



NYCO
INDUSTRY & AUTOMOTIVE



NYCODIEL® 1200 series

SYNTHETIC ESTER-BASED DIELECTRIC FLUIDS



Safe and high performance solutions for transformers

NYCODIEL® 1200 series

SYNTHETIC DIELECTRIC FLUIDS FOR TRANSFORMERS

NYCODIEL® 1233

- Low viscosity at very low temperature
- High renewable carbon content
- High safety requirement vs. mineral oil.

NYCODIEL® 1244

IEC 61099/ IS 16081

- Low viscosity for better cooling
- Higher biodegradability and renewable carbon content.

NYCODIEL® 1258

IEC 61099/ IS 16081

- Higher fire point
- High biodegradability
- The optimal dielectric choice.

FLUIDS PROPERTIES

CHARACTERISTIC	UNIT	IEC 61099 limits	METHOD	NYCODIEL® 1233	NYCODIEL® 1244	NYCODIEL® 1258
Appearance		Limpid	Visual	Limpid	Limpid	Limpid
Colour Alpha		max 200	ISO 2211	80	60	50
Density at 20°C	kg/dm ³	max 1	ISO 12185	0.95	0.98	0.97
Kinematic viscosity	mm ² /s		ISO 3104			
100°C				3.81	4.6	5.2
40°C		35		16.1	21.6	27.2
-20°C		3000		400	650	1150
Pour point	°C	max -45	ISO 3016	<-66	-45	-60
Flash point PM	°C	min 250	ISO 2719	248	255	255
Fire point	°C	min 300	ASTM D 2592	284	304	310
Inferior Heating Power	MJ/kg		ASTM D 240	32	30.6	31.8
IEC 61039 classification				03	K3	K3
Water content	mg/kg	max 200	IEC 60814	55	32	30
Acid value	mg KOH/g	max 0.03	IEC 62021-2	0.01	0.01	0.01
Oxidation stability: 164h tot. acid tot. deposit	mg KOH/g %	max 0.3 max 0.01	IEC 61125 method C	0.09 0.004	0.08 0.007	0.04 0.002
Breakdown voltage	kV	min 45	IEC 60156	65	>70	>70
Dielectric dissipation factor 90°C and 50Hz		max 0.03	IEC 60247	0.01	0.01	0.01
DC Resistivity at 90°C	GΩ.m	min 2	IEC 60247	10	7.5	10
Biodegradability - 28 days	%		OECD 301B	90	83	84

NYCODIEL® 1200 series has been successfully operated in the following applications

- Traction transformers (EMU, VHST, Tram-trains Locomotives, Railway operators, etc.)
- Windmills transformers

- Off-shore transformers
- Distribution transformers
- Etc.

NYCODIEL® 1200 series

FLEXIBLE SOLUTIONS



EXCELLENT DIELECTRIC PROPERTIES

The NYCODIEL® 1200 series meets IEC standards and enables :
Excellent dielectric dissipation, efficient heat convection, and better cooling.



HIGH OXIDATION/THERMAL STABILITY

With exceptional resistance to oxidation at high temperature, NYCODIEL® 1200 series provides long lifetime/slow ageing of dielectric systems, even in harsh conditions, and extremely low deposits and sludge formation.



ENVIRONMENTALLY FRIENDLY

As readily biodegradable products with non-hazardous classification, NYCODIEL® 1200 series fluids have lower impact on the environment in case of leakage. Containment measures can be adapted accordingly.



FIRE SAFETY

With high fire points and K3 classification (IEC 61039), NYCODIEL® 1200 series reduces the need for ancillary fire-fighting equipment and are suitable for indoor, outdoor and underground installations.



LOW TEMPERATURE CAPABILITY

With extra low pour point and low viscosity at low temperature, NYCODIEL® 1200 series can be used in cold climate and over a wide range of temperature (from -45 to +140°C).



HIGH MOISTURE TOLERANCE

With high saturation limits, NYCODIEL® 1200 series can absorb large quantities of moisture without impacting breakdown voltage. It enables : slower ageing of transformers, extension of cellulose insulation life, reduction of bubble evolution during overloads and of condensation during cool down.

NYCODIEL® 1200 series is particularly suitable for installations located in sensitive areas such as rivers and lakes sides, sub-urban, confined and restricted areas.

COMPARATIVE TABLE

Dielectric fluids	Specification	Environment friendly	Fire safety	Low temperature capability	High T° oxidation stability	Moisture tolerance
Naphthenic oils	IEC 60296	●	●	●	●	●
Silicone oils	IEC 60836	●	●	●	●	●
Vegetable oils	IEC 62770	●	●	●	●	●
Synthetic esters	IEC 61099	●	●	●	●	●

Synthetic esters such as **NYCODIEL® 1200 series** are a safe and high performance solution for transformers and electro-technic systems, displaying a broad range of benefits versus other insulating fluids, easily offsetting capital expenditure costs.

Synthetic esters such as NYCODIEL® 1200 series fluids are the only dielectric choice combining safety, high temperature capability, good low temperature behavior and eco-compatibility.

OEM APPROVALS AND EXPERIENCE

NYCODIEL® 1200 series has been qualified by several transformer manufacturers and accepted for use without restriction, providing excellent performances in service.

It is also approved to be used with MR VACUTAP®, DEETAP® and COMTAP® tap-changers.

