

# Novvi™ XFo Transformer Oil



## High Performance Synthetic Renewable Dielectric Fluid



Novvi™ XFo Transformer Oil is the first renewable and biodegradable dielectric fluid that is a pure hydrocarbon. This allows it to be a true drop-in replacement for petroleum products, exceeding ASTM D3487 and IEC 60296 specifications. It is an inhibited grade, specifically engineered to deliver maximum resistance to oil degradation for prolonged high performance operation. High viscosity index and dielectric strength allow product use over a wide temperature range and under heavy electric stress. Outstanding oxidation stability and high temperature properties are expected to extend transformer life and reduce maintenance.

### HIGHLIGHTS

FEATURES	BENEFITS
Meets ASTM D3487 & IEC 60296	Rigorous assurance of physical, electrical, and chemical properties and performance
Excellent heat transfer characteristics	Heat easily removed from core and windings
Outstanding oxidation stability	Extends transformer life and reduces maintenance
Low pour point	Can be used in very cold environments
Exceptional dielectric strength	Withstands high electric stress without breakdown
High purity synthetic hydrocarbon base oil	High performance and drop-in compatibility for mineral oil replacement
Low toxicity	Reduces environmental impact in case of leaks or spills
Biodegradable	Safer for use in areas where an unintended release would impact local environment

### TYPES

- Power Transformers
- Distribution Transformers

### APPLICATIONS

- Underground
- Over Water
- Mobile
- Any Environmentally Sensitive Area

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## SPECIFICATIONS

### PERFORMANCE MEETS OR EXCEEDS

ASTM D 3487 Type II

IEC 60296

## TYPICAL PROPERTIES

PROPERTY	TEST METHOD	ASTM D 3487 Type II Oil Limits	Novvi XFo
<i>Physical:</i>			
Aniline point, °C	D611	63 min	113.4
Color	D1500	0.5 max	L 0.5
Flash point, min, °C	D92	145 min	178
Interfacial tension at 25 °C, min, dynes/cm	D971	40 min	45
Pour point, max, °C	D97	-40 max	-42
Relative Density, 60/60	D1298	0.910 max	0.818
Kinematic Viscosity, cSt (SUS) at: 100°C, 40°C, 0°C	D445	max 3.0, 12.0, 76.0	3.4, 14.3, 94.0
Visual examination	D1524	Clear & bright	Clear & bright
<i>Electrical:</i>			
Dielectric breakdown, kV	D877	30 min	49
Dielectric breakdown, kV	D1816 (1 mm gap) (2 mm gap)	20 min 35 min	31 48
Gassing Tendency, max, µL/min	D2300	30 max	-2.0
Dissipation factor (power factor), at 60 Hz max, %: 25°C 100°C	D924	max 0.05 0.30	0.001 0.01
<i>Chemical</i>			
Oxidation stability (acid sludge) 72 hours: % sludge by wt. Total acid no., mg KOH/g 164 hours: % sludge by wt. Total acid no., mg KOH/g	D2440	max 0.1 0.3 0.2 0.4	<0.01 <0.01 <0.01 <0.01
Oxidation Stability (Rotating Bomb), minutes	D2112	195 min	>550
Corrosive Sulfur	D1275B	Non-corrosive Tarnish Level	Non-corrosive 2d
Water content, ppm	D1533	35 max	9
Neutralization Number, mg KOH/g	D974	0.03 max	<0.01
PCM content, ppm	D4059	ND	ND

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.



Corporate Headquarters:  
5885 Hollis Street, Ste. 100  
Emeryville, CA 94608 USA

Main Phone: +1-510-601-4657  
Website: [www.novvi.com](http://www.novvi.com)  
Email: [info@novvi.com](mailto:info@novvi.com)