

AmpCool® 200-Series Dielectric Cooling Lubricants

Heat Transfer Fluids with high lubricity for Immersive Cooling of Electric Motors & Power Transmission Systems and associated Electronics.

Engineered Fluids' AmpCool AC-200 family of Dielectric Cooling Lubricating fluids are designed specifically for cooling and lubrication of electric motors, automotive kinetic energy recovery, systems, generators, and hydraulic power transfer systems in marine, vehicular, aerospace, and robotics applications. AmpCool features the highest lubricity and best in class oxidation stability coupled with the broadest material compatibility index, highest dielectric strength and best health and safety ratings available.

PRODUCT OVERVIEW:

Engineered Fluids' AmpCool Dielectric Cooling Lubricants solve the high-performance cooling, insulation, and lubrication challenges posed by today's electric vehicle, hybrid marine, aerospace propulsion, and robotic hydraulic power transfer technologies.

These applications require long lasting lubrication coupled with efficient cooling of electric motors, motor controllers, and batteries and electronic control systems. The AmpCool AC-200 family are the only product designed specifically for use as both a dielectric coolant and lubricant, enabling a significant cost reduction through use of a single fluid as dielectric coolant, lubricant, and hydraulic power transfer fluid.

Electrical motor and controller cooling with AmpCool is highly efficient, enabling both a reduction in motor size and an increase in output power. Useful in either full immersion or semi-immersion applications, the AmpCool AC-200 products provide a simple solution to getting longer distance and higher reliability from electronic propulsion systems. In addition, AmpCool provides these advantages with superior operational safety for operators and elimination of any negative environmental impacts posed by the manufacture and use of the coolants.

Engineered Fluids' AmpCool AC-200 Dielectric Cooling Lubricants are biodegradable, nontoxic, non-halogenated, food grade and 100% ozone safe. AmpCool contains no sulfur, metals, or other impurities. AmpCool delivers safe, reliable protection with outstanding high-temperature oxidation stability.

AmpCool Coolants are compatible with all materials commonly used in electric motors and are compatible with all battery chemistries. They have excellent heat transfer characteristics. Standard analysis and maintenance procedures are used with all AmpCool products.

In addition, the use and manufacture of AmpCool Dielectric Cooling Lubricants release no toxic waste or vapors into the workplace or environment, making Engineered Fluids' AmpCool coolants easy to transport, use, and clean up.

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CHARACTERISTICS OF AMPCOOL DIELECTRIC LUBRICANTS

Product ID	AC-210	AC-220	AC-230	AC-240
Typical Application	General purpose Dielectric Cooling Lubricant	High performance low viscosity, high stability, with excellent lubricity	Cooling of high temperature electronic and power transfer	Extreme temp lubrication and cooling for motors and actuators
Appearance	Clear			
Fluid Behavior	Non-Compressible, Isotropic, Newtonian			
Dielectric Strength ¹	>30kV			
Resistivity (ohm-cm)	>1x10 ¹⁴			
Dielectric Constant	2.080	2.091	2.100	2.190
Refractive Index n _D ²⁰	1.441	1.453	1.450	1.490
Pour Point (°C)	-51	-64	-44	-47
Flash Point (°C)	194	235	270	282
ISO 4406 Particle Cnt.	19/17/14	19/17/14	19/17/14	19/17/14
Total Sulfur (ppm)	0	0	0	0
Density, g/cc @ 15.6°C	0.82	0.82	0.83	0.84
Coefficient of Thermal Expansion, volume/°C	0.00069	.00066	0.00066	0.00064
Kinematic Viscosity (cSt)	0°C 43.47	117.00	305.00	595.00
	40°C 8.61	17.70	39.00	69.87
	100°C 2.40	4.00	7.24	10.19
Thermal Conductivity (W/m*K)	0°C 0.1455	0.1478	0.1518	0.1597
	40°C 0.1403	0.1459	0.11508	0.1585
	100°C 0.1325	0.1430	0.1495	0.1566
Specific Heat (kJ/kg°C)	0°C 2.0450	2.0575	2.0502	2.0733
	40°C 2.2094	2.2060	2.2030	2.220
	100°C 2.4261	2.4288	2.4180	2.440
Global Warming Potential	0	0	0	0
Biodegradability ²	>92%	>70%	>70%	>50%
Materials Compatibility Warranty	Yes	Yes	Yes	Yes
Product Operational Warranties (Yrs) ³	0, 5, 10	0, 5, 10	0, 5, 10	0, 5, 10
Shelf Life (Yrs) ³	25	25	25	25

1) Dielectric Strength is measured using ASTM D1816 method with 2mm electrode gap

2) Biodegradation is stated for a 28-Day Test Period. Biodegradation continues to occur after the initial test period.

3) See product specific warranty statement for terms and conditions. Shelf-Life duration is stated for an original sealed steel container, Shelf-life period is included in the warranty period.

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*Need more information? Please contact us at
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**Proudly Manufactured
in the United States**

