

Additives for Metalworking Fluids

Ivanhoe Industries offers a wide variety of additives for use in metalworking fluids. These products enhance the performance in a wide variety of applications. As a stocking distributor, Ivanhoe can supply mixed shipments of products to the formulator, providing convenient inventory management and saving on freight. We offer rapid response, flexibility and competitive pricing so that our customers can be successful in the market. Founded in 1983, Ivanhoe Industries is a full-service distributor of domestic and imported intermediate chemicals serving the lubricant and grease markets. The company's headquarters and main warehouse is in Tullytown PA, near to Philadelphia. Selected products are stocked at outside warehouse around the US.

Corrosion Inhibitors - Triazoles are the workhorse corrosion inhibitors for non-ferrous metals including copper and its alloys and aluminum. Ivanhoe offers a full line of triazoles in a variety of physical forms. IvanGuard® T (Tolyltriazole) is available in both granular and powder while IvanGuard® T-50 is a 50% aqueous solution of the sodium salt of tolyltriazole. IvanGuard® B (Benzotriazole) grades include fine granular, columns and needles.

Amine carboxylates have been used for many years to prevent corrosion of ferrous metals. The monoacid (2-ethyl)hexanoic acid is a low-cost acid in widespread use. Diacids are most commonly used corrosion inhibitors in the market. Ivanhoe offers sebacic acid (C₁₀) and two formulated blends from Emery Oleochemicals, Emerox® 1175 and Emerox® 1185. Both Emerox® grades are designed with enhanced levels of undecanedioic acid for superior cost-performance.

<u>Diacid</u> (Wt%)	<u>Azelaic Acid</u> <u>Emerox 1112</u>	<u>Azelaic Acid</u> <u>Emerox 1175</u>	<u>Azelaic Acid</u> <u>Emerox 1185</u>	<u>Sebacic Acid</u>	<u>Corfree® M1</u>
0.05	<u>Rust</u>	<u>Rust</u>	<u>Rust</u>	<u>Rust</u>	<u>Rust</u>
0.1	<u>Rust</u>	<u>Rust</u>	<u>Rust</u>	<u>Rust</u>	<u>Rust</u>
0.2	<u>Rust</u>	<u>Rust</u>	<u>Pass</u>	<u>Rust</u>	<u>Pass</u>
0.3	<u>Rust</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>
0.4	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>
0.5	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>
0.7	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>
1.0	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>
1.5	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>	<u>Pass</u>

Testing according to ASTM D4627 Diacids present as mixed DEA/TEA salts...



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Polymer Additives -Ivanhoe offers a wide variety of polymer additives from Functional Products (Macedonia OH). The line includes tackifiers, shear-stable viscosity modifiers and specialty additive packages for hydraulic fluids, gear oils and greases. Functional Products offers specialty additives formulated for use in biobased and food-grade lubricants. A number of these products find use in metalworking fluids as anti-mist agents.

MW-612 is designed for use as an anti-mist agent in soluble oils, semi-synthetics and full synthetics. V-162, V-176, V-188 and V-189A are recommended for use in straight oils. The variety of polymers available from functional products ensures that the formulator can find a product with good compatibility with whatever base oil type is used. V-801 is a unique 100% water-based oil-free polymer dispersion that can be used in full synthetics and other applications where the presence of mineral oils is to be avoided.

EVO-530 is used as an emulsifier system for bio-based MWF emulsions.

Two way-oil packages are WA-24 and WA-68. WA-24 is formulated for use in Group I basestocks. It offers excellent demulsibility and has Cincinnati Milacron test approval. WA-68 is used in Group II and Group II+ oils. It has light color and is low odor. Formulations based on WA-68 pass Cincinnati Milacron and LS-2 tests.

Defoamers - Ivanhoe has partnered with DS Additives to introduce the Quick Break line of defoamers to the lubricants industry. The product line includes modified silicones along with both precipitated silica and precipitated wax-based particle type defoamers. These products are characterized by high activity and excellent alkaline stability. They can be used either in the base formulation or as tank-side additives in all types of water-based fluids. They also have the alkaline stability to be used in cleaners.

With full technical support, the DS team can recommend which product best to fits the customer application or can custom develop a solution as needed.

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