

Archine Syntrend MWF-3900

Metalworking Fluids

Product Description

Archine Syntrend MWF-3900 Metalworking Lubricant is a mixture of an alkanolamine and an anionic polymer, modified to provide extreme pressure lubrication for heavy-duty machining. **MWF-3900** was developed to be used as a lubricant base in synthetic metalworking fluid formulations. By varying the concentration of **MWF-3900**, synthetic fluids can be developed which provide the machinability of heavy-duty soluble oils, synthetic, and semi-synthetic metalworking fluids. **MWF-3900** does not require combination with lubricity modifiers such as fatty acids, phosphate acid esters, or other extreme pressure agents to be an effective lubricant.

Archine Syntrend MWF-3900 is completely soluble in water at ambient temperatures. It exhibits inverse solubility and thus is able to provide both hydrodynamic and extreme pressure lubrication at low concentrations in water. **MWF-3900** is both stable and usable in hard water, resists foaming and bacterial attack, and remains fluid to prevent tacky or gummy residue formation. Unlike many other extreme pressure agents, **MWF-3900** is not selectively depleted from coolant systems, and thus when used in a fully formulated product is capable of providing long-term, trouble-free service in recirculating central coolant systems.

FEATURES

- Ease in Formulation

Forms homogeneous mixtures with ethanolamines and most amine based additives
Eliminates need for lubricant modifiers such as phosphate esters or fatty acids

- Superior Machinability

Increases tool life—use results in lower cutting forces and tool tip temperatures
Provides heavy-duty machining without the use of chlorine, sulfur, or phosphorous extreme pressure agents

Use concentration can be varied to accommodate various machinability levels

- Completely Water Soluble at Ambient Temperatures

- Low Foam Tendency, Rapid Foam Collapse

- Unaffected by Hard Water

Distributor Wanted

Shanghai PingYiao Trading CO., Ltd.

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- Hydrolytic, Oxidative, and Biologically Stable
- Remains Liquid, Leaves no Gummy or Tacky Residues

Typical Physical Properties

Form	liquid
Appearance	Amber Red
Viscosity, 25°C ,cSt	4000-5600
Acidity MEQ/g	3.76-4.07
Weight per Gallon at 20°C	9.299 lbs/gal
Specific Gravity at 20/20°C	1.116
Flash Point, Closed Cup	149°C (300°F)
Flash Point, Open Cup	182°C (360°F)

Table 1 • Concentration Range of Archine Syntrend MWF-3900

Archine Syntrend MWF-3900 Commercial Fluid at 30:1 Dilution	Final Use Concentration of MWF-3900 Needed for Equal Machinability
Heavy-Duty Sulfonated, Chlorinated Soluble Oil	1.5%–2.2%
General Purpose Soluble Oil	0.5–1.0%
Semi-Synthetic Coolant	0.5–1.0%
Heavy-Duty Synthetic Coolant	0.7–1.2%

Applications

Archine Syntrend MWF-3900 has proved to be an excellent metalworking fluid base for both light and heavyduty machining applications. MWF-3900 has performed well in cutting and grinding operations as well as in tapping, gun-drilling, drawing, and forging. An MWF-3900 based formulation can machine as effectively as a heavy-duty soluble oil while providing additional benefits such as low toxicity and longer coolant life. MWF-3900 may be used at reduced concentrations to provide good machinability in less severe metalworking operations.

Corrosion Protection

Archine Syntrend MWF-3900 contains an amine functionality that contributes to the rust protection of cast iron and steel. However, we recommend that MWF-3900 be combined with a nonnitrite corrosion inhibitor to develop maximum protection.

Biological Resistance

Archine Syntrend MWF-3900 has a high degree of resistance to bacterial attack and has not

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shown any unusual problems when used in large recirculating systems. With a bactericide added, fluids containing MWF-3900 have remained usable and trouble-free for long periods of time. The bactericide protects against spoilage from contaminants picked up during use.

Environmental Acceptability

Archine Syntrend MWF-3900 is not expected to contain added oils, nitrites, phosphates, phenolic compounds, borates, or other materials considered unacceptable to the environment. However, since MWF-3900 contains amine functionalities, nitrites should not be used.

Suggested Starting Formulations – Cutting Fluid

Archine Syntrend MWF-2900	20-30%
Nonnitrite Corrosion Inhibitor	15-20%
Triethanolamine	5-10%
Biocide	As recommended by manufacturer
Water	Balance

Dilute 10:1 – 50:1 depending on the severity of the operation

Suggested Starting Formulations – Grinding Fluid

Archine Syntrend MWF-2900	10-15%
Nonnitrite Corrosion Inhibitor	10-15%
Triethanolamine	5-10%
Biocide	As recommended by manufacturer
Water	Balance

Dilute 10:1 – 50:1 depending on the severity of the operation

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