

MIDEL® eN

Technical Datasheet No 5

Natural Ester Dielectric Insulating Fluid Product Overview

Currently there is no IEC standard for Unused Natural Esters to mirror IEC 61099 for Unused Synthetic Esters.

Therefore the values on this datasheet have been determined according to the test methods identified, which have

been chosen to highlight common basic fluid parameters.

Natural Ester Transformer Fluid

Property	Test method	Value	Unit
Physical properties			
Colour	ISO 2211		HU
Appearance	IEC 61099 9.2	clear, free from suspended matter and sediment	-
Density at 20°C	ISO 3675	0.92	kg/dm ³
Kinematic viscosity at 40°C	ASTM D 445	37.0	mm ² /s
Kinematic viscosity at -20°C		1485	mm ² /s
Flash point	ISO 2592	327	°C
Fire point	ISO 2592	356	°C
Pour point	ISO 3016	-31	°C
Crystallisation	IEC 61099 9.9	No crystals	-
Chemical properties			
Water content	IEC 60814	Typically 50	mg/kg
Neutralisation	IEC 61099 9.11	<0.03	mg KOH/g
Oxidation stability	IEC 61125		
- Total acidity		1.39	mg KOH/g
- Total sludge content		0.09	% mass
Net calorific value	ASTM D 240-02	37.5	MJ/kg
Dielectrical properties			
Breakdown voltage	IEC 60156	>75	kV
Dielectric dissipation factor	IEC 60247	<0.003	-
Tan δ at 90°C and 50 Hz			

Data quoted above are typical values. It is the policy of M&I Materials Ltd to continually improve product quality. The published values above may be altered without notice and do not constitute a specification.