



## Koolkut EDM

Koolkut EDM is a low viscosity metalworking fluid specially developed for use in electric discharge machining (EDM) operations. It has a high dielectric strength, excellent oxidation resistance, produces rapid burn speeds, and permits rapid flushing and filterability of the metal fines or swarf in Ram EDM operations.

Electric discharge machining is a metal removal process that involves burning and eroding metal from the work piece by a succession of electric discharges between two conductors insulated by a nonconducting liquid, called a dielectric or EDM fluid. The electric discharge passes through the fluid to the work piece, resulting in metal removal at very high temperature. During this process, a gas bubble develops and its pressure rises very steadily until a plasma zone is formed. This causes instantaneous local melting of a certain amount of the metal at the surface of the two conductors. When the current is cut off, the sudden reduction in temperature causes the bubble to implode, which projects the melted material away from the work piece, leaving a small crater. The eroded material then resolidifies in the dielectric fluid in the form of small spheres and is carried away by the dielectric fluid.

Koolkut EDM typically is used for machining very hard metals into complex shapes that require extremely exacting tolerances.

### **Applications**

- Electric discharge machining operations
- Machining hard metals into complex shapes
- Machining dies, tools and molds made of hardened steel
- Machining tungsten carbide and high-speed steel

### **Outstanding Features**

- Excellent oxidation resistance to minimize sludge and varnish formation
- High dielectric strength
- Excellent filterability
- Good surface finish
- Excellent rust and corrosion protection

### **Electric Discharge Machining Fluid**

**U.S. Technical Services  
Hot line:  
1-800-766-0050**

**U.S. Customer Service:  
1-800-822-6457**

**International:  
+1-832-486-3363**

**E-mail address:  
lubricants@  
conocophillips.com**

<http://lubricants.conocophillips.com>

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**Koolkut EDM**  
**Typical Properties**

<b>ISO Grade</b>	<b>2</b>
Specific Gravity @ 15.6°C (60°F)	0.806
Density, lbs/gal	6.71
Color, Visual	Fluorescent Green
Flash Point (PMCC), °C (°F)	122 (252)
Viscosity,	
cSt @ 40°C	2.9
SUS @ 100°F	14.5
Copper Corrosion, ASTM D130	1a
Auto Ignition Temperature, °C (°F)	>220 (>428)
Interfacial Tension, ASTM D971, dynes/cm	26.0
Specific Conductivity, ohms/cm	8.2 x 10 <sup>15</sup>
Initial Boiling Point, °C (°F)	226 (439)
End Point, °C (°F)	300 (572)
Sulfur, ppm	Nil

Due to continual product research and development, the information contained herein is subject to change without notification.

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