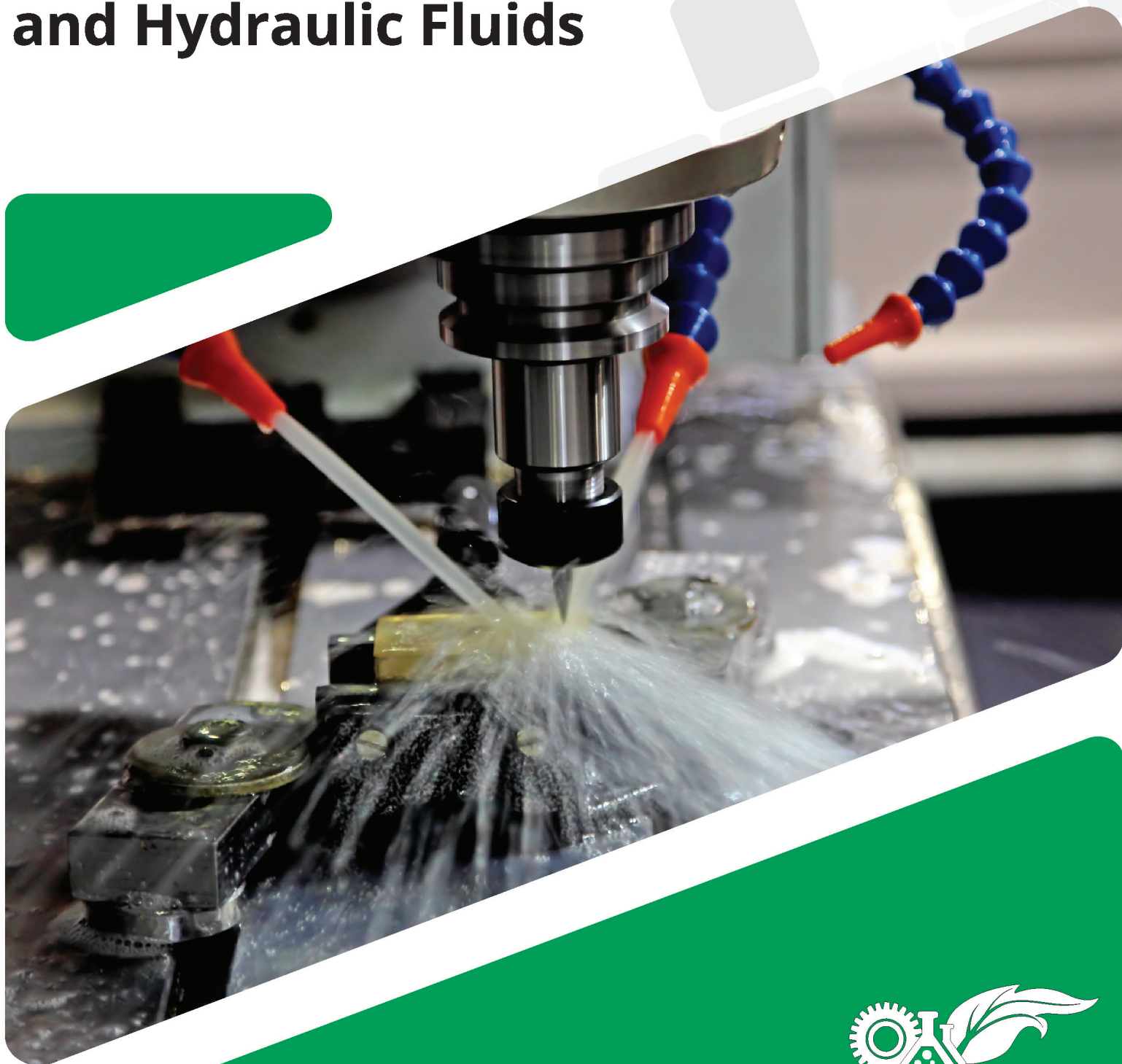


VpCI® Additives for Metalworking and Hydraulic Fluids



Simple. Clean. Efficient.

Cortec® offers a variety of additives for use with oil, water-based, and synthetic metalworking and hydraulic fluids. These additives protect metal pieces from flash corrosion during the metalworking process, while also providing protection to the cutting and machining equipment. Other additives can be used for preserving important hydraulic equipment during shipping or storage.

A unique advantage of many Cortec® additives is their vapor phase corrosion protection for metals in void spaces above the lubricant. When introduced to a void space, VpCI® molecules in these additives vaporize and diffuse throughout the enclosure and adsorb on metal surfaces. This thin molecular hydrophobic layer protects the metal against corrosive elements such as oxygen, moisture, and chlorides.

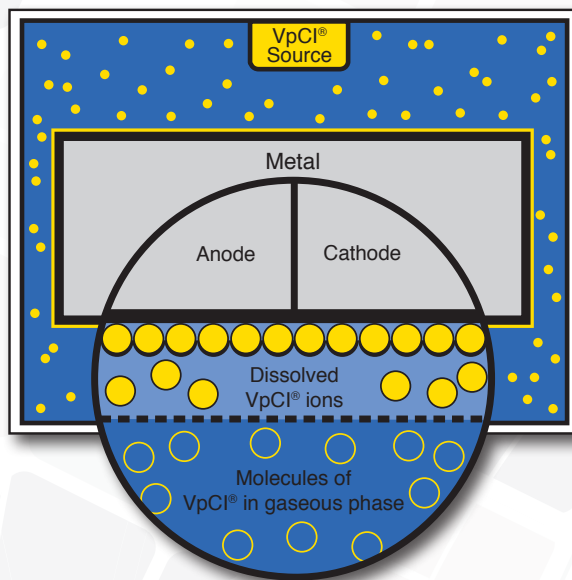
Incorporating corrosion inhibitors directly into metalworking and hydraulic fluids enhances corrosion protection and streamlines the process to avoid significant economic losses from corrosion damage.



Features:

- Low dilution for metalworking fluids
- Protection of cutting and metalworking equipment
- Long lasting, multi-metal protection
- WIP protection
- Compatible with most biocides
- Protection available in contact phase, vapor phase, and interphase
- Excellent for subsea hydraulic systems and hydraulic equipment layup

VpCI® additives form a thin molecular corrosion inhibiting layer that adsorbs on the surface of the metal, protecting against water, chlorides, or other corrosive contaminants in the environment. These additives provide multi-metal protection for many different metalworking and hydraulic fluids.



Selection Guide for Metalworking and Hydraulic Fluid Additives

M-95: Versatile water soluble additive for various multi-metal systems requiring vapor phase and contact protection. Causes little to no foam. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-235: Prevents corrosion of yellow metals. Can be added to functional fluids such as hydraulic fluids, specialty lubricants, automotive coolants, and metalworking fluids. Package: 5 pound (2.3 kg) pails, 50 pound (23 kg) and 100 pound (45 kg) fiber drums.

M-236: Liquid corrosion inhibitor especially designed for oils and solvent-based products in contact with yellow metals. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-241: Corrosion inhibitor for aluminum. Add to metalworking fluids and water-based coolants. Package:

5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-250: Anti-corrosion additive with emulsification properties for soluble oils. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-251: Adds multi-metal contact and vapor phase corrosion protection to synthetic cutting fluids and water-based hydraulic fluids. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-320: Provides vapor and contact protection to oil systems such as gearboxes. Recommended during layup. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-370: Multi-metal corrosion preventive additive for water-based metalworking fluids. Prevents flash

corrosion on metal surfaces and forms a hydrophobic film that is virtually undetectable when dry. Also available in A (aluminum), NS (non-surfactant), HS (high surfactant), and C (additional protection for cast parts and rough surfaces) versions. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-528: Additive to hydraulic fluids for corrosion protection in subsea systems. Also for synthetic coolants and cutting fluids. M-528 L includes lubricant. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

M-415: Strong vapor phase corrosion inhibitor additive for oils and fluids. Contains FDA and USDA approved ingredients. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

Product	METALS PROTECTED							ATTRIBUTES					
	Carbon Steel	Stainless	Galvanized	Aluminum	Brass	Copper	Bronze	Physical State	Transport Mechanism	Solubility	Degree of Protection	Typical Applications	Typical Dosages
M-95	x	x	x	x	x	x	x	Liquid	Vapor Phase & Contact	Water & Glycols	Flash & Long Term	Metalworking	0.25-2.5% by weight
M-235					x	x	x	Powder	Vapor Phase	Water & Glycols	Flash & Long Term	Metalworking	0.5-1.5% by weight
M-236					x	x	x	Liquid	Vapor Phase & Contact	Oil / Solvent	Flash & Long Term	Metalworking	0.25-10% by weight
M-241	x			x				Powder	Contact	Water	Flash	Metalworking	0.5-1.5% by weight
M-250	x	x	x	x	x	x	x	Liquid	Contact	Soluble Oils	Flash	Metalworking	0.5-1% by volume
M-251	x	x	x	x	x	x	x	Liquid	Vapor Phase & Contact	Synthetic Fluids	Flash	Metalworking	0.5-1% by volume
M-320	x	x	x	x	x	x	x	Liquid	Vapor Phase & Contact	Oil / Solvent	Flash & Long Term	Metalworking	1-5% by weight
M-370	x	x	x	x	x	x	x	Liquid	Contact	Water & Glycols	Flash & Long Term	Metalworking	0.1-0.5% by volume
M-528	x	x	x	x	x	x	x	Liquid	Vapor Phase & Contact	Water / PAG	Flash & Long Term	Hydraulic Fluids	1-5% by weight
M-415	x	x	x					Liquid	Vapor Phase & Contact	Oil / Solvent	Flash & Long Term	Metalworking	0.5-4% by weight

Cortec® Corporation



Quality Management System (ISO 9001 Certified)

World Class Product Offerings

An innovative producer of leading edge products.

World Class Customer Service

A positive, long-lasting impression through every link of our company.

World Class Environmental Commitment

Cortec® commits to continued development of processes and products that are useful, non-hazardous to the environment, and recyclable whenever possible.

An Ethical and Respectful Company Culture

Respect and treat our colleagues, customers, and vendors as we would our own family members.



Environmental Management System (ISO 14001 Certified)

Cortec's strong environmental concern is demonstrated in the design and manufacturing of products that protect materials of all kinds from environmental degradation. A strong commitment to produce recyclable products made from sustainable resources has been and will be our future policy. This brochure can be recycled.



Laboratory Accreditation (ISO/IEC 17025)

Cortec® Laboratories, Inc. is the only lab in our industry that has received ISO/IEC 17025 Certification, which ensures quality in recording and reporting data, as well as calibrating equipment within the laboratory.



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