

IEEE C57.121 IEEE Guide for Acceptance and Maintenance of Less Flammable Hydrocarbon Fluids in Transformers			Table 1 As Received New Fluid Property Requirements	Table 2 Typical Values for Less Flammable Hydrocarbon Fluids Received in New Equipment			Table 3 Acceptable Limits for Continued Use of Service-Aged Less Flammable Hydrocarbon Fluids
				≤34.5kV Class & Below	Above 34.5kV Class	Desirable	
Analysis	ASTM Method	NTT Value	Limit Value	Limit Value	Limit Value	Limit Value	
Moisture Content (ppm)	D-1533		Maximum 35	Maximum 25			Maximum 45
IFT (dyn/cm)	D-971		Minimum 40	Minimum 38			Minimum 22
Neutralization Number (mg KOH/g)	D-974		▲▲ Maximum ▲▲ 0.03	▲▲ Maximum ▲▲ 0.03			▲▲ Maximum ▲▲ 0.25
Color (ASTM Color Scale)	D-1500		Maximum 4.0	N/A			N/A
Visual (relative)	D-1524		N/A	Clear			N/A
Power Factor @25°C (%)	D-924		Maximum 0.05	Maximum 0.1			Maximum 1.0
Power Factor @100°C (%)	D-924		Maximum 0.30	Maximum 1.0			N/A
DIE (kV)	D-877		Minimum 25	Minimum 30			Minimum 24
DIE (kV)	D-1816 (0.04" gap)		N/A	Minimum 20	Minimum 25	Minimum 30	N/A
DIE (kV)	D-1816 (0.08" gap)		N/A	Minimum 40	Minimum 50	Minimum 60	N/A
Viscosity (cSt@0°C)	D-445 (0°C)		2.2x10 ⁻³ To 2.9x10 ⁻³	N/A			N/A
Viscosity (cSt@40°C)	D-445 40(°C)		1.2x10 ⁻⁴ To 1.4x10 ⁻⁴	N/A			N/A
Viscosity (cSt@100°C)	D-445 100(°C)		1.3x10 ⁻⁵ To 1.9x10 ⁻⁵	N/A			N/A
Pour Point (°C)	D-971		Maximum -15	N/A			N/A
Flash Point (°C)	D-92		Minimum 273	270-290°C			N/A
Fire Point (°C)	D-92		Minimum 300	Minimum 300°C			Minimum 300°C
Specific Gravity (15°C/15°C)	D-1298		0.869 To 0.910	N/A			N/A

Note: Our test results relate only to the sample or samples tested. Northern Technology and Testing, Inc. does not imply that the contents of the sample received by this laboratory are the same as all such material in the environment from which the sample was taken. The analysis, opinions, or interpretations contained in this report are based upon material and information supplied by the client. Any interpretations or opinions expressed represent the best judgment of Northern Technology and Testing, Inc. Northern Technology and Testing, Inc. assumes no responsibility and makes no warranty or representation, expressed or implied as to the conditions, productivity, proper operation, or profitability of any equipment or other property for which this report may be used or relied upon for any reason whatsoever. NTT assumes no responsibility for foreign lab data which is provided by the customer.