VpCl®-440

DESCRIPTION
VpCl-440 is a water-based surface pretreatment for steel, iron, aluminum, brass, copper, and other metals. VpCl-440 can replace phosphatizing and chromating systems.

VpCl-440 helps coatings adhere better to surfaces that are too hard to adhere to; such as increasing the adhesion of a powder coating to aluminum.

FEATURES
• Non-Toxic, Non-Hazardous
• Multi-metal functionality
• Up to 20% improvement of adhesion to hard to adhere to metals
• Inhibits flash rusting on steel, iron, aluminum, brass, copper, and other metals
• Economical
• Self-preserving
• Prevents bacteria growth

EFFECTIVE USES
• Adhesion promoter for coatings
• Used as an effective pretreatment for rinse tanks to improve protection in dry storage.

APPLICATION
VpCl-440 can be scrubbed on (see Method 1) or applied with any conventional equipment including sprayers, dipping tanks (see Method 2), steam cleaners, or power washers.

Method 1-for primary use on airplanes
Step 1: Apply liberally to the substrate and scrub on with 180-240 grit aluminum oxide pad.
Dry for 2 minutes.
Step 2: Repeat step 1
Step 3: Rinse off substrate with water and allow to dry.

Method 2-for primary use in dip tanks
Dip the parts for 5 minutes in a tank of diluted VpCl-440 and allow to dry. Once parts are dry to the touch, usually within 5-10 minutes, the parts can be handled and painted.

PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear to hazy liquid</td>
</tr>
<tr>
<td>pH</td>
<td>10-11</td>
</tr>
<tr>
<td>Density</td>
<td>8.0-8.5 lb/gal (0.96-1.02 kg/l)</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>50-212°F (10-100°C)</td>
</tr>
<tr>
<td>Dilution</td>
<td></td>
</tr>
<tr>
<td>adhesion promotion</td>
<td>0.1-0.25% in water</td>
</tr>
<tr>
<td>stand alone protection</td>
<td>1-10% in water</td>
</tr>
<tr>
<td>Dry To Touch</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Dry to Handle</td>
<td>10 minutes</td>
</tr>
</tbody>
</table>

Stand alone use on carbon steel

<table>
<thead>
<tr>
<th>Dilution</th>
<th>Humidity (ASTM D 1739)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-10 %</td>
<td>500 hours</td>
</tr>
</tbody>
</table>

PACKAGING
VpCl-440 is available in 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.
**Adhesion Promotion Table**

**0.1 - 0.25% Dilution**

Determination of the concentration of VpCI-440 using K 9065 test kit

![Graph showing concentration of VpCI-440]({image1})

*Note: Before testing solutions were diluted 1:9 with water

**Stand alone Protection Table**

**1 - 10% Dilution**

Determination of the concentration of VpCI 440 using K 9065 test Kit*

![Graph showing concentration of VpCI-440]({image2})

* Before testing solutions were diluted 1 : 9 with water.

**FOR INDUSTRIAL USE ONLY**

**KEEP OUT OF REACH OF CHILDREN**

**KEEP CONTAINER TIGHTLY CLOSED**

**NOT FOR INTERNAL CONSUMPTION**

**CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION**

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*Test method and Test Kit information available upon request.*