

## X1-4500 & X1-4600 Polish Clear

### Technical Data Sheet (TDS)

#### Product Description

Endura X1-4500 and X1-4600 Polish Clear are two-component, highly cross-linked, high performance acrylic modified polyester polyurethane clear coats.

#### Product features:

- High gloss
- Easy to spray
- Smooth finish
- Excellent polishing characteristics
- Exceptional ultraviolet light protection

#### Recommended Uses

X1-4500/4600 Polish Clear is suitable for protecting most finished surfaces including solid, metallic and pearl colors.

X1-4500 is 'fast' and is used for lower temperature application.

X1-4600 is 'slow' and is used for higher temperature applications.

Contact your Endura Aviation Representative for additional information.

#### Mix Ratio

##### X1-4500:

4 parts by volume of X1-4500	Component A	[XKA04500]
1 part by volume of X1-4400	Component B	[XKB04400]

##### X1-4600:

4 parts by volume of X1-4600	Component A	[XKA04600]
1 part by volume of X1-4400	Component B	[XKB04400]

**Note: Optimal finish is obtained when product and object are 70-77°F (20-25°C) and RH of 50%.**

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#### Product Characteristics

<b>Gloss: ASTM D2457</b>	High: 90+ GU at 60°
<b>X1-4500 Volume Solids Mixed:(Unreduced)</b>	30% ± 1%
<b>X1-4600 Volume Solids Mixed:(Unreduced)</b>	33% ± 1%
<b>Pot Life:</b> (77°F (25°C) and 50% RH)	4 Hours
<b>Note: The pot life of X1-4600 will be reduced with addition of Aerocat I or II The use of Aerocat 1 or II is not recommended in X1-4500.</b>	
<b>X1-4500 VOC Mixed (Unreduced): EPA Method 24: XKA04500:XKB04400</b>	584 g/l 4.875 lb /gal
<b>X1-4600 VOC Mixed (Unreduced): EPA Method 24: XKA04600:XKB04400</b>	535 g/l 4.426 lb /gal
<b>Shelf Life:</b>	
<b>Component A</b>	3 years
<b>Component B</b>	2 years
<b>Component C</b>	5 years
<b>Reducers</b>	10 years
<b>For unopened product (77°F (25°C))</b>	

#### Surface Preparation

X1-4500 and X1-4600 Polish Clear can be applied on the X1-7500 Topcoat colors without sanding during their topcoat window.

Ensure that surfaces to be clear coated are free of flaws, surface contaminants and other surface imperfections.

If the X1-7500 topcoat surface has been allowed to cure longer than 24 hours, sanding will be required to achieve inter-coat adhesion.

After the topcoat window sand as follows: Between 24 – 48 hours: sand with 600 grit sandpaper

After 48 hours: sand with 320 – 400 grit sandpaper

#### Note:

- **Do not sand Metallic or Pearl colors.**
- **Do not mix X1-4500 or X1-4600 with metallic color for final coat.**
- **Do not mix clear into final color coat on solid colors.** This may cause matching and repeatability issues. Ensure opacity is achieved in previous coat.

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#### Application

X1-4500 and X1-4600 Polish Clear can be applied using most spray-painting systems. Apply X1-4500 or X1-4600 Polish Clear as soon as the topcoat surface has cured enough to wipe with a tack cloth. Apply 2-3 wet coats at 2.0 – 3.0 wet mils allowing a 15-20-minute flash off between coats.

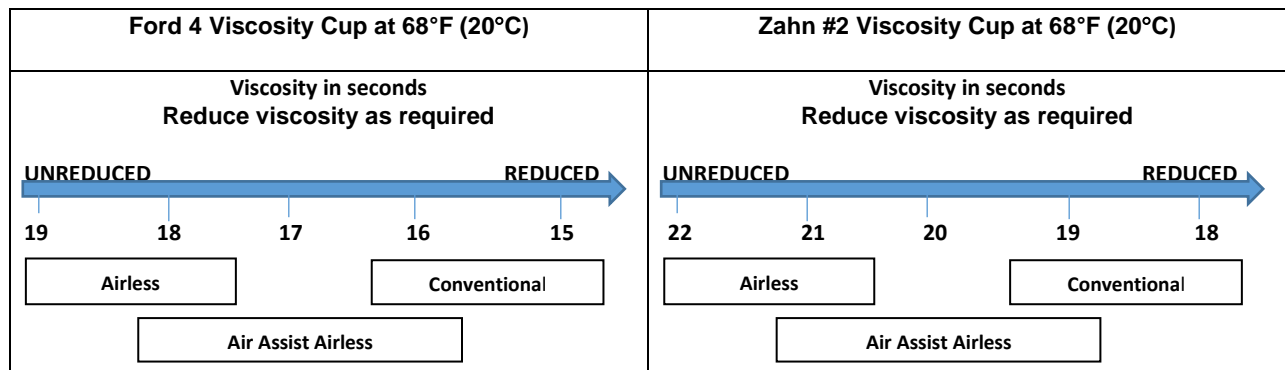
Be aware when more than three coats of paint are applied in a given 12-hour shift (including primer, topcoats and clear coat). If more than 3 coats have been applied, 10-12 hours is recommended to pass to allow for proper solvent evaporation.

**Note:** Drying time can be reduced by use of a faster acting reducer or use of Aerocat I or II accelerator.

#### 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	<1.4 mm	30-40 psi	
Pressure Feed	1.0-1.4 mm	55-65 psi	12-14 oz/min
Air Assist Airless	9-13 thou	1000-1800 psi	
Airless	9-13 thou	1000-3000 psi	

#### Spraying Viscosity



**Note:** The above target viscosities are suggested as a starting point and can be adjusted depending on desired finish. Spraying viscosity and thinning will depend on ambient conditions, spray equipment used.

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If required, recommended spraying viscosity is achieved by reducing with one of the desired Endura Aviation topcoat thinners/reducers.

Standard		Low VOC	
X1-3030 FAST REDUCER	[XUR03030]	X1-2030 LOW VOC FAST REDUCER	[XUR02030]
X1-3020 MED REDUCER	[XUR03020]	X1-2020 LOW VOC MED REDUCER	[XUR02030]
X1-3010 SLOW REDUCER	[XUR03010]	X1-2010 LOW VOC SLOW REDUCER	[XUR02030]

### Film Build

Endura X1-4500 and X1-4600 Polish Clears have a recommended film build thickness of:

<b>Wet: WFT Unreduced</b>	<b>3.0 – 6.0 mils</b>	75 – 150 microns
<b>Dry: DFT</b>	<b>1.0 – 2.0 mils</b>	25 – 50 microns

Theoretical coverage at 1.0 mil (25 microns)

**Average DFT:** 529 ft<sup>2</sup> per gallon at 100% transfer efficiency.

### Dry Times

	68°F (20°C)	86°F (30°C)	104°F (40°C)
<b>X1-4500 Cure to Touch</b>	2 Hours	1 Hour	30 Minutes
<b>X1-4600 Cure to Touch</b>	4 Hours	2 Hour	60 Minutes
<b>Polish</b>	24 Hours	18 Hours	12 Hours
<b>Full Cure</b>	7-14 Days		

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

The above charts are indicative times—always verify using your specific conditions.

### Clean Up

Clean all equipment immediately after use with Endura High Strength Gunwash or Endura X1 Reducers can be used.

Always follow manufacturer's safety recommendations when using any solvent.

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#### Ordering Information (sizing)

X1-4500/4600 Polish Clear is available 5 Quart, 2.5 gallon and 5-gallon kits:

5 Mixed Quarts		
Comp A	XKA04500-030 or XKA 4600 -030	1 Gal.
Comp B	XKB04400-020	1 Qt.

2.5 Mixed Gallons		
Comp A	XKA04500-030 or XKA 4600 -030	2 Gals.
Comp B	XKB04400-020	2 Qts.

5 Mixed Gallons		
Comp A	XKA04500-030 or XKA 4600 -030	4 Gals.
Comp B	XKB04400-030	1 Gal.

#### 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 be 5°F (3°C) or more above the dew point at all times.

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

#### Specifications

CHARACTERISTIC	TEST	RESULT
Hardness	ASTM D3363	4H
Solvent Resistance	ASTM D4752	100 MEK rubs, NO failure
Impact resistance	ASTM D2794	80 in. lbs; NO failure
Taber Abrasion	ASTM D4060	70 mg loss
Flexibility	ASTM D522	1/8" mandrel bend: NO failure
Service Temp	-40°F to 360°F	-40°C to 182°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).