



EDM 244™ Di-Electric Fluid



Nonfood Compounds
Listed H1 & HT1
140598

WHAT IT DOES:

Commonwealth Oil's **EDM 244™** is a special fluid, developed by Commonwealth Oil for Electrical Discharge Machines utilized to produce very fine and intricate cuts and profiles. **EDM 244™** works very well when machining graphite electrodes.

WHERE TO USE IT:

EDM 244™ is designed for following applications

- Di-electric fluid in electrical discharge machining operations.
- Electrical discharge machining in the tool and die industry.
- Electrical discharge machining in the mold industry.
- Medical, computer and aerospace industries.
- Manufacturing of air craft components, valves, regulators, hardware, tools, etc...

PERFORMANCE BENEFITS:

EDM 244™ is especially formulated to deliver the following performance benefits:

- Approved for use in nuclear facilities
- Reduces DC Arcing
- Reduced chances of fire due to high flash point
- Longer fluid life. Proven field performance
- More rapid flushing at point of cut because of a lower viscosity
- Readily biodegradable
- Cleaner and clearer – when you open the bungs on the drums, you can easily see to the bottom of the barrel
- High API gravity allows rapid settling of particles in filter
- Extremely low odour levels from **EDM 244™** at the time of initial fill and after many hundreds of working hours
- Environmentally safer due to the workers' health as the aromatic and sulphur content are almost undetectable under laboratory conditions versus your typical EDM fluids now in use.
- Reduced polishing time of molds because of higher dielectric strength
- **EDM 244™** is **Transor Approved**
- **EDM 244™** is approved for use in **ONA Filtration Systems**.



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TECHNICALLY SPEAKING:

Test	ASTM Test Method	EDM 244™
NSF Registration Number		140598
Viscosity: cSt @ 25°C/77°F	D-445	3.22
Viscosity: cSt @ 40°C	D-445	2.45
Viscosity: SUS @ 100°F	D-445	34.1
Acid Number, mg KOH/g	D-974	0.02
Aniline Point, °C (°F)	D-611	92 (198)
Flash Point, COC °C	D-92	110
Flash Point, COC °F	D-92	230
Odour		Nil
Colour, Saybolt	D-156	30+
Density, lbs./US Gallon	D-1298	6.406
Specific Gravity	D-1298	0.770
Dielectric Strength		High

These are typical figures and do not constitute a specification.

Handling & Safety Information

For information on the safe handling and use of this product, refer to the Material Safety Data Sheet obtainable from Commonwealth Oil Corporation.



Available in Pails, Drums and One-Way Bulk Containers

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TECHNICALLY SPEAKING:

OXIDATION STABILITY TEST

Oxidation stability tests were performed at the University of Pittsburgh Applied Research Centre (UPARC) as well as at an independent laboratory. The ASTM D-2272 Rotary Bomb Oxidation Stability Test (RBOT) was used to compare EDM 244™ Dielectric Fluid vs. a conventional type of EDM oil. This test is an accelerated procedure for estimating the oxidation stability or life expectancy of an EDM fluid.

The RBOT method consists of the test oil, water and copper catalyst coil contained in a covered glass container, placed in a bomb that is equipped with a pressure gauge. The bomb is charged with oxygen to a pressure of 90 psi, placed in a constant temperature bath at 302°F and rotated at 100 RPM at an angle of 30° from the horizontal. The time for the oil to react with a given volume of oxygen is measured, completion of the time is indicated by a specific pressure drop.

The results of the Oxidation Stability Test are as follows:

	UPARAC	INDEPENDENT
CONVENTIONAL EDM OIL	35 MINUTES	32 MINUTES
EDM 244™ Di-Electric Fluid	660 MINUTES	558 MINUTES

As shown above, **EDM 244™** has consistently exhibited far greater oxidation stability than the premium mineral seal oils. Having greater oxidation stability means that **EDM 244™** will resist degradation longer. **EDM 244™** will retain its clarity, maintain its initial viscosity and give customers appreciably longer and greater predictable service than the conventional EDM oils.

Commonwealth Oil is the "World's Leading Manufacturer" of EDM Fluid.

SERVICE INFORMATION

Seal & Hose Compatibility: The proper choice of hose and gasket material for your EDM machine can eliminate the problems of a potential spill due to premature failure. The following materials have been shown to provide the longest life span when used with most EDM fluids.

- 1) Teflon - Tetra Fluoro Polyethylene
- 2) Neoprene - Polychloroprene
- 3) Buna-N NBR - Acrylonitrile and Butadiene
- 4) Viton - Vinylidene Fluoride Hexafluoro - Propylene
- 5) MCP - Modified Cross-Lined Polyethylene
- 6) Nylon
- 7) Polyethylene and polypropylene

Your local mill supply house, when given the above information, will be able to provide you with the proper materials.

Filtration: Effective filtering is very important for consistent machine performance and longer fluid life. Dimensional accuracy and surface finish can be maintained in workpieces with effective filtration. Poor filtration can lead to serious contamination, which may cause arcing, especially in fine finishing and the drilling of small holes, where very small gaps exist.

In respect to EDM systems, three types of filter media are used:

- a) Edge type filters
- b) Powder beds
- c) Disposable paper-element cartridges

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To a lesser extent, electrostatic separation may be used. Most of the major EDM manufacturers supply filter systems with their machines. It would be advisable to consult either the machine manufacturer or a reputable filter consultant when determining the filter type and size to be used for a particular machine. Commonwealth Oil Corporation is a pioneer in the formulation of high performance lubricants, metalworking fluids and specialty products that do not contain 1-1-1 Trichloroethane, chlorinated paraffins or other toxic or carcinogenic materials. Commonwealth metalworking fluids meet WHMIS, OSHA and other standards. We are dedicated to the continuing development of products that do NOT contain hazardous materials.

Commonwealth adheres to the highest standards of quality control. We have a long record of innovative research and development, both in our own laboratories and at independent research institutions including The University of Pittsburgh Applied Research Center, the University of Houston, Texas, and the Milwaukee School of Engineering, Milwaukee, Wisconsin and McMaster University in Hamilton, Ontario, Canada.

Commonwealth Oil continuously encourages customers to allow us to train and update their personnel with our latest techniques and current industrial trends. This service is performed with the idea that the best consumer is an informed consumer.

We invite you to talk with our distributors or ourselves about your needs and how we can assist you. You'll like our prices, and the quality of our engineered lubricants and specialty products.