

## X2-4000 Chrome Free Low VOC Primer

Technical Data Sheet (TDS)

Conforms to: (MIL-PRF-23377 TYPE 1, CLASS N)

### Product Description

Endura X2-4000 Chrome Free Low VOC Primer is two component epoxy primer sealer. It is designed for use on smooth aluminum and other substrates.

#### Product features:

- Ultra-smooth finish
- Thin film coating
- Superior primer for aluminum
- Off white color
- Chrome free
- VOC Compliant
- Excellent corrosion resistance

### Recommended Uses

Endura X2-4000 is recommended for use on aircraft aluminum, steel, zinc-coated steel and other ferrous and non-ferrous metals and composites.

For aircraft fabric applications, Endura X2-7000 EP-UT Flex-Sealer System is recommended.

### Mix Ratio

1 part by volume of X2-4000 Component A [XPA04000]  
1 part by volume of X2-4200 Component B [XPB04000]

The recommended temperature when mixed is 20-25°C (68-77°F).

### Product Characteristics

<b>Volume Solids Mixed:(Unreduced)</b>	27% ± 1%
<b>Pot Life:</b> (77°F (25°C) and 50% RH)	10 Hours
<b>VOC Mixed (Unreduced): EPA Method 24</b>	335 g/l 2.796 lb /gal
<b>Shelf Life:</b>	
<b>Component A</b>	3 years
<b>Component B</b>	2 years
<b>Reducers</b>	10 years
<b>For unopened product (77°F (25°C))</b>	

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#### Surface Preparation

Surfaces must be properly prepared before applying primer.

##### Non-Aluminum Surfaces:

Surface must be free of all contaminants such as dust, oil, grease, and salt.

For all non-aluminum substrates, refer to the Endura recommended surface preparation instruction sheets or the manufacturer's specification.

**For further information contact your Endura Aviation Representative.**

##### Aluminum Surfaces:

1. Wash the surface with Endura Degreaser 10 or equivalent; follow the product Technical Data Sheet directions. Do not allow the Degreaser 10 to dry on the surface.
2. Aluminum surfaces should then be etched with Endura Aluminum Cleaner or equivalent. The readiness of the surface should be checked using a water break test.
3. Once ready, the surface should be treated with Alodine or equivalent pre-treatment system.

Alternatively, an environmentally friendly, chromate-free process using Endura MetaLink can be employed. See the MetaLink TDS for more information.

#### Application

X2-4000 Chrome Free Primer can be applied using most spray-painting systems.

1. Apply one medium coat at approximately 3.0 mils wet

X2-4000 Chrome Free Primer can be topcoated without sanding for up to 24 hours at 68°F (20°C). After 24 hours, adhesion of topcoat to primer is reduced and thorough sanding with 320 – 400 grit sandpaper (or Scotch-Brite™ Red scuff pad) is recommended.

#### Spray Gun Setup

Feed Type	Fluid Tip	Application Pressures (Heel of gun)	Fluid Delivery
Siphon Feed	1.6-1.8 mm	40-50 psi	
Gravity Feed	1.3-1.4 mm	40-50 psi	
Pressure Feed	1.0-1.2 mm	30-40 psi	7-10 oz/min
Air Assist Airless	9-11 thou	1000-1800 psi	
Airless		N/A	

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### Spraying Viscosity

Ford 4 Viscosity Cup at 68°F (20°C)	Zahn #2 Viscosity Cup at 68°F (20°C)
<p>Viscosity in seconds Reduce viscosity as required</p>	<p>Viscosity in seconds Reduce viscosity as required</p>

**Note:** Spraying viscosity and thinning will depend on ambient conditions, spray equipment used, and the desired surface finish.

Thinning is not typically required.

### Film Build

X2-4000 Chrome Free Primer has a recommended film build thickness of:

<b>Wet: WFT Unreduced</b>	<b>3.5 – 5.5 mils</b>	<b>89 – 140 microns</b>
<b>Dry: DFT</b>	<b>1.0 - 1.5 mils</b>	<b>25 – 38 microns</b>

Theoretical coverage at 1.0 mil (25 microns) DFT: 429 ft<sup>2</sup> per gallon at 100% transfer efficiency.

**Note:** At the recommended film thickness, the primer may appear semitransparent.

### Dry Times

	<b>68°F (20°C)</b>	<b>86°F (30°C)</b>	<b>104°F (40°C)</b>
<b>Time to Topcoat</b>	1 Hour	30 Minutes	15 Minutes
<b>Full Cure</b>	7-9 Days	5-6 Days	3-4 Days

**Note:** Dry Times are subject to ambient conditions (temperature and humidity), good airflow and film build of primer.

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For best results surface temperature must be 86°F (30°C) or less before topcoating.  
Maximum re-coat window without sanding is 24 hours at 68°F (20°C).  
Recommended Scuff Sanding 320-400 grit after the topcoat window has been exceeded.

For improved scheduling please contact your Endura Aviation Representative.

### Topcoating Information

Best protection is provided when topcoated with X1-7500 Topcoat.

### Clean Up

Clean all equipment immediately after use with Endura High Strength Gun wash, Endura epoxy reducer or alternatively Endura X1 or X2 Reducers can be used.

Follow manufacturer's safety recommendations when using any solvent.

### Ordering Information (sizing)

X2-4000 Chrome Free Primer is available from a quart kit to pail kit sizes.

2 mixed quarts (1.89l)		
Comp A – Grey	XPA04000-020	1 quart (946 ml)
Comp B	XPB04000-020	1 quart (946 ml)

2 mixed gallons (7.56l)		
Comp A – Grey	XPA04000-030	1 gallon (3.78l)
Comp B	XPB04000-030	1 gallon (3.78l)

### Environmental Conditions

For optimum coating performance, product, substrate, and ambient temperature should be between 68°F-77°F (20°C-25°C). To prevent condensation during application, the surface temperature must always be 5°F (3°C) or more above the dew point.

For use outside this range please contact your Endura Aviation Representative.

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### Specifications

Characteristic	Test Method	Result
Impact resistance	ASTM D2794	100 in. lbs; NO failure
Flexibility	ASTM D522	1/4" mandrel bend: NO failure
Service Temperature	-40°F to 250°F	-40°C to 121°C

### Safety Precautions

Please refer to all Safety Data Sheets (SDS) before using this product. SDS sheets can be found on our website at [www.EnduraAviation.com](http://www.EnduraAviation.com).