

ISOVOLTINE 410 FIP



LUBRICATION



TOTAL

TEST DESCRIPTION	TEST METHOD	SPECIFICATIONS		TYPICAL VALUES
		MIN	MAX	
Physical Properties				
Viscosity, cSt at 100°C	ASTM D 341		3.0	2.3
Viscosity, cSt at 40°C	ASTM D 341		12.0	9.3
Viscosity, cSt at 0°C	ASTM D 445		76	72
Specific Gravity, 15°C/15°C	ASTM D 4052		0.9100	0.8862
Flash Point, COC, °C	ASTM D 92	145		155
Color, ASTM	ASTM D 6045		0.5	1.0.5
Pour Point, °C	ASTM D 5949		-40	-64
Aniline Point, °C	ASTM D 611	63.0		74.7
Interfacial Tension, 25°C, dynes/cm	ASTM D 971	40		51
Visual Examination	ASTM D 1524	Clear & Bright		Clear & Bright
Electrical Properties				
Dielectric Breakdown at 60 Hz, Disk electrodes, kV	ASTM D 877	30		40
Dielectric Breakdown at 60 Hz, VDE, kV (2.03-mm) gap	ASTM D 1816	35		50
Power Factor at 60 Hz, 25°C, %	ASTM D 924		0.05	0.005
Power Factor at 60 Hz, 100°C, %	ASTM D 924		0.30	0.075
Chemical Properties				
Oxidation Stability	ASTM D 2440			
72 hr: Sludge, % by mass			0.1	<0.01
Total Acid Number, mg KOH/g			0.3	<0.01
164 hr: Sludge, % by mass			0.2	<0.01
Total Acid Number, mg KOH/g			0.4	<0.01
Oxidation Stability (Pressure Vessel), minutes	ASTM D 2112	195		248
Oxidation Inhibitor Content, wt%	ASTM D 2668	0.15	0.30	0.26
Corrosive Sulfur	ASTM D 1275 (B)	Noncorrosive		Noncorrosive
Water Content, ppm	ASTM D 1533		35	9
Neutralization Number, mg KOH/g	ASTM D 974		0.03	<0.01
PCB Content, ppm	ASTM D 4059		Not detected	Not detected
Health and Safety Properties (not an ASTM D 3487 requirement)				
Polycyclic Aromatic Compounds, wt%	IP 346		3	<3
Modified Ames Assay	ASTM E 1687	PASS		PASS
FDA Regulation	21 CFR 178.3620 (C)	PASS		PASS

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This lubricant must be applied as recommended and used for the application for which it was designed. TOTAL Specialties USA, Inc. will have no responsibility for any injury to persons or property resulting from misuse or misapplication of the lubricant. A safety data sheet conforming to the OSHA Hazard Communication Standard 29 CFR Section 1910.1200 can be downloaded at www.totalspecialties.com. Copyright 2016 All rights reserved.