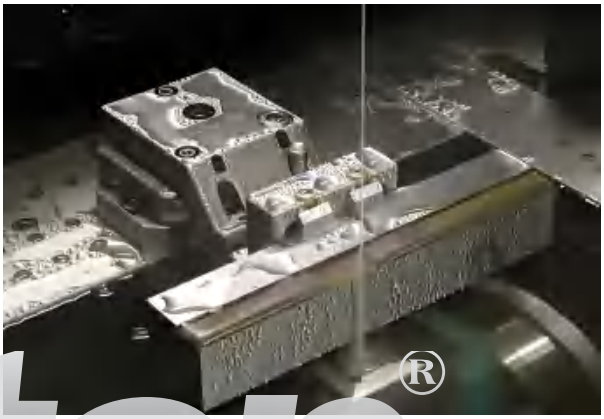
Microemulsion wire cutting fluid

Performance Overview

Maxtop Microemulsion wire cutting fluid is a type of coolant widely used in metal wire cutting processing. It belongs to a special type of microemulsion. In terms of composition, it is mainly composed of base oil, emulsifier, rust inhibitor, lubricant, extreme pressure agent, bactericide and deionized water, etc. Base oil serves as the fundamental carrier for lubrication and cooling. Emulsifiers can uniformly mix the oil phase and the water phase to form stable microemulsions. Rust inhibitors can prevent processed metals from rusting. Lubricants and extreme pressure agents can reduce friction and wear, and precisely control the electrical conductivity of the processing fluid to improve processing accuracy.



Features

01

Superior lubrication, effectively reduces friction.

02

Efficient cooling, rapidly absorbs cutting heat.

03

Excellent rustproof, forms dense protective film.

04

Thorough cleaning, strong penetration and chip removal.

05

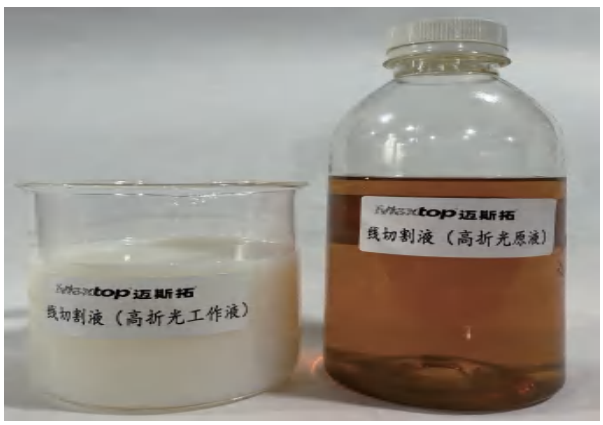
High stability, long-term homogeneity without separation.

06

Eco-friendly, water-based and greener formula.

Application Scenario

Microemulsion wire cutting fluid is suitable for various types of electrical discharge wire cutting processes, including fast wire, medium wire and slow wire processing. It can be used to process various metal materials, such as carbon steel, alloy steel, stainless steel, copper, aluminum, etc. It has extensive applications in industries such as mold manufacturing, mechanical processing, and electronic manufacturing, and can meet the requirements of different industries for metal processing accuracy, surface quality, and production efficiency.



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Performance indicators of microemulsion wire cutting fluid

Project	Quality indicators
Appearance	Uniform and transparent liquid, without suspended matter, sediment or stratification
Smell	Mild and odorless
Density (g/cm³)	1.01-1.08 (20℃)
pH value	8.5-10.5
Kinematic viscosity (mm²/s)	2-6 (40℃)
Surface tension (mN/m)	≤ 35
Foaming property (ml)	≤ 2 (after 5 minutes)
Anti-rust property	Cast iron single sheet: Grade A (72 hours) Cast
Corrosiveness	iron laminated sheet: Grade A (24 hours) It has no corrosive effect on metals such as steel,
Electrical conductivity (μS/cm)	copper and aluminum (55℃, 24 hours). 1000-4000
Dielectric constant	3.0- 6.0
Antibacterial property	Low growth rate of bacteria and mold (regular testing)
Dilution ratio	1:15/30

Comparison of microemulsion type vs. synthetic wire cutting fluid

Characteristics	Microemulsion wire cutting fluid	Synthetic wire cutting fluid
Lubricity	High (oil film lubrication)	Medium (dependent on additives)
Extreme pressure property	High (partially dependent on additives)	Medium (dependent on additives)
Cooling property	high	Extremely high
Environmental friendliness	High (degradable)	Extremely high (oil-free)
Cost	Medium to high	High (complex additive system)
Maintenance difficulty	low	Extremely low
Applicable load	High load	Medium and high load

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