Recommendations

Users are referred to the Specification SAE J1707 “Service Maintenance of Brake Fluids”.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits:

Mixture – No official figures available. Due to the low vapour pressure of the preparation, vapour is not generally a problem at ambient temperature.

Individual ingredients	**Country**	**8 hours**	**15 min**
Diethylene glycol	Australia	23 ppm / 101 mg/m3	
	Austria	10 ppm / 44 mg/m3	40 ppm / 176 mg/m3
	Denmark	2,5 ppm / 11 mg/m3	5 ppm / 22 mg/m3
	Germany	10 ppm / 44 mg/m3	40 ppm / 176 mg/m3
	Latvia	10 mg/m3	
	New Zealand	23 ppm / 101 mg/m3	
	Sweden	10 ppm / 45 mg/m3	20 ppm / 90 mg/m3
	Switzerland	10 ppm / 44 mg/m3	40 ppm / 176 mg/m3
	UK	23 ppm / 101 mg/m3	
Butyl diglycol	Austria	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Belgium	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Denmark	100 mg/m3	200 mg/m3
	EU	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	France	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Germany	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Hungary	67,5 mg/m3	101,2 mg/m3
	Italy	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Latvia	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Poland	67,5 mg/m3	100 mg/m3
	Spain	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	Sweden	15 ppm / 100 mg/m3	30 ppm / 200 mg/m3
	Switzerland	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
	The Netherlands	50 mg/m3	100 mg/m3
	UK	10 ppm / 67,5 mg/m3	15 ppm / 101,2 mg/m3
Methyl diglycol	Austria	10 ppm / 50,1 mg/m3	
	Belgium	10 ppm / 50,1 mg/m3	
	Denmark	25 ppm (provisorisch)	
	EU	10 ppm / 50,1 mg/m3	
	France	10 ppm / 50,1 mg/m3	
	Germany	10 ppm / 50,1 mg/m3	
	Hungary	50,1 mg/m3	
	Italy	10 ppm / 50,1 mg/m3	
	Latvia	20 ppm / 100 mg/m3	
	Poland	50,0 mg/m3	
	Spain	10 ppm / 50,1 mg/m3	
	The Netherlands	45 mg/m3	
	UK	10 ppm / 50,1 mg/m3	

Derived No Effect Levels (DNEL)	Worker; Long term exposure –systemic effects, dermal	50mg/kg/day
	Worker; Long term exposure –systemic effects, inhalation	195mg/ m3
Butyl triglycol	Consumer Long term exposure –systemic effects, dermal	25mg/kg/day
	Consumer Long term exposure –systemic effects, inhalation	117mg/ m3
	Consumer Long term exposure –systemic effects, oral	2.5mg/kg/day
Butyl diglycol	Worker; Short term exposure –local effects, inhalation	101.2mg/ m3
	Worker; Long term exposure –systemic effects, dermal	20mg/kg/day
	Worker; Long term exposure –systemic effects, inhalation	67mg/ m3
	Consumer; Short term exposure –local effects, inhalation	50.6mg/ m3
	Consumer Long term exposure –systemic effects, dermal	10mg/kg/day
	Consumer Long term exposure –systemic effects, inhalation	34mg/ m3
	Consumer Long term exposure –systemic effects, oral	1.25mg/kg/day
Diethylene glycol	Worker; Long term exposure –systemic effects, dermal	106mg/kg/day
	Worker; Long term exposure –systemic effects, inhalation	60mg/ m3
	Consumer Long term exposure –systemic effects, dermal	53mg/kg/day
	Consumer Long term exposure –systemic effects, inhalation	12mg/ m3
Methyl diglycol	Worker; Long term exposure –systemic effects, dermal	0.53mg/kg/day
	Worker; Long term exposure –systemic effects, inhalation	50.1mg/ m3
	Consumer Long term exposure –systemic effects, dermal	0.27mg/kg/day
	Consumer Long term exposure –systemic effects, inhalation	25mg/ m3
	Consumer Long term exposure –systemic effects, oral	1.5mg/kg/day

Predicted No Effect Concentrations (PNEC)

Butyl triglycol	Aqua (freshwater)	1,5 mg/L
	Aqua (marine water)	0,25 mg/L
	Aqua (intermittent releases)	5,0 mg/L
	Sewage Treatment Plant (STP)	200 mg/L
	Sediment (freshwater)	5,77 mg/kg/sediment dw
	Sediment (marine water)	0,13 mg/kg/sediment dw
	Soil	0,45 mg/kg/soil dw
	Oral	111 mg/kg/food
Butyl diglycol	Aqua (freshwater)	1,0 mg/L
	Aqua (marine water)	0,1 mg/L
	Aqua (intermittent releases)	3,9 mg/L
	Sewage Treatment Plant (STP)	200 mg/L
	Sediment (freshwater)	4,0 mg/kg/sediment dw
	Sediment (marine water)	0,4 mg/kg/sediment dw
	Soil	0,4 mg/kg/soil dw
	Oral	56 mg/kg/food
Diethylene glycol	Aqua (freshwater)	10 mg/L
	Aqua (marine water)	1 mg/L
	Aqua (intermittent releases)	10 mg/L
	Sewage Treatment Plant (STP)	199,5 mg/L
	Sediment (freshwater)	20,9 mg/kg/sediment dw
	Soil	1,53 mg/kg/soil dw
Methyl diglycol	Aqua (freshwater)	12 mg/L
	Aqua (marine water)	1,2 mg/L
	Aqua (intermittent releases)	12 mg/L
	Sewage Treatment Plant (STP)	10000 mg/L
	Sediment (freshwater)	44,4 mg/kg/Sediment dw

	Sediment (marine water)	0,44 mg/kg/Sediment dw
	Soil	2,44 mg/kg/Erde dw
	Oral	0,9 mg/kg/Lebensmittel

Recommended monitoring procedures:	Personal air monitoring. An applicable standard is BS EN 14042.

8.2 Exposure controls

General	Employ good industrial hygiene practice as part of a control banding approach
Appropriate engineering controls	Not necessary under normal conditions. If fluid is being heated or atomised, local exhaust ventilation with filter / scrubber is recommended

Individual protection measures

Respiratory protection	Not needed under normal conditions. Self contained breathing apparatus or Organic vapour respirators (A-P2) may be used where product is being heated or atomised and engineering control measures are not practical.
Eye/face protection	Wear close-fitting goggles (EN 166) or face shield where there is a risk of splashing (acrylic or PVC preferred to polycarbonate which may be attacked by brake fluid). Eye baths should be provided at locations where accidental exposure may occur
Skin protection	
Hand protection	Wear chemically resistant impervious gloves (EN 374) to avoid prolonged or repeated contact. Butyl rubber, Natural rubber, Nitrile rubber and PVC are suitable materials. Because of great variety of 6 of 9 types of gloves see manufacturer's figures for breakthrough times. In the case of prolonged contact a glove with a protection class of 6 (breakthrough time of >480 min) is recommended.
Skin and body	Where significant exposure is possible wear impervious body covering. It is recommended that showers are provided at locations where accidental exposure may occur.
Environmental exposure controls	No special measures required

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:

		Test method
Appearnce	Clear liquid – colourless to amber (although some brake fluids may be dyed).	Visual
Odour	Bland	N/A.
Odour threshold	N/A. – very low odour	
pH	7,0 to 11,50	SAE J 1703
Melting point	< -50°C.	SAE J 1703
Boiling point	> 260°C.	SAE J 1703
Flash point	>100°C	IP35
Flammability limits in air	Not established as non-volatile	
Auto ignition temp.	> 300°C	ASTM D 286
Decomposition Temperature	> 300°C	
Evaporation Rate	Negligible	
Density @ 20°C	1,020 – 1,070 g/ml	DIN51757

Solubility	In water: miscible in any ratio In ethanol: miscible in any ration	
Partition Coefficient: n-Octanol/Water	< 2.0 (all main ingridients)	OECD 117
Viscosity @ 20°C	Approx. 5-10 cSt	ASTM D 445
Vapour pressure 20°C	< 2 Milibar	Reid
Vapour Density	Not established as non-volatile	
Explosive properties	Not explosive	
Oxidising Properties	Not oxidising	

9.2 Other information

No other relevant data

SECTION 10: Stability and reactivity

10.1 Reactivity	No hazardous reactions if stored and handled as indicated.
10.2 Chemical stability	Product is stable under normal conditions.
10.3 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	Do not distil to dryness without testing for peroxide formation
10.5 Incompatible materials	Strong oxidising agents. For user safety, brake fluid should never be contaminated with any other substance.
10.6 Hazardous decomposition products	None known.

SECTION 11: Toxiciligical information

Kommentare können auf einer Analogie mit ähnlichen Produkten basiert sein

11.1 Information on toxicological effects

Acute toxicity estimates

Potential acute health effects

Inhalation	Unlikely to be hazardous by inhalation at ambient temperatures due to low vapour pressure. If product is inhaled at elevated temperatures or as an aerosol it may irritate respiratory tract and may cause systemic effects similar to ingestion (see above).
Ingestion	Product is of low acute oral toxicity – LD50 (oral) Rat = > 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 Central Nervous System effects, abdominal discomfort, metabolic acidosis, headache and nausea.
Aspiration	No aspiration hazard expected
Dermal	Acute percutaneous toxicity is low LD50 (sk) Rabbit = > 3000 mg/kg. Massive contact with damaged skin could result in the absorption of harmful amounts.
Irritation	
Eye Contact	Causes serious eye irritation. (Test Method OECD 405).
Skin Contact	Based on available data the classification criteria are not met -Test Method OECD 404. Repeated contact may de-fat the skin and cause dermatitis.
Corrosivity	Based on available data the classification criteria are not met.
Sensitisation	Based on available data the classification criteria are not met
Repeated dose toxicity	There are no reports of long term adverse effects in man. For one ingredient– diethylene glycol -human STOT effects on the Kidney and gastrointestinal tract

have been reported.

Carcinogenicity Not known to be carcinogenic.

Mutagenicity Not known to be mutagenic.

Toxicity for reproduction 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 R63 / H361d.

SECTION 12: Ecological information

12.1 Toxicity

Product is of low acute ecotoxicity.
Fish 96h LC50 = > 100 mg/l (Oncorhynchus Mykiss)
Daphnia 48h EC50 = Not Determined but expected to be virtually non toxic.
Algae 72h EC50 = Not Determined but expected to be virtually non toxic.

12.2 Persistence and degradability

Product is inherently biodegradable and is expected to be readily biodegradable based on ingredients.
OECD 302B (Zahn Wellans/EMPA) = 100% elimination at 21 days.
If admitted into adapted biological water treatment plants, no adverse effects on the degrading action of the live sludge are expected.

12.3 Bioaccumulative potential

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

12.4 Mobility in soil

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

12.5 Results of PBT and vPvB assessment

Product is considered to be neither “persistent, bio-accumulating and toxic” nor “very persistent and very bio-accumulating” according to Annex Xlll of Regulation EC 1907/2006.

12.6 Other adverse effects

Not relevant

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of in accordance with local and national regulations. In the E.U. used brake fluids are classified as Hazardous Waste. EWC number: 16.01.13. 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.

SECTION 14: Transport information

	ADR/RID	ADN	IMGD	IATA
14.1 UN-number	None	None	None	None
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	no	no	no	no

Additional information	-	-	-	-

14.6 Special precautions for user None relevant

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

SECTION 15: Regulatory information

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

Chemical Inventories:
E.U. (EINECS / EILINCS)
USA (TSCA)
Canada (DSL/NDSL)
Australia (AICS)
Japan (ENCS)
China (IECSC)
Korea (ECL)
Philippine (PICCS)
New Zealand (NZLoC)
Taiwan

WGK Hazard class Assessed as WGK 1 (self assessment). Slight hazard to water

Sonstiges Usage should be in accord with all local and national regulations. In the U.K. this would include the Health and Safety at Work Act and the Control of Substances Hazardous to Health regulations (COSHH.)

15.2 Chemical Safety Assessment A chemical safety assessment has not been carried out for this product by the supplier.

SECTION 16: Other information

Abbreviations and acronyms

CLP –Classification, labelling and packaging of substances and mixtures regulation**,**
GHS –UN Globally Harmonised system of classification and labelling of chemicals
STOT –RE Specific Target Organ Toxicity –Repeated Exposure.
H302 –Harmful if swallowed
H318 – Causes serious eye damage
H319 – Causes serious eye irritation
H361d –Suspected of damaging fertility or the unborn child.
H373 –May cause damage to organs through prolonged or repeated exposure.

Revisions	Changes to this issue of the data sheet are indicated by a bar in the left margin
Date of issue/ Date of revision	26.07.2017
Date of previous issue	27.03.2013
Version	2

Notice to reader
All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and

environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from TMD Friction Services GmbH.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The TMD Friction Services GmbH shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the TMD Friction Services GmbH to ensure that this document is the most current available. Alteration of this document is strictly prohibited.