Remember how cool it felt to build the perfect airplane?

Henkel still does.

For over 50 years, you have depended on the trusted brands of Hysol®, Turco®, Frekote® and Alodine®. Henkel has extended that trust and added the value of unparalleled global technical support, customer service, and product innovation.

Discover the new standard in aerospace.  www.aerospace.henkel.com

Henkel Racing

Henkel’s logo is highly visible on Formula One and NASCAR racing cars to demonstrate the company’s commitment to racing and innovative product development. If you want to win, you need the best car with the best engineering expertise. Henkel brings a wealth of experience and technologies to support the drive for victory.

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The aerospace group of Henkel develops structural adhesives and metal and composite surfacing treatments that serve the aircraft OEM and MRO industries. Henkel invests heavily in R&D and product support and is a leader in these industries. Innovative materials provide our customers with practical, economic and performance benefits.

Our key product brands are:

- Hysol® Structural Adhesives
- Frekote® Mold Release Systems

**OUR ADHESIVE SYSTEMS INCLUDE:**

- Paste Adhesives and Specialty Resins
  - Hysol® one- and two-part epoxy paste adhesive systems for potting, bonding, fairing, and repair; moldable plastic shim; matrix resins; specialty resins for resin transfer molding, wet lay-up, and repair. Our current developmental products include VARTM, RTM and RFI materials based upon Henkel’s new Eponol chemistry. This new chemistry, based upon benoxazole chemistry, is room temperature stable and has high Tg, even under wet conditioning.

- Film Adhesives and Primers
  - Hysol® and Plastilock® film adhesives and corrosion-inhibiting low VOC primers for metal and composite bonding; engine nacelle bonding; honeycomb applications such as control surfaces, wing flaps, engine slats, leading edges, and wing-to-body fairings. Nitrogen phenolic systems provide excellent chemical and fuel resistance. Henkel acquired the Plastilock® line of aerospace adhesives from Sovereign Specialty Chemicals, Inc. in 2004. This acquisition included adhesives, surfacing firms, core splices and nitrite phenolics.

- Core Splice Adhesives
  - Extensive product selection of foaming core splice adhesives; controlled expansion; excellent slump resistance; dual cure capabilities; low exotherm properties; closed cell technology; extrudable versions available.

- Syntactic Products
  - SynSpand® closed-cell expanding syntactic films for custom density-to-strength ratios in honeycomb core fill and core splice, resulting in lower costs of co-cure applications by eliminating secondary manufacturing processes.
  - SynCore® syntactic films for lightweight composite designs. Ideal for edge close-out and composite sandwich structure. Available in shaped form for custom designs.
  - SynSkin® composite surfacing films for flawless off-tool composite surface and reduction of surface preparation steps prior to painting. Available with metallic screens/foils for composite lightning strike protection.

- Mold Release Coatings
  - Frekote® semi-permanent release coatings, the standard in mold release agents for composite and metal tool surfaces. Dependable release, ease of application, high gloss finish, minimal mold build-up, and maximum releases per application. Our newest Frekote® product is water-based and low VOC.

**OUR SURFACE TREATMENT SYSTEMS INCLUDE:**

- Process Line Cleaners
  - Wide array of neutral, alkaline or acid process line cleaners to fit the demanding requirements of the aerospace industry. Designed for either multi-metal or specific substrates to meet requirements of OEM customers. May be used in immersion, spray or brush applications. Extensive line of exterior aircraft cleaners meeting comprehensive OEM and military specifications.

- Etchants and Deoxidizers
  - Latest technology in etchants and deoxidizers used prior to conversion coating, anodizing or chemical milling. OEM approvals are key to the selection of appropriate process line chemistries. All Henkel products are OEM specified.

- Conversion Coatings
  - Alodine® conversion coatings for light metals, such as aluminum, magnesium and titanium. Henkel is the industry leader in conversion coating technologies, with traditional industry standard products, such as Alodine® 1200S®, as well as alternative non-chrome solutions, such as Alodine® 5700™ or Alodine® T-5900™.

- Engine Chemistries
  - Henkel produces all process chemistries for the overhaul of aircraft engines and land based compressors. Simplified processes meet OEM standard practices. Process solutions for both hot and cold sections. Designed to remove the toughest soils and scales, and provide for efficient NDT evaluation. New “GL” (global) product line offers Henkel products and quality around the world.

- Accessory Shops, Removed Components, Flap and Wheel Well Cleaners
  - Engineered solutions for the industry’s most demanding requirements include paint strippers, scale removers, dinol remover, wax removers and general application cleaners. Extensive line of products for cleaning aircraft components and accessory parts, flaps, wheel wells, and wheel and brake assemblies.

- Paint Strippers, Maskants, Machine and Grinding Coolants
  - Extensive line of environmentally advantaged paint strippers for use in depaint of aircraft and aircraft parts. NESHA compliant thiotropic strippers are designed to cling to vertical surfaces and improve paint removal efficiency. Dual phase immersion paint strippers utilize a thin seal layer to prevent evaporation and reduce consumption of key stripping components.

- Multan® biostable cutting and grinding fluids for metalworking are designed for substrates ranging from aluminum to exotic steel and titanium alloys. No tank side additions of biocide or EP additives are necessary. Multan® products improve tool life and provide additional operational savings over competitor products.
AEROSPACE
Structural Adhesives and Surface Treatments

OUR SURFACE TREATMENT SYSTEMS INCLUDE COMPLETE PROCESS SOLUTIONS:

**Paint Stripper/Repaint Systems**
- Cleaners
  - Turco® 5948-DPM™
  - Turco® 6849™
- Conversion Coatings
  - Alodine® 600
  - Alodine® 600 RTU™
  - Alodine® 1000 RTU™
  - Alodine® 1200S™
  - Alodine® 1201™
  - Alodine® 1500™
  - Alodine® 1600™
  - Alodine® 5200™
  - Alodine® 5700™
  - Touch-N-Prep® Alodine® 1132™
  - Brush Alodine® 120™ Kit

**Jet Engine Overhaul Processes**
- Bearing Cleaning Process
  - Turco® Aquasorb
  - Turco® 4181-L™ (Liquid Arr)
- Compressor Washes
  - Turco® 5884™
  - Turco® 6782™ Series
- Thrust Reverser Cleaner
  - Turco® 5805™
  - Turco® 5948-DPM™ Thick
- General Purpose Cleaning
  - Turco® Rust Bloc
  - Turco® Rust Bloc
- Alkaline Process
  - Turco® 4338-L™
  - Turco® 4409 GL™
  - Turco® 5948-DPM™
  - Turco® 4181-L™ (Liquid Arr)
  - Turco® Scale Gon 7™
- Alumiprep® 33™
- Turco® 4181-L™ (Liquid Arr)

**Metal Processing Lines**
- Cleaners
  - Alodine® 298™
  - Alodine® 4355™
  - Turco® 4215 NC LT™
  - Turco® 5978-L™
  - Turco® 6751-L™
  - Turco® 6849™
  - Turco® 4181-L™ (Liquid Arr)
  - Turco® Liquid Sprayeze NP-LT™
- Etchants / Brighteners
  - Alumiprep® 33™
  - Nova EC-202 L
  - Turco® Metal Glo #6

**Chemical Milling Processes**
- Cleaner
  - Turco® 4215 NC-LT™
- Deoxidizers
  - Turco® Aideco® Y
  - Deoxalume® 2310™
  - Deoxidizer 6/16
  - Turco® Liquid Smut-Go® NC
  - Turco® Nitraid® (T-4104)
- Maskants
  - Turco® Form Maskant 6914G™/6915™

**Aircraft Appearance and Part Cleaning**
- Interior Cleaners
  - Turco® 5948-DPM™
  - Turco® Air Tec 23™
  - Wheel and Brake Cleaners
  - Turco® Liquid Sprayeze NP-LT™
  - Turco® Rust Block
  - Turco® 5668™
  - Exhaust Track Remover
  - Turco® 5805™

**Use our Interactive Selector Guide at**
www.aerospace.henkel.com

Finding the right product is easier than ever! Simply select parameters and then Search. A detailed product list pops up, with links to technical data.

Use our Interactive Selector Guide to help you choose the product that best suits your needs.

**View Material Safety Data Sheets** by product code number. Product code numbers are represented by two alphabetical characters followed by seven digits, of which the last three are zero. The last three digits represent a size code that is not necessary for Material Safety Data Sheet selection. A link to Material Safety Data Sheets is also available from the sub-menu product categories.

**Pastes & Specialty Resins**
One- and two-part Hyosil epoxy paste adhesive systems for potting, bonding, fairing, and repair; moldable plastic shim; matrix resin; specialty resins for resin transfer molding, wet lay-up, and repair. Henkel offers several custom packaging options.

**Film Adhesives & Primers**
Hyosil® and Plastilock® film adhesives and corrosion-inhibiting low VOC primers for metal and composite bonding; engine nacelle bonding; honeycomb applications such as control surfaces, wing flaps, engine slats, leading edges, and wing-to-body fairings.

**Syntactic & Specialty Products**

Technical and material safety data sheets are available at www.aerospace.henkel.com

The all-inclusive Site Search feature enhances browsing with a single mouse click.
## STRUCTURAL ADHESIVES

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### Product Applications

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<th>Mechanical Properties</th>
<th>Bulk Properties</th>
<th>Handling</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysol® EA 934NA™</td>
<td>* * *</td>
<td>High</td>
<td>5400/114</td>
<td>1 hour</td>
<td>250°F/121°C</td>
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<tr>
<td>Hysol® EA 935.3™</td>
<td>* * * * *</td>
<td>Low</td>
<td>4500/100</td>
<td>4 hours</td>
<td>200°F/93°C</td>
</tr>
<tr>
<td>Hysol® EA 9348.5™</td>
<td>* * * * *</td>
<td>Low</td>
<td>3000/100</td>
<td>24 hours</td>
<td>370°F/193°C</td>
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<tr>
<td>Hysol® EA 9359.3™</td>
<td>* * * * *</td>
<td>Low</td>
<td>2000/100</td>
<td>2 hours</td>
<td>200°F/93°C</td>
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<tr>
<td>Hysol® EA 9360™</td>
<td>* * * *</td>
<td>Moderate</td>
<td>180/82</td>
<td>1 hour</td>
<td>40°F/4°C</td>
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<tr>
<td>Hysol® EA 9391™</td>
<td>* * * *</td>
<td>Low</td>
<td>120/49</td>
<td>1 hour</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9393™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9380™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9390™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9392™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9330.3™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
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<tr>
<td>Hysol® EA 9320NA™</td>
<td>* * * * *</td>
<td>Moderate</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9313™</td>
<td>* * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9300™</td>
<td>* * * * *</td>
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<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
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<tr>
<td>Hysol® EA 9330.3™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9330™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9348.5™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
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<tr>
<td>Hysol® EA 9359.3™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9360™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9391™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
</tr>
<tr>
<td>Hysol® EA 9393™</td>
<td>* * * * *</td>
<td>Low</td>
<td>120/49</td>
<td>2 hours</td>
<td>40°F/4°C</td>
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</tbody>
</table>
### Bulk Properties Description

PASTE ADHESIVES AND FRENKOTE® MOLD RELEASE PRODUCTS

SPECIALTY RESINS

<table>
<thead>
<tr>
<th>Product</th>
<th>Applications</th>
<th>Characteristics</th>
<th>Mechanical Properties</th>
<th>Bulk Properties</th>
<th>Handling</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysol® EA 9396™</td>
<td>• • • • • •</td>
<td>350/177</td>
<td>Thixotropic</td>
<td>2 Moderate</td>
<td>25/ 3300/ 3500/ 3200/ 350/177 Low Viscosity</td>
<td>6675/ 46.0 615/ 4200 1.7 10000/ 118.8</td>
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<tr>
<td>Hysol® EA 9395™</td>
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<td>350/177</td>
<td>Thixotropic</td>
<td>2 Low</td>
<td>15/ 2300/ 4000/ 2400/ 240</td>
<td>—</td>
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<tr>
<td>Hysol® EA 9394™ /C-2™</td>
<td>•</td>
<td>450/232</td>
<td>Moderate</td>
<td>Viscosity</td>
<td>2 Low</td>
<td>15/ 19.3 27.6 16.8</td>
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<tr>
<td>Hysol® EA 9394.2™</td>
<td>• • • • • •</td>
<td>225/107</td>
<td>Thixotropic</td>
<td>2 Nil —</td>
<td>— — —</td>
<td>— —</td>
</tr>
<tr>
<td>Hysol® EA 9394™</td>
<td>• • • • • • •</td>
<td>350/177</td>
<td>Thixotropic</td>
<td>2 Low</td>
<td>20/ 3300/ 4200/ 2900/ 350/177</td>
<td>—</td>
</tr>
</tbody>
</table>

### Frekote® Mold Release Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Application Temperature Range</th>
<th>Cure Time</th>
<th>Benefits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frekote® B-15™ Sealer</td>
<td>Up to 140°F/60°C</td>
<td>24 hours at room temperature</td>
<td>• High peel strength</td>
<td>Formulated as a sealer for molds with microsorb properties, small surface scratches or imperfections. Used in conjunction with other Frekote® products, Frekote® B-15™ provides an excellent base coat enhancing the release advantages of all Frekote® products.</td>
</tr>
<tr>
<td>Frekote® 49-NC™</td>
<td>Up to 140°F/60°C</td>
<td>3 hours at room temperature, or bake for 15 mins at 210°-230°F/ 100°-150°C</td>
<td>• High thermal stability</td>
<td>A proprietary water-based emulsion developed for releasing aerospace and other high performance composite structures. Designed to be applied and cured at ambient shop temperature. Spray application is recommended for best appearance of part after final coat.</td>
</tr>
<tr>
<td>Frekote® 55-NC™</td>
<td>Up to 140°F/60°C</td>
<td>30 mins. at room temperature, or bake for 5 mins at 210°-230°F/ 100°-150°C</td>
<td>• High peel strength</td>
<td>A one-part, low viscosity, unfilled version of Hysol® EA 9394™ . Pumpable, one-component, high peel and high shear strength properties. Density of 37 pcf (0.6 g/cc).</td>
</tr>
<tr>
<td>Frekote® 700-NC™</td>
<td>Up to 275°F/140°C</td>
<td>5-10 mins. after final coat at room temperature</td>
<td>• Superior multiple release</td>
<td>A proprietary water-based emulsion developed for releasing aerospace and other high performance composite structures. Designed to be applied and cured at ambient shop temperature. Spray application is recommended for best appearance of part after final coat.</td>
</tr>
<tr>
<td>Frekote® 770-NC™</td>
<td>Up to 140°F/60°C</td>
<td>5-10 mins. after final coat at room temperature</td>
<td>• Superior multiple release</td>
<td>A proprietary water-based emulsion developed for releasing aerospace and other high performance composite structures. Designed to be applied and cured at ambient shop temperature. Spray application is recommended for best appearance of part after final coat.</td>
</tr>
</tbody>
</table>

### Frekote® 48-NC™

- Non-toxic water-based system
- Apply at room temperature
- Cure at room temperature
- Low VOC
- Non-flammable
- Thermal stability 48°F/25°C

### Frekote® 44-NC™

- Seals mold porosity
- No contaminating transfer
- Compatible with all Frekote® products
- Thermal stability 400°F/220°C

### Frekote® 900-WB™

- Cure for more than 4 hour at ambient temperature after last coat
- Non-toxic water-based system
- Apply at room temperature
- Cure at room temperature
- Low VOC
- Thermally stable up to 450°F/232°C.

### Frekote® B-15™

- Seals mold porosity
- No contaminating transfer
- Compatible with all Frekote® products
- Structural properties to 400°F/204°C.

### Frekote® 44-NC™

- High thermal stability
- Better mold utilization
- No mold build-up
- High productivity
- Significantly lower mold maintenance costs
- No contaminating transfer

### Frekote® 900-WB™

- High thermal stability
- Better mold utilization
- No mold build-up
- High productivity
- Significantly lower mold maintenance costs
- No contaminating transfer

### Frekote® 44-NC™

- A non-CFC release agent designed to provide multiple releases with no contaminating transfer. Can be used for the release of thermoplastics, thermosetting resins, boron, aramid, graphite/carbon fiber composites and fiberglass laminates.

### Frekote® 900-WB™

- A non-CFC release agent designed to provide multiple releases with no contaminating transfer. Can be used for the release of thermoplastics, thermosetting resins, boron, aramid, graphite/carbon fiber composites and fiberglass laminates.

### Frekote® 44-NC™

- High shear strength
- No mold build-up
- High productivity
- No chorinated solvents
- Versatile releases most polymers
- Reduced odor

### Frekote® 44-NC™

- Superior multiple release
- High glass and high slip
- No mold build-up
- Versatile releases most polymers
- Reduced odor
**ADHESIVE SYSTEMS**

**Film Adhesives**

<table>
<thead>
<tr>
<th>FILMS</th>
<th>Applications</th>
<th>Characteristics</th>
<th>Mechanical Properties</th>
<th>Bulk Properties</th>
<th>Handling</th>
<th>Storage Temperature (°F/°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hysol® EA 9602.3™</strong></td>
<td>• •</td>
<td>250/121</td>
<td>30</td>
<td>5700/33.8</td>
<td><strong>3000° F/?°C</strong></td>
<td>19/80</td>
</tr>
<tr>
<td><strong>Hysol® EA 9628™</strong></td>
<td>• •</td>
<td>250/121</td>
<td>20</td>
<td>5500/36.0</td>
<td><strong>220°F/104°F</strong></td>
<td>18/80</td>
</tr>
<tr>
<td><strong>Hysol® EA 9628H™</strong></td>
<td>• •</td>
<td>250/121</td>
<td>20</td>
<td>5500/38.0</td>
<td><strong>190°F/104°F</strong></td>
<td>20/90</td>
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<tr>
<td><strong>Hysol® EA 9628H1™</strong></td>
<td>• •</td>
<td>400/204</td>
<td>15</td>
<td>4600/33.0</td>
<td><strong>190°F/104°F</strong></td>
<td>13/60</td>
</tr>
<tr>
<td><strong>PL 737™</strong></td>
<td>• •</td>
<td>350/177</td>
<td>14</td>
<td>4600/33.0</td>
<td><strong>190°F/104°F</strong></td>
<td>13/60</td>
</tr>
<tr>
<td><strong>PL 639™</strong></td>
<td>• •</td>
<td>180/82</td>
<td>90</td>
<td>180/82</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>Hysol® EA 9696™</strong></td>
<td>• •</td>
<td>250/121</td>
<td>60</td>
<td>7000/35.0</td>
<td><strong>190°F/104°F</strong></td>
<td>25/100</td>
</tr>
<tr>
<td><strong>Hysol® EA 9689™</strong></td>
<td>• •</td>
<td>300/149</td>
<td>90</td>
<td>5800/40.0</td>
<td><strong>190°F/104°F</strong></td>
<td>76/69</td>
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<tr>
<td><strong>Hysol® EA 9689™</strong></td>
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<td>420/216</td>
<td>10</td>
<td>3750/24.1</td>
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<td>8/59</td>
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<tr>
<td><strong>Hysol® EA 9695™</strong></td>
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<td>5000/30.3</td>
<td><strong>190°F/104°F</strong></td>
<td>35/69</td>
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<tr>
<td><strong>Hysol® EA 9695™</strong></td>
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<td>60</td>
<td>7000/40.0</td>
<td><strong>190°F/104°F</strong></td>
<td>25/100</td>
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<tr>
<td><strong>PL 629™ Nitrite Phenolic</strong></td>
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<td>180/82</td>
<td>90</td>
<td>3900/23.1</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
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<tr>
<td><strong>PL 663™ Nitrite Phenolic</strong></td>
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<td>270/132</td>
<td>90</td>
<td>2700/18.6</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>PL 737™</strong></td>
<td>• •</td>
<td>350/177</td>
<td>14</td>
<td>3500/27.2</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>PL 777-1FR™</strong></td>
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<td>300/149</td>
<td>10</td>
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<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>PL 780-1™</strong></td>
<td>• •</td>
<td>350/177</td>
<td>10</td>
<td>3500/18.6</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>PL 795™</strong></td>
<td>• •</td>
<td>350/177</td>
<td>100</td>
<td>3500/24.1</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>PL 795™</strong></td>
<td>• •</td>
<td>350/177</td>
<td>100</td>
<td>3500/24.1</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
<tr>
<td><strong>PL 7000™</strong></td>
<td>• •</td>
<td>300/149</td>
<td>30</td>
<td>4300/24.8</td>
<td><strong>190°F/104°F</strong></td>
<td>15/41</td>
</tr>
</tbody>
</table>

**Film Adhesives**

- First generation modified epoxy film, high peel strength, good stress, environmental resistance and structural properties up to 250°F/121°C. Data from 0.060 psf, 300 g/m².
- Second generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 250°F/121°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².
- First generation moisture-resistant, high peel strength, good stress, environmental resistance and structural properties up to 300°F/149°C. Data from 0.060 psf, 300 g/m².

**Description**

- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².
- Data from 0.060 psf, 300 g/m².

**Handling**

- Excellent tack and handling.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.
- Excellent handling characteristics.

**Composites**

<table>
<thead>
<tr>
<th>Special Applications</th>
<th>Film Adhesives</th>
<th>Mechanical Properties</th>
<th>Bulk Properties</th>
<th>Handling</th>
<th>Storage Temperature (°F/°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composite surfacing</strong></td>
<td><strong>Flatwise Tension</strong> @ 77°F/25°C</td>
<td><strong>Square Foot/Gal @ 0.3 mil</strong></td>
<td><strong>Outtime (Days @ 77°F/25°C)</strong></td>
<td><strong>Lap Shear</strong></td>
<td><strong>Elevated Temperature (psi/MPa)</strong></td>
</tr>
<tr>
<td><strong>Composite bonding</strong></td>
<td><strong>Honeycomb Climbing Drum</strong></td>
<td><strong>Sprayable</strong></td>
<td><strong>Composite Bonding</strong></td>
<td><strong>Metal &amp; Honeycomb Bonding</strong></td>
<td><strong>Tape Bonding</strong></td>
</tr>
</tbody>
</table>

**Outcomes**: 53.4% of the text is covered in this summary.
VERSATILE dispensing systems for two-part adhesive chemistries incorporate a variety of feed system options. Available in fixed or variable ratio, the systems offer programmable shot size and integrated PLC controls with convenient touch screen capability. These units come standard with mild steel pump components with optional abrasion resistant or 304 stainless steel.

FEATURES:
- Fixed and variable mix ratio capability
- Programmable shot size selection from touch screen
- Ratio check valves
- Adjustable flow control
- Mild steel or abrasion resistant pumps available
- 4.5" W x 3.4" H monochrome touch screen and PLC
- Cycle totalizer
- Maintenance totalizer
- Automatic purge controller
- Emergency stop palm button
- Foot switch activation

Pre-impregnated polyester peel ply product supplied in film form. Specially designed resin system capable of curing at 350°F/177°C. Compatible with state-of-the-art composite prepreg resin systems. Provides minimal residual peel ply fibers at the bond surface after curing and removal.
**SYNTACTIC PRODUCTS**

**ADHESIVE SYSTEMS**

**Syntactic Products and Core Splices**

<table>
<thead>
<tr>
<th>Product</th>
<th>Applications</th>
<th>Characteristics</th>
<th>Bulk Properties</th>
<th>Handling</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SYNCORE® SYNACTIC FILMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SynCore® 9823.1”</td>
<td>•</td>
<td>250/121</td>
<td>15 10</td>
<td>9000/62</td>
<td>4500/31 363/2000</td>
</tr>
<tr>
<td>SynCore® 9872.1”</td>
<td>•</td>
<td>350/177</td>
<td>15 10</td>
<td>8800/61</td>
<td>4500/31 400/2750</td>
</tr>
<tr>
<td>SynCore® 9837.1™</td>
<td>•</td>
<td>350/177</td>
<td>90 21</td>
<td>13.8 @ 0.42 g/cc</td>
<td>3.45 @ 0.19 g/cc</td>
</tr>
<tr>
<td><strong>SYNSPAND® EXPANDING SYNACTIC FILMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SynSpand® EA 9880/1 Ablatable Seal</td>
<td>•</td>
<td>180/82</td>
<td>15 10</td>
<td>1100/7.6</td>
<td>62/430</td>
</tr>
<tr>
<td>SynSpand® 9899”</td>
<td>•</td>
<td>250/121</td>
<td>15 10</td>
<td>500 @ 12 pcf density/30°F/-18°C</td>
<td>13.8 @ 0.42 g/cc</td>
</tr>
<tr>
<td>SynSpand® 9899CF™*</td>
<td>•</td>
<td>350/177</td>
<td>15 10</td>
<td>2000 @ 25 pcf density/13.8 @ 0.42 g/cc</td>
<td>250/121 or 350/177</td>
</tr>
<tr>
<td><strong>COMPOSITE SURFACING FILMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SynSilk® HC 9837.1”</td>
<td>•</td>
<td>350/177</td>
<td>90 21</td>
<td>200°F/103°C</td>
<td>110°F/60°C</td>
</tr>
<tr>
<td><strong>CORE SPICES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hysol® EA 9833.1” BM4</td>
<td>•</td>
<td>450/232</td>
<td>30 10</td>
<td>1000/6.8</td>
<td>1000/6.8</td>
</tr>
<tr>
<td>MA 567”</td>
<td>•</td>
<td>350/177</td>
<td>10 5</td>
<td>1191/8.3</td>
<td>1063/7.3</td>
</tr>
<tr>
<td>MA 562”</td>
<td>•</td>
<td>350/177</td>
<td>20 10</td>
<td>1200/8.3</td>
<td>1100/8.0</td>
</tr>
<tr>
<td>MA 562S”</td>
<td>•</td>
<td>350/177</td>
<td>10 10</td>
<td>1100/7.5</td>
<td>1000/6.8</td>
</tr>
<tr>
<td>MA 562SPR</td>
<td>•</td>
<td>350/177</td>
<td>10 10</td>
<td>850/8.8</td>
<td>1000/6.8</td>
</tr>
<tr>
<td>PL 460”</td>
<td>•</td>
<td>350/177</td>
<td>30 10</td>
<td>1682/11.6</td>
<td>1170/8.1</td>
</tr>
<tr>
<td>PL 685”</td>
<td>•</td>
<td>350/177</td>
<td>30 10</td>
<td>1200/11.2</td>
<td>1000/6.8</td>
</tr>
</tbody>
</table>

* SynSpand® 9899CF™ may also be used as a core splice.
**Process Line Cleaners**

**Turco® 4181-L™**
- **Applications**: Liquid Concentrated Immersion 50%-75% in Water
- **Characteristics**: Alkaline
- **Alloys**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 117°-131°F / 47°-60°C
- **Time**: 5-15 minutes

**Turco® Vitro-Klene**
- **Application**: Powder Concentrated Immersion 60-75 g/l Caustic
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 149°-176°F / 65°-80°C
- **Time**: 5-15 minutes

**Turco® 6751-L™**
- **Application**: Liquid Concentrated Spray 1%-4% in Water
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 86°-140°F / 30°-60°C
- **Time**: 1-2 minutes

**Turco® 6849™**
- **Application**: Liquid Concentrated Immersion 10%-20% in Water
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 113°-131°F / 45°-60°C
- **Time**: 5-15 minutes

**Turco® 5578-L™**
- **Application**: Liquid Ready to Use Immersion, Immersion: 1:3-20 Alkaline
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 149°-176°F / 65°-80°C
- **Time**: 5-15 minutes

**Turco® 4215 NC-LT™**
- **Application**: Powder Concentrated Immersion, Immersion: 40-60 g/l Mildly
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 149°-176°F / 65°-80°C
- **Time**: 5-15 minutes

**Turco® 5948-DPM™**
- **Application**: Liquid Concentrated Immersion 1%-3% in Water
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 158°F / 70°C
- **Time**: 5-15 minutes

**Turco® 6754™**
- **Application**: Liquid Concentrated Immersion 5%-15% in Water
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 158°-176°F / 70°-80°C
- **Time**: 5-15 minutes

**Turco® 4355™**
- **Application**: Liquid Concentrated Immersion 5%-15% in Water
- **Characteristics**: Metal Preparation Process: Typical Titanium Pretreatment Process:
- **Operation**: Typical Aluminum Pretreatment Process:
- **Temperature**: 158°-176°F / 70°-80°C
- **Time**: 2-15 minutes

**Process Line Cleaners**

**Metal Preparation Process:**
1. Clean.
2. Deoxidize.
3. Etch.

**Typical Titanium Pretreatment Process:**
1. Aqueous degrease with Ridoline® 4355™
2. Rinse.
3. Alkaline clean with Altrex® 24™ or Ridoline® 4355™.
4. Rinse.
5. Conversion coat with Alodine® 4355™
6. Rinse.

**Typical Aluminum Pretreatment Process:**
1. Aqueous degrease with Nitradd.
2. Rinse.
3. Alkaline clean with Alodine® 1200S™ or Anodize.
4. Rinse.
5. Alkaline etch with MIL-Etch® or Aluminux® Etch L.
6. Rinse.
7. Coating.
8. Rinse.
9. Conversion coat with Alodine® 5200™, Rock site® 12255™, or Alodine® 5200™.
10. Rinse.

**Characteristics:**
- Low reservoir temperature.
- Easy to handle.
- No need to measure or control.
- Consistent application.

**Temperature:**
- 80°-95°C
- 55°-70°C
- 30°-60°C
- 65°-80°C
- 45°-55°C
- 40°-70°C

**Operation:**
- Spray: 7-15 g/l Alkaline
- Spray: 2-4 mins
- Spray: 2-4 mins
- Spray: 2-4 mins
- Spray: 2-4 mins
- Spray: 2-4 mins
- Spray: 2-4 mins

**Applications:**
- Jet Engine Cleaning
- Aircraft Parts Cleaning
- Aircraft Depaint & Repaint
- Coolants
- Aircraft Appearance
- Aircraft Protection

**Consistency:**
- 30% - 60%
- 30% - 60%
### Deoxiders, Etchants, and Conversion Coatings

#### Deoxiders

<table>
<thead>
<tr>
<th>Product</th>
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<th>Characteristics</th>
<th>Alloys</th>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nova EC-202 L</td>
<td>Liquid Concentrated Immersion 4%-10% in Water Alkaline</td>
<td></td>
<td></td>
<td></td>
<td>Chromium-free liquid concentrate for deoxidizing and desmutting aluminum alloys. Extensively effective in removing surface oxides, discolorations due to heat treatment or thermal demarking, and smut that develops during alkaline etching and chemical milling. Meets the deoxidizing requirements of MIL-W-6858C, Paragraph 4.2 and many other aerospace specifications.</td>
</tr>
<tr>
<td>Alodine® 600 RTU™</td>
<td>Liquid Ready to Use Immersion Use as Received</td>
<td></td>
<td></td>
<td></td>
<td>Deferent liquid formulated to deoxidize, desmut, and lightly etch aluminum alloys by spray or immersion methods. Chromium-free, ideal for processing alloys that require low surface resistance prior to anodizing, conversion coating, bonding, or welding.</td>
</tr>
<tr>
<td>Aluminux® Etch L™</td>
<td>Liquid Concentrated Immersion 10%-15% in Water Alkaline</td>
<td></td>
<td></td>
<td></td>
<td>Dark brown liquid formulated to deoxidize and desmut aluminum alloys by spray or immersion methods. Chromium-free, ideal for processing alloys that require low surface resistance prior to anodizing, conversion coating, bonding, or welding.</td>
</tr>
<tr>
<td>Deoxalume® 2310™</td>
<td>Liquid Concentrated Immersion 10-20% Deoxalume® 2310™ Acidic</td>
<td></td>
<td></td>
<td></td>
<td>Chromium-free solution for deoxidizing aluminum alloys. Ideal for processing alloys that require low surface resistance prior to anodizing, conversion coating, bonding, or welding.</td>
</tr>
<tr>
<td>Alodine® T 5900™ RTU</td>
<td>Liquid Ready to Use Immersion Use as Received</td>
<td></td>
<td></td>
<td></td>
<td>Brown liquid formulated to deoxidize and desmut aluminum alloys by spray or immersion methods. Chromium-free, ideal for processing alloys that require low surface resistance prior to anodizing, conversion coating, bonding, or welding.</td>
</tr>
<tr>
<td>Alodine® 1200 S™</td>
<td>Liquid Brush: 1:3 Phosphoric Acid-Based</td>
<td></td>
<td></td>
<td></td>
<td>Liquid chemical used to produce a protective coating on aluminum or aluminum alloys. The coating provides protection for unpainted aluminum and bonds paint well. Approved under MIL-C-81706 for use by Application Methods A and C, Classes 1A and 3. Listed on MIL-81706 indicates its acceptance under the MIL-C-38522B, MIL-STD-130, and MIL-S-5002.</td>
</tr>
<tr>
<td>Alodine® 1201™</td>
<td>Liquid Brush or Ready to Use Immersion</td>
<td></td>
<td></td>
<td></td>
<td>Brown liquid formulated to deoxidize and desmut aluminum alloys by spray or immersion methods. Free of chrome and ideal for processing alloys that require low surface resistance prior to anodizing, conversion coating, bonding, or welding.</td>
</tr>
<tr>
<td>Alodine® 1250™</td>
<td>Liquid Brush or Ready to Use</td>
<td></td>
<td></td>
<td></td>
<td>Non-flammable, chromic acid-based coating chemical that will produce a chrome conversion coating on aluminum and its alloys.</td>
</tr>
<tr>
<td>Alodine® 1500™</td>
<td>Liquid Concentrated Immersion 15% to 25% in Water Acidic</td>
<td></td>
<td></td>
<td></td>
<td>Chromium-free coating chemical specifically formulated for deoxidizing and desmutting aluminum and its alloys. It is approved by Boeing BAC 5765.</td>
</tr>
<tr>
<td>Alodine® 2210™</td>
<td>Liquid Concentrated Immersion 1% to 3% in Water Acidic</td>
<td></td>
<td></td>
<td></td>
<td>Liquid coated used to produce a protective coating on aluminum or aluminum alloys. The coating provides protection for unpainted aluminum and bonds paint well. Approved under MIL-C-81706 for use by Application Methods A and C, Classes 1A and 3. Listed on MIL-81706 indicates its acceptance under the MIL-C-38522B, MIL-STD-130, and MIL-S-5002.</td>
</tr>
<tr>
<td>Alodine® 3500™</td>
<td>Liquid Concentrated Immersion 1%-10% in Water Acidic</td>
<td></td>
<td></td>
<td></td>
<td>Liquid coated used to produce a protective coating on aluminum or aluminum alloys. The coating provides protection for unpainted aluminum and bonds paint well. Approved under MIL-C-81706 for use by Application Methods A and C, Classes 1A and 3. Listed on MIL-81706 indicates its acceptance under the MIL-C-38522B, MIL-STD-130, and MIL-S-5002.</td>
</tr>
<tr>
<td>Alodine® 3800™</td>
<td>Liquid Concentrated Immersion 5%-15% in Water Acidic</td>
<td></td>
<td></td>
<td></td>
<td>Liquid coated used to produce a protective coating on aluminum or aluminum alloys. The coating provides protection for unpainted aluminum and bonds paint well. Approved under MIL-C-81706 for use by Application Methods A and C, Classes 1A and 3. Listed on MIL-81706 indicates its acceptance under the MIL-C-38522B, MIL-STD-130, and MIL-S-5002.</td>
</tr>
</tbody>
</table>
### CONVERSION COATINGS CONTINUED

<table>
<thead>
<tr>
<th>Product</th>
<th>Applications</th>
<th>Characteristics</th>
<th>Alloys</th>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turco® 5948-DPM™</td>
<td>Liquid Ready to Use Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient</td>
<td>Full-packed matter that provides a chrome conversion coating on aluminum surfaces prior to painting. Meets MIL-DTL-81706A, Class I, Form VI, Method D. Ideal for coating repair work.</td>
</tr>
<tr>
<td>Turco® 5668™</td>
<td>Liquid Ready to Use Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient</td>
<td>Formulated for treating aluminum to conform to MIL-C-55451, Class I. The kit contains sufficient chemicals for cleaning and coating approximately 100 square feet of aluminum surface when used under normal conditions and in accordance with the directions.</td>
</tr>
<tr>
<td>Turco® Liquid Sprayeze</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient</td>
<td>Formulated for treating aluminum to conform to MIL-C-55451, Class I. The kit contains sufficient chemicals for cleaning and coating approximately 100 square feet of aluminum surface when used under normal conditions and in accordance with the directions.</td>
</tr>
<tr>
<td>Turco® Rust Bloc</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient</td>
<td>Formulated for treating aluminum to conform to MIL-C-55451, Class I. The kit contains sufficient chemicals for cleaning and coating approximately 100 square feet of aluminum surface when used under normal conditions and in accordance with the directions.</td>
</tr>
</tbody>
</table>

### JET ENGINE CLEANING, HOT LINE

<table>
<thead>
<tr>
<th>Product</th>
<th>Applications</th>
<th>Characteristics</th>
<th>Alloys</th>
<th>Operation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Turbo® 6886</td>
<td>Liquid Ready to Use Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>15-60 minutes</td>
<td>Diphase, liquid paint remover developed to remove resistant coatings, such as aluminized silicones, polyurethanes, acrylics, epoxies and chromated primers, not poor under chromate, chromate sensitized or acids. Ideal for the removal of PRC-1560M and PRC-1560MC coatings and is not detrimental to metal surfaces such as aluminum, brass, magnesium, steel, conversion coatings. One coating of is needed to completely remove all paints, varnishes, and otherPTC coatings from metal surfaces.</td>
</tr>
<tr>
<td>Turbo® 5948-DPM™</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>5-15 minutes</td>
<td>Alkaline, water-based, blue concentrated component formulated to effectively clean painted and unpainted exterior and interior surfaces when diluted with water. Ideally suited for use on all models of jet aircraft. It is also designed to be used in immersion tanks for dip applications.</td>
</tr>
<tr>
<td>Turbo® Liquid Sprayeze</td>
<td>Liquid Concentrated Immersion or Spray</td>
<td>Alkaline, Water-Based</td>
<td>-</td>
<td>5-15 minutes</td>
<td>Suitable for cleaning most magnesium alloys, Zinc and cadmium, and is ideal for pre-etching metals prior to phosphating and painting. Does not contain free caustic, readily rinses from metal surfaces with room temperature water, and is effective from 90°-105°F/32°-40°C.</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>Turbo® Rust Bloc</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>Varius</td>
</tr>
<tr>
<td>Turbo® 4338-L™</td>
<td>Liquid Ready to Use Immersion</td>
<td>Alkaline, Permanaganate</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td>Turbo® 4368 BL™</td>
<td>Liquid Concentrated Immersion</td>
<td>Acetic</td>
<td>-</td>
<td>Ambient to 140°F/60°C</td>
<td>3-12 minutes</td>
</tr>
<tr>
<td>Turbo® Scale Gen 7™</td>
<td>Liquid Concentrated Immersion</td>
<td>Molybdenum</td>
<td>-</td>
<td>Ambient to 140°F/60°C</td>
<td>15-60 minutes</td>
</tr>
</tbody>
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<tr>
<td>Turbo® 4181-L™ or Turbo® 4408™</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td>Turbo® 4181-L™</td>
<td>Liquid Ready to Use Immersion</td>
<td>Alkaline</td>
<td>-</td>
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<td>Turbo® 4181-L™ or Turbo® 4408™</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td>Turbo® 4181-L™</td>
<td>Liquid Ready to Use Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td>Turbo® 4181-L™ or Turbo® 4408™</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>30-60 minutes</td>
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<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
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<td>Turbo® 4181-L™ or Turbo® 4408™</td>
<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
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<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
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<td>Liquid Concentrated Immersion</td>
<td>Alkaline</td>
<td>-</td>
<td>Ambient to 200°F/93°C</td>
<td>30-60 minutes</td>
</tr>
</tbody>
</table>
**SPECIALTY CLEANERS**

**TURCO® 6802™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid
- **Form:** Ready to Use
- **How to Apply:** Immersion, Brush or Spray
- **Mix Ratio:** 30-60 g/l
- **Spray:** 7.5-15 g/l
- **Chemistry:** Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 158°-176°F
- **Time:** 5-15 minutes

**TURCO® 5948-DPM™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid Concentrated
- **Form:** Spray
- **How to Apply:** Immersion, 3-15 g/l
- **Chemistry:** Mildly Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 113°-131°F
- **Time:** Maximum 30-90 minutes

**DINOL REMOVER**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid
- **Form:** Ready to Use
- **How to Apply:** Immersion, Use as Received
- **Chemistry:** Petroleum
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 104°-140°F
- **Time:** 30 minutes

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**SPECIALTIES TREATMENTS**

**AKCIAL™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid
- **Form:** Ready to Use
- **How to Apply:** Immersion, Brush or Spray
- **Chemistry:** Petroleum
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 104°-140°F
- **Time:** 30 minutes

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**SURFACE TREATMENTS**

**TURCO® 4215 NC-LT™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Powder Concentrated
- **Form:** Immersion, 30-60 g/l
- **Chemistry:** Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 149°-176°F
- **Time:** Maximum 15-60 minutes

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**TURCO® 5948-DPM™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid Concentrated
- **Form:** Immersion, 7-15 g/l
- **Chemistry:** Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 149°-176°F
- **Time:** Maximum 15-60 minutes

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**TURCO® 5668™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid Ready to Use
- **Form:** Immersion, Use as Received
- **Chemistry:** Petroleum
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 149°-176°F
- **Time:** Maximum 15-60 minutes

---

**TURCO® 5948-DPM™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid Concentrated
- **Form:** Spray
- **How to Apply:** 1 Part Concentrate, Alkaline
- **Chemistry:** Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 149°-185°F
- **Time:** 5-15 minutes

---

**TURCO® 5948-DPM™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid Concentrated
- **Form:** Spray
- **How to Apply:** 1 Part Concentrate, Alkaline
- **Chemistry:** Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 149°-185°F
- **Time:** 5-15 minutes

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**TURCO® 5948-DPM™**
- **Product:** Specialty Cleaners
- **Applications:** Aircraft Parts Cleaning, Aircraft Depaint & Repaint, Coolants, Aircraft Appearance, Aircraft Protection
- **Consistency:** Liquid Concentrated
- **Form:** Spray
- **How to Apply:** 1 Part Concentrate, Alkaline
- **Chemistry:** Alkaline
- **Alloys:** Copper, magnesium, cadmium, and nickel alloys
- **Temperature:** 149°-185°F
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## Specialty Cleaners, Strippers, Maskants and Coolants

### WHEEL AND BRAKE

**Product:** Wheel and Brake Paint Strippers, Maskants, and Coolants

<table>
<thead>
<tr>
<th>Product</th>
<th>Applications</th>
<th>Characteristics</th>
<th>Alloys</th>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turco® Fluid Red</td>
<td>Liquid Concentrated</td>
<td>Immersion or Spray</td>
<td>Immersion: 10%-25% in Water</td>
<td>Alkaline</td>
<td>Ambient to 203°F/95°C</td>
</tr>
<tr>
<td>Turco® 5988™</td>
<td>Liquid Ready to Use</td>
<td>Immersion</td>
<td>Add Entire Contents of Container to Stripping Tank</td>
<td>Alkaline</td>
<td>108°-176°F/50°-80°C</td>
</tr>
<tr>
<td>Turco® 6711-L™</td>
<td>Liquid Concentrated</td>
<td>Spray</td>
<td>1%-4% in Water</td>
<td>Alkaline</td>
<td>86°-140°F/30°-60°C</td>
</tr>
<tr>
<td>Turco® Aviation</td>
<td>Powder Concentrated</td>
<td>Immersion: 30-60 g/l</td>
<td>Spray: 7.5-15 g/l</td>
<td>Alkaline</td>
<td>Immersion: 107°-185°F/40°-80°C</td>
</tr>
<tr>
<td>Turco® Liquid Spayvays EM-L™</td>
<td>Liquid Concentrated</td>
<td>Immersion or Spray</td>
<td>Immersion: 15%-25% in Water</td>
<td>Alkaline, Water-Based</td>
<td>203°F/95°C</td>
</tr>
</tbody>
</table>

### PAINT STRIPPERS

<table>
<thead>
<tr>
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<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turco® 5776™</td>
<td>Liquid Ready to Use</td>
<td>Spray</td>
<td>Use as Received</td>
<td>Acidic</td>
<td>Ambient</td>
</tr>
<tr>
<td>Turco® 5776-Thin</td>
<td>Liquid Diphase</td>
<td>Ready to Use</td>
<td>Immersion</td>
<td>Acid Activated</td>
<td>80°-100°F/27°-38°C</td>
</tr>
<tr>
<td>Turco® 6813-E™</td>
<td>Liquid Ready to Use</td>
<td>Spray or Brush</td>
<td>Use as Received</td>
<td>Alkaline, Water-Based</td>
<td>Ambient</td>
</tr>
<tr>
<td>Turco® 6940-G™</td>
<td>Liquid Ready to Use</td>
<td>Spray or Brush</td>
<td>Use as Received</td>
<td>Water-Based</td>
<td>Ambient</td>
</tr>
<tr>
<td>Turco® EA 6910™</td>
<td>Liquid Ready to Use</td>
<td>Spray</td>
<td>Use as Received</td>
<td>Acids, Water-Based</td>
<td>Ambient</td>
</tr>
<tr>
<td>Turco® EA 6890™</td>
<td>Liquid Ready to Use</td>
<td>Spray</td>
<td>Use as Received</td>
<td>Peroxide Activated, Water-Based</td>
<td>Ambient</td>
</tr>
</tbody>
</table>

### MASKANTS

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Turco® Form Maskant 5010K and Turco® Form/Maskant 6101</td>
<td>Liquid</td>
<td>Two-Part</td>
<td>Spray</td>
<td>Polyurethane-Based</td>
<td>Ambient</td>
</tr>
</tbody>
</table>

### MULLER/MACHINE COOLANTS

<table>
<thead>
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</table>

### Typical Paint Stripping Process:

1. Preheat surfaces if not to be stripped.
2. Apply either an acid, alkaline, or peroxide paint stripper to surface. See above list.
3. Apply paint surface with stiff brush. Squeeze off loosened paint and rinse.
4. Follow with Turco® 5944-DPM™ to wash prior to etching.
5. Rinse.
6. Use Turco® Metal Glo #4 to etch metal prior to conversion coating. Follow Turco® Metal Glo #4 application instructions.
7. Apply conversion coating. Follow instructions related to the specific Turco® conversion coating.