

# VpCI® Additives for Lubricants and Greases



## Simple. Clean. Efficient.

Cortec's full line of additives offers versatile corrosion inhibitor packages for both solvent- and oil-based lube and grease systems. A common misconception is that oil-based products are naturally strong rust preventatives. While oil itself can help displace moisture, a good corrosion inhibiting additive can significantly increase protection of lube and grease systems.

Cortec's VpCI® additives are especially important when shipment or storage is required for equipment that contains lubricated parts. Corrosion protection can be added to lubricating sleeves, bearings, gear boxes, and any other area that needs lubrication. It is also useful for corrosion protection in functional fluids such as drilling muds, coolants, or transformer oil.

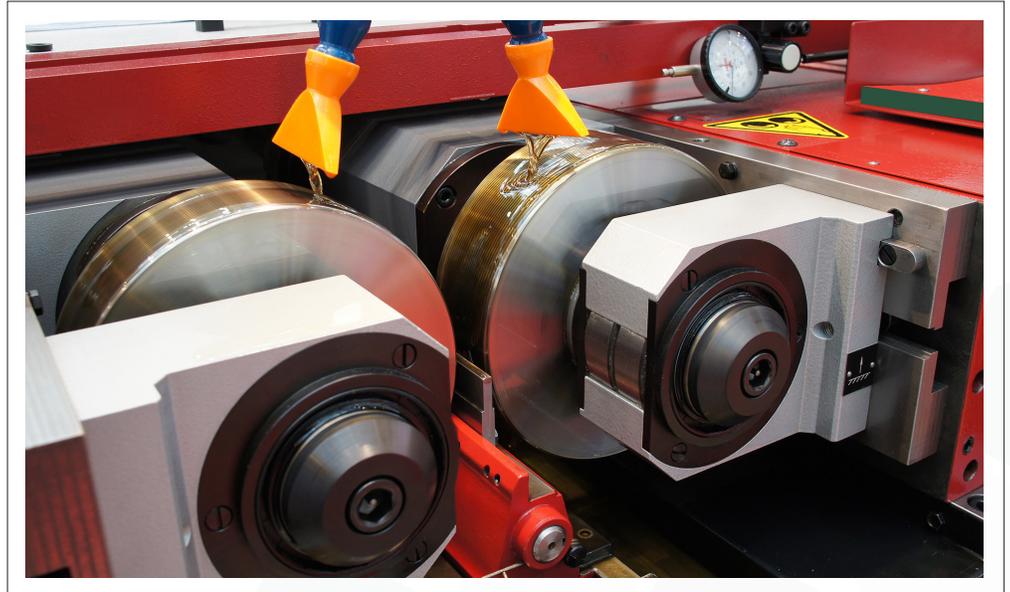
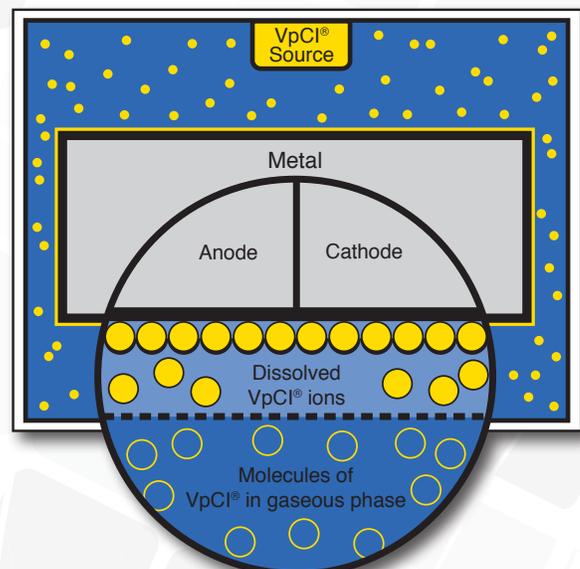
Many of these additives offer vapor phase protection for metals in the void space above the lubricant. When introduced to these areas, VpCI® molecules in the additives vaporize and diffuse throughout the enclosure and adsorb on metal surfaces. This thin molecular, hydrophobic layer protects the metal against corrosive elements such as oxygen, moisture, and chlorides.

Cortec® additives include many environmentally friendly biodegradable options that protect at low doses. Unlike corrosion inhibiting systems of the past, many Cortec® additives do not contain chromates or other heavy metals, nitrites, or chlorinated hydrocarbons.

## Benefits of VpCI® Lubricant and Grease Additives:

- Low dilution for metalworking fluids
- Long lasting, multi-metal protection
- WIP protection
- Protection available in contact phase, vapor phase, and interphase
- Environmentally friendly biodegradable options

VpCI® additives form a thin molecular corrosion inhibiting layer that adsorbs on the surface of the metal, displacing existing water, chlorides, or other corrosive contaminants on the surface. These additives provide multi-metal protection for many different cleaners and cleaning applications such as surface prep, food can sterilization, and manufacturing.



# Selection Guide for Lubricant and Grease Additives

**M-168:** Solvent-based additive especially effective for preventing salt corrosion attacks. Package: 5 gallon (19 liter) containers, 55 gallon (208 liter) metal drums, liquid totes, and bulk.

**M-236:** For corrosion protection of yellow metals in contact with oil-based systems, such as transformer oil. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

**M-238:** Effective vapor and contact corrosion inhibitor for a variety of oil- and solvent-based systems. 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-369:** Additive for greases, waxes, or heavy oils that provides a superior level of corrosion protection. Package: 5 gallon (19 liter) and 55 gallon (208 liter) drums.

**M-408:** Provides corrosion protection to brake fluid in vehicles such as DOT 3 or 4. Especially effective in silicon based fluids like DOT 5. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, 275 gallon (1041 liter) tote.

**M-529:** Patented oil-based contact corrosion inhibitor package for lubricating oils. M-529 L contains EP lubricity package. Available in super-concentrate (M-529 SC) form. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

**M-530:** Mineral oil based inhibitor for intermittent operating systems offering both contact and vapor phase corrosion protection. Small

particle size passes through 1 micron filter. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

**M-531:** PAO based oil additive that has a minimal effect on properties like water separability, thermal stability, and filters to 1 micron. Offers contact and vapor phase corrosion protection. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

**M-531 T:** An ash free oil corrosion-inhibiting additive designed for turbine applications. Package: 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

**M-533 FG:** Oil additive corrosion inhibitor which is NSF HX-1 certified for use in plants with incidental food contact. 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-168   | X                | X         | X          | X        | X     | X      | X      | Liquid         | Contact               | Solvent       | Flash & Long Term    | Lubricants/Greases   | 2-20% by weight    |
| M-236   |                  |           |            |          | x     | x      | x      | Liquid         | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term    | Lubricants/Greases   | 0.25-10% by weight |
| M-238   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term    | Lubricants/Greases   | 1-4% by weight     |
| M-320   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term    | Lubricants/Greases   | 1-5% by weight     |
| M-369   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Contact               | Oil / Solvent | Flash & Long Term    | Lubricants/Greases   | 1-5% by weight     |
| M-408   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term    | Lubricants           | 1-1.5% by weight   |
| M-529   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Contact               | Oil / Solvent | Flash & Long Term    | Lubricants           | 2-5% by weight     |
| M-530   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term    | Lubricants           | 2-5% by weight     |
| M-531   | x                | x         | x          | x        | x     | x      | x      | Liquid         | Vapor Phase & Contact | Oil / Solvent | Flash & Long Term    | Lubricants           | 2-5% by weight     |
| M-531T  | x                | x         | x          | x        |       |        |        | Liquid         | Contact               | Oil / Solvent | Flash & Long Term    | Lubricants           | 0.05-2% by weight  |
| M-533FG | x                | x         | x          | x        |       |        |        | Liquid         | Contact               | Oil / Solvent | Flash & Long Term    | Lubricants           | 0.1-10% 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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4119 White Bear Parkway, St. Paul, MN 55110 USA  
Phone (651) 429-1100, Fax (651) 429-1122  
Toll Free (800) 4-CORTEC, E-mail [productinfo@cortecvci.com](mailto:productinfo@cortecvci.com)  
[www.CortecVCI.com](http://www.CortecVCI.com)  
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