Luminol™ Bi (Europe)

High-Efficiency Electrical Insulating Fluids

LUMINOL™ Outperforms Naphthenic Electrical Insulating Oils

Petro-Canada's LUMINOL family of electrical insulating fluids represents a breakthrough in electrical insulating fluids technology. Unlike naphthenic mineral oils, LUMINOL uses Petro-Canada's ultra-pure severely hydrotreated iso-paraffin base fluids to help minimize power loss and maximize your productivity. These fluids contain no corrosive sulphur that may lead to transformer breakdown.

LUMINOL fluids withstand energy spikes, as well as hot and cold weather extremes, better than naphthenic electrical insulating oils. Thanks to their naturally high oxidation stability, LUMINOL fluids resist breakdown longer and help provide extended service life. So you spend less money on routine transformer maintenance and fluid top-up, and less time worrying about your transformers' efficiency.

LUMINOL delivers worry-free, corrosive sulphur-free performance in your transformer.

Environmental, Health & Safety Benefits

LUMINOL fluids in your transformers can help reduce disposal costs and the potential impact of spills, as well as answer possible community concerns about transformer oil toxicity. Petro-Canada produces LUMINOL fluids using the patented HT purity process combined with Hydroisomerization. These ultra-pure fluids are inherently biodegradable in natural environments, free of carcinogenic polynuclear aromatics (PNAs) and virtually non-toxic. As well, LUMINOL's high flash point helps reduce the risk of fire and explosion.

Facts about LUMINOL Bi

LUMINOL Bi is ideal for use in large power and distribution transformers operating at peak capacity as well as free-breathing units, pad mount, and pole mount transformers; for commercial, industrial and institutional applications:

- Meets International Electrotechnical Commission, IEC 60296 General specifications for inhibited transformer oil.
- Meets or exceeds IEC 60296 Section 7.1 Specific requirements for special applications – Higher oxidation stability and low sulphur content.
- Passes the standard corrosive sulphur tests DIN 51353 and ASTM D1275B without the use of copper passivators.
- Meets or exceeds the performance requirements of CSA-C50 (Class B), ASTM D3487 standards and DOBLE TOPS specifications.

Demonstrated Characteristics Include:

- Excellent heat transfer capability to help enhance transformer performance.
- Outstanding oxidation stability to help extend service life of load tap changers.
- Low power-factor (dielectric loss) to reduce thermal runaway under conditions of high electric stress.
- Full compatibility with existing naphthenic insulating oils, which enhances the performance of the combined fluids.
- LUMINOL Bi contains no corrosive sulphur compounds and does not require passivators.
- LUMINOL Bi is colourless and odourless.

Dependable Supply Today And Tomorrow:

- Available in bulk and 205 L drums.
- Ongoing supply is tailored to meet individual requirements.
- Available only from Petro-Canada, one of the world's most dependable producers of advanced fluids.

Typical Performance Data

Property	Test Method	IEC 60296 GENERAL SPEC (Transformer Oil)	Luminol Bi
FUNCTION			
Density, g/mL at 20°C	ISO 3675	0,895 max	0,832
Kinematic Viscosity, mm^2/s at 40°C	ISO 3104	12 max	9,84
Kinematic Viscosity, mm^2/s at -30°C	ISO 3104	1800 max	537
Pour point, °C	ISO 3016	-40 max	<-40
Water Content, mg/kg	IEC 60814	max 30 (bulk supply) max 40 (drums and IBC)	<20
Breakdown voltage, kV	IEC 60156	min 30	96
DDF at 90°C	IEC 60247	max 0,005	<0,001
REFINING/STABILITY			
Appearance	Visual	Clear, free from sediment and suspended matter	Clear, free from sediment and suspended matter
Acidity, mg KOH/g	IEC 62021	max 0,01	<0,01
Interfacial tension	ISO 6295	No general requirement	49
Total sulphur content	ISO 14596	No general requirement	<1ppm
Corrosive sulphur	DIN 51353	Not corrosive	Non-corrosive
Antioxidant additive	IEC 60666	(I) inhibited oils: 0,08-0,40%	0,20%
2-furfural content, mg/kg	IEC 61198	max 0,1	<0,005
PERFORMANCE			
Oxidation stability	IEC 61125 C (I): 500h		500h
-Total acidity, mg KOH/g		max 1,2	<0,02
-Sludge, %		max 0,8	<0,02
DDF at 90°C	IEC 60247	max 0,500	<0,001
Gassing	IEC 60628	No general requirement	+20
HEALTH, SAFETY & ENVIRONMENT			
Flash point, °C	ISO 2719	min 135	175
PCA content	IP346	max 3%	0,1%
PCB content	IEC 61619	Not detectable	Not detectable
The values quoted above are typical of normal production. They do not constitute a specification.			

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CERTIFIED
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Beyond today's standards. PETRO-CANADA™