

# SYNATIVE ES TMP 05

## Composition

Trimethylolpropantrioleate

## Quality Control Data

(These data are used for quality release and are certified for each batch.)

Item	Value	Method / Remarks
<b>Water Content:</b>	max. 0,05 %	DGF C-III 13 a (75)
<b>Cloud Point:</b>	max. -20 °C	DGF D-III 3 DIN EN 23015
<b>Acid Value:</b>	max. 1	DIN 53402 DGF C-V 2 (81)
<b>Iodine Value:</b>	83 - 90	DGF C-V 11 b
<b>Hydroxyl Value:</b>	max. 20	DIN 53240 DGF C-V 17 a (53)
<b>Saponification Value:</b>	178 - 187	DIN 53401 DGF C-V 3
<b>Color:</b>	Lovibond 1" gelb/yellow rot/red max. 7 max. 1,5	DGF C-IV 4 b (84)

## Additional Specifications

(Guaranteed specification values which are not determined on a regular basis.)

Item	Value	Method / Remark
<b>Flash Point:</b>	min. 300 °C	DIN ISO 2592
<b>Pour Point:</b>	max. -40 °C	DIN ISO 3016
<b>Density:</b>	20 °C 0,914 - 0,920 g/cm <sup>3</sup>	DIN 51757 V4
<b>Viscosity:</b>	40 °C 42 - 50,0 mm <sup>2</sup> /s	DIN 51562
<b>Viscosity:</b>	100 °C 9 - 10 mm <sup>2</sup> /s	DIN 51562

## Properties & Use

Due to its excellent ecological/toxicological properties **SYNATIVE ES TMP 05** is used as basestock for biodegradable hydraulic oils either solely or blended with vegetable oils. An addition of **SYNATIVE ES TMP 05** to. e. g. rape seed oil improves the low temperature properties.

## Additional Technical Data

<b>Kinematic viscosity</b> (DIN 51562 part 1)		
at -20°C	1000	mm <sup>2</sup> /s
at 20°C	110	mm <sup>2</sup> /s
<b>Viscosity index</b> (DIN ISO 2909)	180	
<b>Thermogravimetric Analysis</b> (Cognis-Method TA-TGA-SOP 6) (Loss in mass-% when continuously increasing the temperature at a rate of 20 °C/min)		
200°C	0	%
250°C	0	%
300°C	1	%
<b>EP and AW properties</b> Shell "Four-ball-Tester"		
Diameter of scull-caps (DIN 51350 part 3) at 450 N, 1 hour	0,9	mm
Welding load (DIN 51350, part 2)	1400	N
<b>Refractive index</b> (DIN 53491)	1,4722	
<b>Density (15 °C)</b> (DIN 51757)	0,920	g/cm <sup>3</sup>
<b>ASTM-Colour</b> (ASTM D 1500)	2	

The product can be stored for at least 2 years at ambient storage conditions and temperature without any deterioration.

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**COGNIS DEUTSCHLAND GmbH & CO KG**

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