

Table 4 – General specifications, Type B (uninhibited and inhibited standard grade oils)

Property	Test method	Limits	
		Transformer oil	Low temperature switchgear oils
1 – Function			
Viscosity at 40 °C	ISO 3104 ^a or ASTM D7042	Max. 12 mm ² /s	Max. 3,5 mm ² /s
Viscosity at –30 °C ^b	ISO 3104 ^a or ASTM D7042	Max. 1 800 mm ² /s	–
Viscosity at –40 °C ^c	IEC 61868	–	Max. 400 mm ² /s
Pour point	ISO 3016	Max. –40 °C	Max. –60 °C
Water content	IEC 60814	Max. 30 mg/kg ^d / 40 mg/kg ^e	
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV ^f	
Density at 20 °C	ISO 12185 ^a or ISO 3675 or ASTM D7042	Max. 895 kg/m ³	
DDF at 90 °C	IEC 60247 ^a or IEC 61620	Max. 0,005	
2 – Refining/stability			
Colour	ISO 2049	Max. 1,5	
Appearance	–	Clear, free from sediment and suspended matter	
Acidity	IEC 62021-2 ^a or 62021-1	Max. 0,01 mg KOH/g	
Interfacial tension	IEC 62961 ^a or ASTM D971	Min. 40 mN/m	
Corrosive sulphur	DIN 51353	Not corrosive	
Potentially corrosive sulphur	IEC 62535	Not corrosive	
DBDS	IEC 62697-1	Not detectable (< 5 mg/kg)	
Inhibitors of IEC 60666	IEC 60666	Uninhibited (U): not detectable (< 0,01 %) Trace inhibited (T): ≥ 0,01 < 0,08% Inhibited oil (I): 0,08 % to 0,40 % (see 3.5 to 3.7)	
Metal passivator additives of IEC 60666	IEC 60666	Not detectable (< 5 mg/kg), or as agreed upon with the purchaser	
Other additives		See ^g	
2-furfural and related compounds content	IEC 61198	Not detectable (< 0,05 mg/kg) for each individual compound ^h	
3 – Performance			
Oxidation stability	IEC 61125 Test duration ⁱ (U) Uninhibited oil: 164 h (T) Trace inhibited oil: 332 h (I) Inhibited oil: 500 h	For oils with other antioxidant additives and metal passivator additives, see 6.12.2	
– Total acidity ^j	4.8.4 of IEC 61125:2018	max. 1,2 mg KOH/g	
– Sludge ^j	4.8.1 of IEC 61125:2018	max. 0,8 %	
– DDF at 90 °C ^j	4.8.5 of IEC 61125:2018	max. 0,500	
4 – Health, safety and environment (HSE) ^k			
Flash point	ISO 2719	Min. 135 °C	Min. 100 °C
PCA content ^l	IP 346	< 3 %	
PCB content	IEC 61619	Not detectable (< 2 mg/kg)	