

POLYGLYKOL B 01/150

Technical Data Sheet

POLYGLYKOL B 01/150

Base oil component for industrial applications

Composition	Polypropylene glycol monobutylether $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2(\text{OCH}_2\text{CHCH}_3)_n \text{OH}$
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Product properties ¹

Appearance (20°C)	Clear viscous liquid
Color index [APHA] EN 1557	Max. 100
Refractive index (20°C) DIN 51432	Approx. 1.450
Molecular weight	Approx. 3300 g/mol
Water content DIN 51777	Max. 0.25 %
pH value (10% in EtOH/water 1:1)	Approx. 5.0 – 7.0
Density (20°C) DIN 51757	Approx. 1.019 – 1.023 g/cm ³
Viscosity (40°C) DIN 51562	Approx. 224 mm ² /s
Viscosity (100°C) DIN 51562	Approx. 37 mm ² /s
Viscosity index ASTM D 2270	Approx. 217
Pour point ISO 3016	Approx. -38°C
Flash point DIN 51376	Approx. 240°C
Ignition temperature DIN 51794	Approx. 370°C
Four ball test DIN 51350/3B (60min. / 300N)	Approx. 0.45 mm
Seizure / welding load	Approx. 1200 / 1800 N
FZG load stage DIN 51354	Approx. 12

Profile

Product properties

Polyglykol B 01/150 is a clear neutral, viscous liquid at room temperature. Polyglykol B 01/150 is insoluble in water but soluble in many polar organic solvents like acetone or methanol. Polyglykol B 01/150 can be dispersed much better in pure hydrocarbon solvents than the more hydrophilic B 11-type polyglycols. Polyglykol B 01/150 displays a

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¹ These characteristics are for guidance only and not to be taken as product specifications. The tolerances are given in the product specification sheet. For further product properties, specifications, safety, and ecological data, please refer to the MSDS.

very low solidification point of -38°C and no evaporation loss even at temperatures as high as 100°C. Polyglykol B 01-types have a very low hygroscopy compared to other Polyglykol-types.

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Solubility

Table 2

	Water	Naphthenic mineral oil*	Rapeseed oil	Sunflower oil	Paraffinic mineral oil*
Solubility	-	✓	✓	✓	-
	Trimelliate ester	TMP Trioleate ester	PAO*		
	✓	✓	-		

✓ Soluble

- Insoluble

* Low viscous

Thermo-oxidative degradation

To increase the thermo-oxidative stability, Lubricant Additive 1655 (LA 1655) can be used:

Table 3: Results of thermo-gravimetric analysis (TGA)

Addition of LA 1655	Temperature 5% mass loss °C	Temperature 10% mass loss °C	Center point T °C	Inflection point T °C	Residue %
none	202.22	213.39	249.16	269.5	0
+ 3% LA 1655	278.09	282.76	301.27	308	0

Pyrolysis under air flow (30 ml/min) from RT to 400 °C, heating rate: 10 °C/min

Application

Based on their physical and chemical characteristics B 01-type polyglycols are used for a wide variety of applications.

Fields of industrial application:

- Base oil component for high performance lubricants with low friction coefficients, excellent wear properties and good thermal stability
- Lubricant for refrigeration compressors
- Lubricating component of metalworking fluids
- Component of auxiliaries for leather and textile processing
- Component for defoamer formulations
- Reactive alcohol component in chemical reactions
- Solvent for dyes and inks
- Dispersant for pigments

Application example: Base oil for grease formulations

Polyglykol B 01/150 can be used as a base oil component to formulate greases. As Polyglykol B01/150 is HX-1 registered for food grade lubricants with incidental food contact, it is an ideal component to formulate food grade greases. An example of a food grade grease formulated with Polyglykol B 01/150 as the oil component, silica as a thickener, and PTFE as an additive is shown below:

Table 4: Grease formulation

Material	NLGI 2	
	Amount (wt %)	
Polyglykol B 01/150	80	75.5
Pyrogenic silica	20	22.0
PTFE additive (Ceridust 9202 F)	-	2.5

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Table 5: Properties of the greases

Property	Method	Silica	Silica
		B 01/150	B 01/150 PTFE
NLGI grade	ASTM D-217	2	2
Consistency (1/10mm)	ASTM D-217	285	283
Worked penetration - 100000 strokes (1/10mm)	ASTM D-217	285	-
Oil separation (168h- 40°C, %)	ASTM D-1742	0.82	-
Water wash out (4g / 600 rpm / 79°C, %)		5.1	2.6
- not determined			

Storage instructions

When stored in a cold, dry place in a closed container Polyglykol B 01/150 can be kept for at least two years.

Safety

Further information on handling, storage and dispatch is given in the safety data sheet.

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