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Synative® ES TMP 05

Chemical composition

Trimethylolpropane trioleate

Properties

Physical form

Clear, yellowish liquid

Quality control

The data listed below are intended as a guide to facilitate handling and cannot be regarded as specified data. Specified product data are issued as a separate product specification.

The following data are used for quality release and are certified for each batch.

Characteristic	Unit	Synative ES TMP 05
Acid value (DGF C-V 2)	mgKOH/g	max. 1
Saponification value (DGF C-V 3)	mgKOH/g	178–187
Iodine value (DGF C-V 11b)	mgKOH/g	83–90
Hydroxyl value (DGF C-V 17 a; b)	gI ₂ /100g	max. 20
Pour point (DIN ISO 3016)	°C	max. –40
Color Lovibond; yellow (DGF C-IV 4 b)		max. 7
Color Lovibond; red (DGF C-IV 4 b)		max. 1.5
Water content (DGF C-III 13 a)	%	max. 0.05
Cloud point (DGF D- III 3)	°C	max. –20

The following data are guaranteed specification values which are not determined on a regular basis.

Characteristic	Unit	Synative ES TMP 05
Flash point (DIN EN ISO 2592)	°C	180–400
Viscosity Ubbel; 40 °C (DIN 51562 T 1)	mm ² /s	42–50

Technical data

Characteristic	Unit	Synative ES TMP 05
Refractive index (DIN 51423, ASTM D1218)		1.4722
Density; 20 °C (DIN 51757)	g/cm ³	0.914–0.920
ASTM color (ASTM D1500)		2
Kinematic viscosity (DIN 51562, part 1) at –20 °C at 20 °C at 100 °C	mm ² /s	1000 110 9.0–10.0
Viscosity index (DIN ISO 2909)		180
Thermogravimetric analysis Loss in mass when continuously increasing the temperature at a rate of 20 °C/min 200 °C 250 °C 300 °C	% loss	0 0 1
4-ball wear scar; 450 N; 1 hour (DIN 51350, part 3)	mm	0.9
4-ball welding load (DIN 51350, part 2)	N	1400
Water separation (DIN ISO 6614) Oil/water/emulsion	ml	20 min. 43/37/0 30 min. 43/37/0

Application

Due to its excellent ecological/toxicological properties, Synative ES TMP 05 can be used as basestock for biodegradable hydraulic oils either solely or blended with vegetable oils.

In addition, Synative ES TMP 05 can also be used as basestock for greases and chlorine-free metal drawing fluids. An addition of Synative ES TMP 05 to e.g. rape seed oil improves the low temperature properties.

Application

Storage stability

Provided it is stored at ambient storage conditions and the drums are kept tightly sealed, Synative ES TMP 05 has a shelf life of at least two years in its original packaging.

Additional information

Regulatory status

AICS	DSL	ENCS (JP)	EU	INV (CN)	PICCS (PH)	KECI (PR)	TSCA
yes	yes	yes	yes	yes	yes	yes	yes

Safety

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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