

ESTERTEC® VSP High-Performance Lubricant Base Stocks

Technical Data Sheet

Vicinal Secondary Polyol (VSP) synthetic esters offer exceptional performance based on their innovative structure achieved via a unique production process. Steric hindrance enhances oxidative stability, while secondary alcohols on adjacent carbons significantly improve hydrolytic stability. ESTERTEC® VSP base stocks deliver natural energy efficiency with a combination of low density and high VI that significantly reduce friction and wear. Designed for formulating industrial/automotive lubricants and dielectric fluids.

Property, Typical Values	Test Method	EXP 1416	EXP 1418	EXP 1425	EXP 1432
Appearance	Visual	Clear liquid	Clear liquid	Clear liquid	Clear liquid
Viscosity, cSt (100 °C)	ASTM D7042	3.6	4.1	5	7
Viscosity, cSt (40 °C)	ASTM D7042	16	18	25	33
Viscosity, cSt (20 °C)	ASTM D7042	38	42	57	75
Viscosity index	ASTM D2270	110	125	140	180
Density/Specific gravity @ 25 °C	ASTM D4052	0.895	0.893	0.890	0.890
Pour point, °C	ASTM D97	-60	-40	-25	-42
Flash point, °C (COC)	ASTM D92	230	240	250	295
TAN, mg KOH/g	ASTM D974	< 0.10	< 0.10	< 0.10	< 0.10
Water content, weight %	ASTM D6304	< 0.10	< 0.10	< 0.10	< 0.10
Noack volatility, weight % (250 °C)	ASTM D6375	9	7	3	1
Foam tendency, ml @ 25 °C	ASTM D892	< 10	< 10	< 10	< 10
Demulsibility, minutes to 0 ml emulsion	ASTM D1401	15	15	15	15
Copper corrosion	ASTM D130	1b	1b	1b	1b
Thermal conductivity, W/mK	ASTM D7896	0.137	0.139	0.142	0.145
Specific heat, kJ/kg·°C	ASTM E2716	2.15	2.15	2.20	2.15
Dielectric constant	IEC 60247	3.20	3.10	3.00	2.87
Power factor	IEC 60247	< 0.03	< 0.03	< 0.03	< 0.03
Dielectric breakdown voltage, 2mm, KV	ASTM D1816	50	50	50	50
Oxidation onset temperature (OOT) °C	ASTM E2009	255	255	260	255
Hydrolytic stability Oil / Water acidity, mg KOH/g / mg KOH	ASTM D2619	0.03 / 1.0	0.02 / 1.0	0.02 / 2.0	0.01 / 0.8

Features

- ▶ Excellent lubricity, low friction and antiwear
- ▶ Best-in-class hydrolytic stability
- ▶ Good thermal/oxidative stability
- ▶ High flash point, low pour point
- ▶ Low density for energy efficiency
- ▶ Readily biodegradable, > 60 % biogenic content

Applications

- ▶ Metalworking fluids – soluble and straight oils
- ▶ Engine oils
- ▶ Transmission & driveline fluids
- ▶ Industrial lubricants
- ▶ Transformer oils, dielectric fluids
- ▶ EAL, sustainable lubricants and fluids

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