



MAKER BIO ELECTRA

Description

Dielectric oil based on plant-derived esters, rapidly biodegradable and non-toxic for both aquatic and land ecosystems. It is an increased safety fluid thanks to its high ignition point and the lack of risk factors on its safety sheet.

To be used as a dielectric insulator in transformers, reactors, and electrical switches.

Can be used in both new electrical equipment as well as to fill equipment that was previously using a different type of dielectric fluid. Especially for those cases that require a fluid with a high flash point or for use in environmentally sensitive areas.

Properties

- Vegetable oil in a percentage greater than 99%
- No synthetic antioxidants.
- No silicones, halogens, or any other component that could pose a risk to health or the environment.
- Ignition point over 300 °C. Reduces risk of fires and their consequences.
- Classified as a type K2 fluid according to IEC 61100.

Quality levels, approvals and recommendations

- EDF*
- UFD*
- Classified as a K2 liquids according to IEC 61100
- EDP*
- ASTM: D6871
- IEC: 62770

*Formal approval



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Technical specifications

	UNIT	METHOD	VALUE
PHYSICAL AND CHEMICAL PROPERTIES			
Fire point	°C	ASTM D92	362
Flash point, open cup	°C	ASTM D92	330
Density at 20 °C	g/cm3	ASTM D4052	0,91
Kinematic viscosity at 100 °C	cSt	ASTM D445	8.5
Kinematic viscosity at 40 °C	cSt	ASTM D445	39,2
Kinematic viscosity at 0 °C	cSt	ASTM D445	275,9
Pour point	°C	ASTM D97	- 25
Appearance	-	Visual	B & T
Thermal expansion coefficient 0-50 °C	1/°C	ASTM D1903	0,00072
Thermal conductivity at 25 °C		ASTM D2717	0,1691
Specific heat at 25 °C		ASTM D2766	1,97
Acidity (neutralisation index)	mg KOH/g	IEC 62021	0,05
Water content	mg/kg	IEC 60814	150
Oxidation stability			
- Total acidity	mg KOH/g	IEC 61125	0,34
- Dielectric dissipation factor at 90 °C	-	IEC 60247	0,071
- Viscosity increase	%	ASTM D445	16,2
DIELECTRICAL PROPERTIES:			
Dielectric strength	kV	IEC 60156	65
Dielectric loss factor at 90 °C	-	IEC 60247	0,03
Diel. dissipation factor 25 °C, 50 Hz	-	ASTM D924	0,002
Electrical conductivity at 25 °C	pS/m	ASTM D2624	3
Dielectric constant at 25 °C	-	IEC 60247	3.1
Gassing tendency	µl/min	IEC 60628 A	- 31.2
ENVIRONMENTAL PROPERTIES:			
Biodegradability - 28 days	%	OECD 301B	85
Ecotoxicity in aquatic environment	mg/L	OECD 201, 202 y 203	>1,000
Ecotoxicity in land environment	mg/kg	OECD 207 y 208	>1,000

The above mentioned characteristics are typical values and should not be considered product specifications.