

Puma Transformer Oil - Uninhibited

Puma Transformer Oil is a high quality un-inhibited insulating oil manufactured from naphthenic base stocks. It offers excellent dielectric properties and is designed for use in power, distribution and industrial transformers, switch gear, rectifiers, circuit breakers and other electrical equipment

- ✓ Dielectric Strength
- ✓ Oxidation Resistance
- ✓ Low Acid Sludge Formation
- ✓ Wax Free

Designed to Perform

Puma Transformer Oil is an insulating oil formulated from a high quality naphthenic base stocks, refined free of aromatic, acidic and alkaline components. It has low volatility and excellent fluidity at low temperatures without adding additives. Puma Transformer Oil does not contain corrosive sulfur. Its primary application is to deliver excellent dielectric strength exceeding the requirements for all major specifications. Puma Transformer Oil does not attack or destroy the insulation coatings transformer coils.

It offers inherent natural protection against and resistance to oil degradation, reducing maintenance and extending transformer life.

Benefits

- ✓ Good Dielectric strength providing excellent operational performance under stressful conditions
- ✓ Inherent natural resistance to oil degradation due to high quality naphthenic base stocks used providing extended fluid life.
- ✓ High stability and resistance to oxidation at high temperatures.
- ✓ Good low temperature wax free properties ensure proper heat transfer even from low starting temperature's
- ✓ Good thermal conductivity and chemical stability allow Puma Transformer Oil to cool transformers efficiently when operated at high temperatures for extended periods.
- ✓ Low acid sludge formation when operated at high temperatures for extended periods.

Applications

Puma Transformer Oil is recommended for use in Generation, Distribution and Industrial transformers. Its primary application is to provide insulation and thermal cooling for transformers. It is also recommended for use in switch gears, rectifiers, circuit breakers, electric self-starters and other electric equipment.

Specifications

Puma Transformer Oil meets the specification requirements defined under specifications of

- IEC 60296 ed. 4, 2012
 - AS 1767.1-19999
 - IEC 296 (1991) Class 1
- Puma Transformer Oil fully passes the corrosive Sulphur tests as detailed;
- ASTM D1275 Method B – Non-corrosive
 - IEC 62535 - Non-corrosive
 - DIN 51353 - Non-corrosive

Storage

Puma Transformer Oil should always be stored indoors in a moisture-free environment. Transformer oils are very sensitive to moisture and other forms of contamination as they will significantly reduce its dielectric properties. Good quality Puma Transformer Oil is hygroscopic and will readily absorb moisture from the air if drums are left open. It is best practice to not store transformer oils for extended periods and imperative to vacuum dehydrate them before filling into transformers.

Typical Physical Characteristics					
Property	Temp	Units	ASTM Method	Specification	Typical Results
Function					
Density	20°C	g/ml	ISO 12185	0.895 max	0.882
Kinematic Viscosity	40 °C	mm2/sec	ISO 3104	12 max	9.9
	-30 °C	mm2/sec	ISO 3104	1800 max	1162
Pour Point	°C	°C	ISO 3016	-40°C	-490°C
Water Content		mg/Kg	IEC 60814	<30	7
Breakdown Voltage		kV	IEC 60156	70 min	75
Dielectric Dissipation Factor (DDF)	90 °C		IEC 60247	0.005 max	0.001
Refining / Stability					
Appearance			IEC 60296	Pass	Pass
Acidity		mg KOH/g	IEC 62021	0.01	<0.01
Interfacial Tension		mN/m	ASTM D971	40 min	45
Corrosive Sulphur		Pass	DIN 51353	Non-corrosive	Non-corrosive
		Pass	ASTM D 1275	Non-corrosive	Non-corrosive
		Pass	IEC 62535	Non-corrosive	Non-corrosive
DBDS		mg/kg	IEC 62697-1	Not Detected<5	Not Detected
Inhibitors		%	IEC 60666	Not Detected<0.01	Not Detected
Metal Passivator Additives		mg/kg	IEC 60666	Not Detected<5	Not Detected
Furfural Content		mg/kg	IEC 61198	Not Detected<5	Not Detected
Carbon Type Analysis	Ca	%	IR Brandes		11
	Cn	%	IR Brandes		40
	Cp	%	IR Brandes		49
Oxidation Performance					
Stability to Oxidation	164Hr at 120°C		IEC 61125C		
Total Acid		mg KOH/g		1.2 max	0.6
Sludge		%		0.8	0.2
DDF	90°C			0.500	0.044
Health, Safety and Environment					
PCA content		%	IP 346	3	<3
PCB content		mg/kg	IEC 61619	Not detectable (<2)	Not Detected
Flash Point	°C		ISO 2719	135 min	1460C

Health & Safety Environment

- This product is unlikely to present any significant health and safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
- Avoid contact with eyes and skin, use proper impervious gloves with used oil. After skin contact, wash immediately with soap and water. Guidance on health and safety is available on the appropriate Safety Data Sheet (SDS) which can be obtained from sds.pumaenergy.com.au

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The information contained herein is accurate at the time of this review. However specifications change from time to time. Ensure specifications meet equipment manufacture requirements.
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