

# Enetrans WI

## Electrical Insulating Oil

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“Enetrans WI” is inhibited transformer oil and, produced from a severely hydrotreated naphthenic oil to meet the specification requirements defined in ‘Transformer oil I-30°C’ of IEC 60296 (2012).

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● **Special Features and Benefits**

**1. Outstanding oxidation stability**

“Enetrans WI” is manufactured by advanced process based on JX Nippon Oil & Energy Corporation’s extensive experience and technology on production of insulating oils. As a result, it resists sludge formation and can be used safely for long periods.

“Enetrans WI” meets higher oxidation stability limits for specific requirements in IEC 60296.

**2. Non corrosive sulfur**

“Enetrans WI” has almost no sulfur compound by very severe hydrotreating process. Consequently, corrosive sulfur doesn’t exist in it at all.

**3. High dielectric breakdown voltage (Dielectric strength)**

“Enetrans WI” is broadly applicable to transformers of ultra-high voltage from low voltage, since electrical insulation properties are very high.

**4. Low dielectric dissipation factor**

“Enetrans WI” is extremely low dielectric dissipation factor (power factor), so the loss of energy is very small.

**5. Superior cooling properties**

“Enetrans WI” is low viscosity and good fluidity, so it provides superior cooling property for heat generation from core and winding.

● **Applications**

Oil-immersed transformers, including UHV power transformer. Circuit breakers, switches, tap changers, and other oil-immersed electrical equipment.

● **Containers**

200-liter drums

● **JX Nippon Oil & Energy Corporation**

JX Nippon Oil & Energy Corporation is the largest petroleum company in Japan and has long history more than one century. The history of electrical insulating oil is also more than 50 years. All Japanese power companies use JX’s electrical insulating oil and trust JX’s technology.

## Typical properties of “Enetrans WI” & Specification of IEC60296

Property	Unit	Transformer oil I-30°C	Enetrans WI	Test Method
		Specification	Typical value	
<b>1-Function</b>				
Viscosity (40°C)	mm <sup>2</sup> /s	12max	8.3	ISO 3104
Viscosity (-30°C)	mm <sup>2</sup> /s	1800max	644	
Pour point	°C	-40max	<-45	ISO 3016
Water content	mg/kg	30max	15	IEC 60814
Breakdown voltage	kV	30min	>70	IEC 60156
Density (20°C)	g/ml	0.895max	0.879	ISO 12185
Dielectric Dissipation factor (90°C)		0.005max	<0.001	IEC 60247
<b>2-Refining/stability</b>				
Acidity	mgKOH/g	0.01max	<0.01	IEC 62021
Corrosive sulphur		Not corrosive	Not corrosive	DIN 51353
Potentially corrosive sulphur		Not corrosive	Not corrosive	IEC62535
DBDS	mg/kg	Not detectable	Not detectable	IEC62697-1
Inhibitor of IEC60666	%	0.08-0.4	0.35	IEC60666
Metal passivator additives of IEC60666	mg/kg	Not detectable	Not detectable	IEC60666
2-Furfural and related compounds content		Not detectable	Not detectable	IEC 61198
<b>3-Performance</b>				
Oxidation stability (120°C, 500h)				IEC 61125 Method C
Total Acidity	mgKOH/g	1.2max	0.04	
Sludge	%	0.8max	0.00	
DDF		0.500max	0.005	
<b>4-Health, safety and environment (HSE)</b>				
Flash point (PM)	°C	135min	140	ISO 2719
PCA content	%	3max	<3	IP346
PCB content	mg/kg	Not detectable	Not detectable	IEC61619

Note: The typical properties may be changed without a notice (Apr. 2016).