VpCI®-345

PRODUCT DESCRIPTION

VpCI®-345 is a premium water-based metalworking lubricant concentrate for difficult-to-produce metal stampings, tubular products, and machined parts. VpCI®-345 is superior to petroleum-based coolant rust preventives. When used as directed, VpCI®-345 prevents corrosion during in-plant processing, storage, and export shipment up to 24 months. VpCI®-345 is ideally suited for light-duty machined and polished parts requiring long-term corrosion and surface protection.

VpCI®-345 can be effectively used as a coolant in machining applications where maximum cooling is employed. High-performance characteristics of VpCI®-345 make it ideally suited for light-duty cutting, milling, turning, drilling, boring, broaching, gear cutting, and other machining operations. VpCI®-345 can replace neat oils and semi-synthetics when there is a requirement for maximum coating and superior rust inhibiting stability. VpCI®-345 is resistant to rancid attack by bacteria. Product life is the same or longer than similar machining fluids.

TYPICAL APPLICATIONS

- In-plant machining
- Protection of hot-rolled, cold-rolled, galvanized, and aluminized steel
- Coolant for machining of castings, highly polished pieces, and other parts; providing superior protection between machining operations and further processing or assembly

METAL PROTECTED

- Carbon steel
- Stainless steel
- Aluminum
- Galvanized steel
- Zinc
- Cast iron

FEATURES

- Unique Vapor phase Corrosion Inhibitor action protects uncoated and difficult-to-reach areas in castings and stampings
- Excellent wetting
- Economical - VpCI®-345 can be diluted with up to 40 parts water
- Protects ferrous and non-ferrous metals
- Easy to remove from metal surfaces with alkaline cleaners (VpCI®-410 series)
- Does not contain flammable solvents, reducing fire hazards
- Contains no chlorinated compounds, chromates, or nitrites
- Eliminates cleaning and housekeeping problems associated with rust inhibiting oils
- Gives protection to parts after completion of metalworking operations, thus eliminating the need for further applications of rust preventives
- Rancid stability and resistance to bacterial attack
- Passes ASTM D 4627-86 (Test Method for Iron Chip Corrosion for Water-soluble Metalworking Fluids) at 2.5% by weight
- Weldable

METHOD OF APPLICATION

Short-term protection/Light-duty machining (up to 2 months): 1 part concentrate to 20-40 parts water

Medium-term protection/Medium-duty machining (2 to 6 months): 1 part concentrate to 10-20 parts water

Long-term protection/Heavy-duty machining (6 to 24 months): 1 part concentrate to 4-10 parts water
TYPICAL PROPERTIES

Appearance  Clear yellow to amber liquid
Film Type    Dry
Non-volatile Content 30-35%
pH           8.5-9.2 (Neat)
Density      8.8-9.0 lb/gal (1.05-1.08 kg/l)
Removal Methods Alkaline cleaners (VpCI-410 series)

PACKAGING AND STORAGE

VpCI®-345 is available in 5 gallon (19 liter) plastic pails, 5 gallon (208 liter) metal drums, liquid totes, and bulk. This product should be sealed and stored in a heated warehouse to avoid freezing. VpCI®-345 has a shelf life of 24 months.

Brix Reading Correlation (VpCI-345)

\[
\text{Brix Reading} = 0.45 \times (\text{Volume} \% ) + 0.05 \\
R^2 = 1.00
\]

\[
\begin{array}{c|c}
\text{Concentration of Solution} [\text{Volume} \% ] & \text{Brix Reading} \\
\hline
0 & 0.0 \\
5 & 0.5 \\
10 & 1.0 \\
15 & 1.5 \\
20 & 2.0 \\
25 & 2.5 \\
30 & 3.0 \\
\end{array}
\]

pH Calibration (VpCI-345)

\[
\text{pH Reading Correlation} \\
\text{Log. (pH Reading Correlation)}
\]

\[
\begin{array}{c|c}
\text{Concentration of Solution} [\text{Volume} \% ] & \text{pH} \\
\hline
0 & 8.0 \\
5 & 8.0 \\
10 & 8.5 \\
15 & 8.8 \\
20 & 9.0 \\
25 & 9.0 \\
30 & 9.0 \\
\end{array}
\]

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Distributed by:

Cortec® Corporation

4119 White Bear Parkway, St. Paul, MN 55110 USA
Phone (651) 429-1100, Fax (651) 429-1122
Toll Free (800) 4-CORTEC, E-mail info@cortecvci.com
http://www.cortecvci.com

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