

Hydralan[®] 406 ESI

October 2019 | [Data Sheet](#) | Replaced Version December 2015

TI-D/EVO 0140e / Page 1 of 4

® = Registered trademark of BASF SE

Brake fluid for hydraulic brake and clutch systems with a boiling point of at least 265 °C and a wet boiling point of at least 180 °C.

Due to the low deep temperature viscosity this brake fluid is especially recommended for brake systems combined with ABS, TCS and ESP/DSC.

Hydralan 406 ESI has been formulated with glycol ethers and their borates. Hydralan 406 ESI contains effective corrosion inhibitors, antioxidants and lubricity additives.

Properties

Hydralan 406 ESI satisfies the following specifications:
SAE J 1703, SAE J 1704, FMVSS No. 116 DOT 3, DOT 4 and DOT 5.1,
ISO 4925 Class 6 and JIS K 2233 Class 6

Furthermore **Hydralan 406 ESI** is officially approved by the following manufacturers:

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| • Daimler AG | MB-Approval 331.0 |
| • Bosch | n.a. |
| • Volvo Cars | TR 33413395-002 |

Hydralan 406 ESI has high thermal stability.

Hydralan 406 ESI features excellent corrosion protection for various metals.

Hydralan 406 ESI leads to an appropriate swelling within the specification limits of natural rubber (NR), styrene-butadiene rubber (SBR) and EPDM rubber.

Tested in accordance with SAE J 1703, SAE J 1704, FMVSS No. 116 DOT 3 / DOT 4 / DOT 5.1, ISO 4925 Class 6 and JIS K 2233 Class 6

Appearance	Yellow liquid, free from mineral oil and undissolved substances		
Properties	Density at 20 °C	1.06 g/cm ³	
	Viscosity at -40 °C	max. 700 mm ² /s	
	Viscosity at 100 °C	min. 1.5 mm ² /s	
	Boiling point	min. 265 °C	
	Wet boiling point	min. 180 °C	
	Heat stability	± 3 °C	
	Chemical stability	± 3 °C	
	pH value		
	Water content	max. 0.15 %	
Low temperature test		<u>6 h / -50 °C</u>	<u>144 h / -40 °C</u>
	Appearance	clear	clear
	Sedimentation	none	none
	Bubble flow time	max. 5 s	max. 5 s
Water tolerance test		<u>120 h / -40 °C</u>	<u>24 h / 60 °C</u>
	Appearance	clear	clear
	Sedimentation	none	none
	Bubble flow time	max. 10 s	
Compatibility with RM		<u>24 h / -40 °C</u>	<u>24 h / 60 °C</u>
	Appearance	clear	clear
	Sedimentation	none	none
Effect on SBR		<u>70 h / 70 °C</u>	<u>70 h / 120 °C</u>
	Increase in base diameter	0.15 – 1.4 mm	0.15 – 1.4 mm
	Decrease in hardness, IRHD	max. 10	max. 15
	Appearance of cups	not tacky, no blistering	not tacky, no blistering

Resistance to oxidation

	<u>168 h / 70 °C</u>
	Change in weight of metals in mg/cm ²
Aluminium	max. 0.05
Cast iron	max. 0.30
Appearance of the metals	no roughening, no pitting
Rubber deposit	none

Corrosion

	<u>120 h / 100 °C</u>
	Change in weight of metals in mg/cm ²
Tinned iron	max. 0.2
Steel	max. 0.2
Aluminium	max. 0.1
Cast iron	max. 0.2
Brass	max. 0.4
Copper	max. 0.4
Appearance of the metals	no roughening, no pitting
and of the liquid	no sedimentation, no gelling
pH value	7 – 11.5
SBR cups	
Increase in base diameter	max. 1.4 mm
Decrease in hardness, IRHD	max. 10
Appearance of cups	not tacky, no blistering

Stroking Test

Stroking test acc. to FMVSS No.116	complies
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Handling	Brake fluid is hygroscopic and has to be stored in tightly sealed containers. After removal of brake fluid the containers must be closed immediately.
Quality control	The above data represent average values at the time of going to press of this technical information. They cannot be regarded as specified data. Specified product data are issued as a separate product specification
Storage stability	Hydraulan 406 ESI has a shelf life of at least five years when stored under appropriate conditions in original closed containers at temperatures of maximum 40 °C.
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	<p>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.</p> <p>It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.</p>

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