

# METAL WORK AF

## Special High-Grade Electric Discharge Machining Oil

**METAL WORK AF** is a long-life electric discharge machining oil blended from specially refined low-aromatic base oil and antioxidant additives. Electric discharge machining oils is usually required to have various characteristics. Superior properties such as high flash point, low viscosity, odor-free nature, low skin irritancy and high oxidation stability are required in order to improve safety, workability and handling. **METAL WORK AF** has low odor and skin irritation because its aromatic content is less than 1% (FIA analysis).

### ● Special Features

#### 1. Excellent Oxidation Stability for Long-Term Use

**METAL WORK AF**, which is formulated with low-aromatic base oil and antioxidant additives, can be used for long periods of time due to its superior oxidation and heat stability.

#### 2. Outstanding Machining Performance

**METAL WORK AF** has the ideal viscosity for high-precision machining, high-speed rough machining, penetration, bottom work and all other types of electric discharge machining.

#### 3. Superb Safety

**METAL WORK AF**, which has high flash point, is less dangerous during handling and can be used more safely than kerosene.

### ● Applications

All types of electric discharge machining, including the machining of molds for automobiles, aircraft and telecommunication equipment and the machining of precision parts for electronics and nuclear power application.

### ● Containers

200 liter drums, 20-liter pail cans

### ● Results of High-Speed SKD-11 Machining Speed Test

The machining speed was measured for electric discharge machining oil to determine the amount of material machined per minute. This test proved that **METAL WORK AF** is superior the machining efficiency to the electric discharge machining oil based on the mineral oil.

METAL WORK AF	Mineral-Oil-Based Machining Oil
72mg/min	62 mg/min

#### Test Conditions

- Electrodes: 10mmX10mm copper electrodes
- Ip: 10A
- $\tau$  on: 90  $\mu$  s
- $\tau$  off: 25  $\mu$  s
- Machining surface roughness: 35  $\mu$  m Rmax.

### ● Typical properties of METAL WORK AF

Appearance		Transparent liquid
Color(Saybolt)		$\geq +30$
Density		0.817
Kinematic viscosity(40°C)	mm <sup>2</sup> /s	2.5
Flash point(PM)	°C	104
Pour point	°C	-25
Acid number	mgKOH/g	0.00
Distillation		
Initial Boiling Point	°C	239
End Point	°C	262

Note: The typical properties are subject to change without notice

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## Handling Precautions

▼ Follow these precautions when handling this product.

<b>Composition :</b>	Base Oil, Additives
<b>Precautionary pictograms:</b>	
<b>Signal word:</b>	Danger
<b>Hazard Statement:</b>	Combustible liquid May be fatal if swallowed and enters airways
<b>Precautionary Statements:</b> <b>Prevention</b>	<ul style="list-style-type: none"><li>• Do not handle until all safety precautions have been read and understood.</li><li>• Wear protective gloves/protective clothing/eye protection/face protection.</li><li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li><li>• Keep away from heat/sparks/open flames/hot surfaces – No smoking.</li><li>• Use explosion-proof electrical/ventilating/lighting/equipment.</li><li>• Ground/bond container and receiving equipment.</li><li>• Wash hands thoroughly after handling.</li><li>• Do not eat, drink or smoke when using this product.</li></ul>
<b>Response</b>	<ul style="list-style-type: none"><li>• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.</li><li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li><li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li><li>• IF ON SKIN: Wash with plenty of soap and water.</li><li>• Do NOT induce vomiting.</li><li>• In case of fire: Use suitable extinguishing media for extinction.</li></ul>
<b>Storage</b>	<ul style="list-style-type: none"><li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li><li>• Containers that have been opened must be tightly sealed.</li><li>• Store locked up.</li></ul>
<b>Disposal</b>	<ul style="list-style-type: none"><li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li><li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li></ul>