ENVIROBASE®
HIGH PERFORMANCE

Product Information

Envirobase® High Performance (EHP)

Product Description

Envirobase High Performance is waterborne basecoat color for use in the repair and repainting of motor vehicles. Applied as a part of a two or three-stage basecoat/clearcoat paint system, mixed Envirobase High Performance color reproduces the original solid, metallic, mica or xirallic paint finish of a vehicle.

Envirobase High Performance contains considerably less volatile organic compounds (VOC) than conventional solvent borne basecoat. This makes Envirobase particularly suitable for use in areas where VOC emissions or product VOC content are subject to legal restrictions.

PREPARATION OF SUBSTRATE

Apply over original baked finishes or over recommended undercoats.

In all cases, wash all surfaces to be painted with soap and water. Final clean with an appropriate waterborne cleaner. Ensure that the substrate is thoroughly cleaned and dried before starting repair.

Apply Envirobase High Performance after sanding with European P800 -1200 / U.S. 500 - 600 grade paper or dry sand with European P600 - 800 / U.S. 500 - 600 grade paper.

Wash off residues and dry thoroughly before recleaning with appropriate waterborne substrate cleaner. The use of a tack rag is recommended.

- Before Mixing, gently hand-shake bottles of Envirobase tinters for a few seconds before use. Do not place toners or mixed color on shaker or mechanically agitate.
- Mixed Envirobase High Performance color should be thoroughly hand-stirred before application. If not used immediately it should be hand-stirred again before use.
- Use nylon 125 micron paint filters specially designed for use with waterborne paint materials.

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APPLICATION GUIDE

MIXING RATIO:

Envirobase High Performance Color	**:**	**1 part**
T494 / T595* Thinner	**:**	**10 - 30% by volume**

Note: Solid colors require a reduction of 10%. Metallic's require 20%. The translucent mid coat layer of a three stage color require 30% reduction as this layer is not designed to give opacity.
* For use in high heat, low humidity conditions only. See thinner selection guide on page 6 for additional information.

POT LIFE:

Un-activated, 90 days stored in sealed plastic containers. If activated, pot life is 2 hours.

Hand stir well before using. Do not mechanically shake.

ADDITIVES:

T588 (optional activator)	10% by volume after reducing. After activation, additional thinner may be required to bring the color into the 23 - 28 second sprayable viscosity range.

SPRAY GUN SET-UPS:

Fluid Tip	1.2 - 1.4 mm
Spray Viscosity	23 - 28 seconds, Din 4 @ 68ºF / 20ºC

SPRAY PRESSURE:

	Color Coat	**Control Coat**
HVLP	Approx. 29 psi *	Approx. 17 psi *
Conventional	40 - 50 psi *	25 - 30 psi *

***Note:** Refer to DOX440 Gun Set Up Chart for specific manufactures recommendations on air pressure.

NUMBER OF COATS:

All Repairs — 2 - 3 coats to coverage plus control coat*

Horizontal surfaces may require two control coats where vertical surfaces will generally only require one control coat. For HVLP, reduce the air pressure at the gun to 16 - 21 psi for the control coat. For conventional reduce to 25 - 30 psi.

***Note**: A control coat is not required for solid colors.

FLASH OFF @ 20ºC / 68ºF:

Between coats:	1 - 2 minutes or until dried to a matte finish.
Final Flash-off:	When application is complete, apply the control coat and allow it to dry naturally. Force drying of the control coat is not necessary.

Note: Do not use the spray gun as an air drier. Use air drying equipment.

DRYING TIMES:

Dust-Free: 20ºC / 68ºF	Each coat approximately 2 - 4 minutes
Dry To Handle: 20ºC / 68ºF	Approximately 15 - 20 minutes
Dry To De-Nib 20ºC / 68ºF	Approximately 15 - 20 minutes
Tape Time 20ºC / 68ºF	5 minutes
Dry to Clear 20ºC / 68ºF	15 minutes minimum

Note: Because of the intensity of IR curing, If clearcoat is to be cured using IR, the basecoat will first need to be cured with IR to remove the residual moisture from the basecoat film.

APPLICATION GUIDE (Cont.)

OVERCOAT / RECOAT

Overcoat with any compatible Global clear	Flash off until the entire surface is touch-dry and has a uniform matte appearance, or for 15 minutes*.

Sanding:

Dry Sand	Use European P1500 / U.S. 800 grit
Recoat	After 24 hours, 1 coat of Envirobase HP must be applied prior to the clearcoat application. The maximum recoat time is 48 hours.

*Temperature, humidity, air movement and film build affect dry times. The best results are achieved with increased temperature and air movement with minimal film builds.

BLENDING / WET BED

MIXING RATIO

T490 Tinted Clear Additive	**4 Parts**
T494 / T595* Thinner	**1 Part**

For use as a blending additive: Add up to 1 equal part of the T490 mixture to 1 part of ready to spray color and fade into the prepared blend panel.

or

For use as a wet bed: Apply 1 medium light coat of the T490 mixture to the blend panel and or the entire repair panel and allow to dry. It will be milky blue when wet but will dry translucent. Once dry, apply color. Be sure that wherever the wet bed material has been applied, it is completely covered with either basecoat or clearcoat.

***** For use in high heat, low humidity conditions only. See thinner selection guide on page 6 for additional information.

3 STAGE PEARL PROCESS

MIXING RATIO

Ground Coat		**Pearl Coat**	
EHP Color	1 part	EHP Color	1 part
T494 / T595* Thinner	10%**	T494 / T595* Thinner	20%**

** Note: percentage by volume
***** For use in high heat, low humidity conditions only. See thinner selection guide on page 6 for additional information.

VISCOSITY & POTLIFE

Viscosity: 23 - 28 seconds DIN4 68°F / 20°C

Pot Life: 90 days stored in sealed plastic containers

Always strain before use (nylon 125 micron is recommended)

SPRAY GUN & AIR PRESSURE

HVLP gravity feed Fluid Tip: 1.2 - 1.4 mm*

	Color Coat	**Control Coat**
HVLP	Approx. 29 psi *	Approx. 17 psi *
Conventional	40 - 50 psi *	25 - 30 psi *

***Note:** Refer to DOX440 Gun Set Up Chart for specific manufactures recommendations on air pressure.

3 STAGE PEARL PROCESS (Cont.)

APPLICATION

Ground Coat

Apply single coats until opacity is achieved.

Flash off thoroughly between coats.

Avoid heavy application and excessive film builds.

Use air movement equipment to accelerate drying as necessary. Choice of drying methods will depend upon the type and size of the repair.

A control coat is not required for solid color basecoats.

Pearl Coat

Horizontal and vertical Surfaces.
Apply single light coats based on color check panels. Flash off thoroughly between coats.

Apply the control coat and allow it to dry naturally. Force drying of the control coat is not necessary. The pearl color layer is not designed to give opacity.

FLASH-OFF

Flash off until uniformly matt in appearance.

DRY TIMES

Wait until ground coat is uniformly dry before applying pearlcoat.

Wait until pearl coat is uniformly dry before applying clearcoat, approximately 15 minutes.

3 STAGE TINTED MID COAT PROCESS

MIXING RATIO

Ground Coat		Tinted Mid Coat	
EHP Color	1 part	EHP Color	1 part
T494 / T595* Thinner	20%**	T494 / T595* Thinner	30%**

** Note: percentage by volume
***** For use in high heat, low humidity conditions only. See thinner selection guide on page 6 for additional information.

VISCOSITY & POT LIFE

Viscosity: 23 - 28 seconds DIN4 68°F / 20°C

Pot Life: 90 days stored in sealed plastic containers

Always strain before use (nylon 125 micron is recommended)

SPRAY GUN & AIR PRESSURE

HVLP gravity feed: Fluid Tip: 1.2 -1.4 mm*

	Color Coat	Control Coat
HVLP	Approx. 29 psi *	Approx. 17 psi *
Conventional	40 - 50 psi *	25 - 30 psi *

***Note:** Refer to DOX440 Gun Set Up Chart for specific manufactures recommendations on air pressure.

3 STAGE TINTED MID COAT PROCESS (Cont.)

APPLICATION

Ground Coat

Apply single coats until opacity is achieved.

Flash off thoroughly between coats

Apply the control coat onto dry film for even metallic appearance.

Tinted Mid Coat

Apply single light coats based on color check panels.

Flash off thoroughly between coats.

The mid coat layer is not designed to give opacity.

Flash off the mid coat until it is uniformly dry before applying clearcoat, approximately 15 minutes

A control coat is not required for the tinted mid coat layer.

Minor Repair Guidelines:
Dirt nibs or other defects in the Envirobase paint film may be repaired as follows:

1. Allow the surface to completely flash-off
2. Dry sand the defect with P1500 / U.S. 800 grade paper or finer or with a fine abrasive pad or in combination with a small amount of SXA330 Wax and Grease Remover as a sanding lubricant.
3. Remove sanding dust from the surface by strong air blowing with a clean air supply.
4. Tack off surface with a SX1070 tack rag.
5. Re-coat the surface with Envirobase High Performance as normal.

Compatibility

LOW VOC Markets	National Rule Markets
Envirobase® High Performance	**Envirobase® High Performance**
ECP1x A Chromatic Surfacer** ECS2x A Chromatic LV Sealer EC700 One-Visit™ Production Clearcoat EC750 One-Visit™ Appearance Clearcoat	ECP1x A Chromatic Surfacer** ECS2x A Chromatic LV Sealer ECS6x A Chromatic Sealer EC700 One-Visit™ Production Clearcoat EC750 One-Visit™ Appearance Clearcoat
One Choice®	**One Choice®**
SXA1031 Aerosol Etch* (cut throughs only) SXA1050 Plastic Adhesion Primer*** SX1071 Etch Prime*** Plastic Prep System *** (SU4901, SUA4903) SX1005 Low VOC Wax and Grease Remover SWX350 H_2O-So-Clean	SXA1031 Aerosol Etch* (cut throughs only) SX1050 Plastic Adhesion Primer*** SX1057 Flexible 2K Surfacer SX1060 Rollable 2K Primer Surfacer Plastic Prep System *** (SU4901, SU4902, SU4903, SUA4903) SX1005 Low VOC Wax and Grease Remover SWX350 H_2O-So-Clean
Global	**Global**
D1002** DLV800X** D8170 D8188 D8126	D820*** D8101 D8126 D831*** D8150 D1002* D8152 D800X* D893 D8099** D894
Deltron®	**Deltron®**
DPLV305x NCP280* D8080** DCU2010 DC3010 DC4010 DC4125	DPS305x DC4000 D8080** DC4125 DCU2021 DX179x*** DCU2042 DPX801*** DCU2082 DPLF* DC3000 K36

**For optimum performance a 2K primer or sealer may be used . **For optimum performance a 2K sealer may be used .*
**** Must be primed or sealed.*

Envirobase®High Performance Waterborne Thinner Selection Guide

Below 30% Relative Humidity

TEMPERATURE

← 55°F	60°F	65°F	70°F	75°F	80°F	85°F	90°F	95°F	100° F + →
13ºC	15ºC	18ºC	21ºC	24ºC	27ºC	29ºC	32ºC	35ºC	38ºC

← T494 → | ← T595* →

Above 30% Relative Humidity

← T494 →

*** Note: Using T595 waterborne thinner with humidity levels above 30% can cause extremely slow flash and overall drying of the basecoat. Do not blend waterborne thinners as this will affect overall basecoat performance. Use either T494 or T595 depending on humidity.**

Health and Safety:

See Material Safety Data Sheet and Labels for additional safety information and handling instructions.

- The contents of this package may have to be blended with other components before the product can be used. Before opening the packages, be sure you understand the warning messages on the labels and MSDS of all the components, since the mixture will have the hazards of all its parts.
- Improper handling and use, for example, poor spray technique, inadequate engineering controls and/or lack of proper Personal Protective Equipment (PPE), may result in hazardous conditions or injury.
- Follow spray equipment manufacturer's instructions to prevent personal injury or fire.
- Provide adequate ventilation for health and fire hazard control.
- Follow company policy, product MSDS and respirator manufacturer's recommendations for selection and proper use of respiratory protection. Be sure employees are adequately trained on the safe use of respirators per company and regulatory requirements.
- Wear appropriate PPE such as eye and skin protection. In the event of injury, see first aid procedures on MSDS.
- Always observe all applicable precautions and follow good safety and hygiene practices.

Equipment Cleaning:

- Clean all mixing equipment immediately after use, preferably using a dedicated waterborne equipment-cleaning machine with a final rinse using Waterborne Thinner. Ensure all equipment is completely dry before storage or use.

Storage & Handling of Envirobase:

- Envirobase tinters, Envirobase mixed color & Waterborne Thinner should be stored in a cool, dry place away from sources of heat. During storage and transportation, temperature must be maintained at a minimum of +5°C or 41°F and a maximum of 49ºC or 120ºF. Avoid exposure to frost or freezing conditions.
- Envirobase should be mixed in clean, dry plastic containers and equipment. Do not use mixing vessels or spray equipment that contains solvent residues. Mixing vessels should ideally be plastic – if metal the container should be stainless steel or have an internal anticorrosion coating.
- Store waterborne & solvent borne wastes separately. A competent agent with appropriate certification must handle all waterborne wastes. Waste must be disposed of in accordance with all Federal, State, Provincial, and local laws and regulations.
- The Envirobase waterborne paint residues should be segregated from all other wastes and kept in a separate closed lined container. The Envirobase waterborne paint residues must be disposed of in accordance with all federal, state, provincial and local laws and regulations.

Technical Data

Theoretical coverage (RTS), giving 12.7μm (0.5 mil) dry film thickness, 274 - 640 sq. ft. per U.S. gal.

Percent solids by volume RTS 8.5 - 20.0%

RTS Combinations:	EHP	EHP : T494 / T595	EHP : T494 / T595	EHP : T494 / T595
Applicable Use Category	**Color Coating**	**Color Coating**	**Color Coating**	**Color Coating**
Ratio:	Packaged	1 : 10%	1 : 20%	1 : 30%
Density (g/L)	991 - 1204	992 - 1186	992 - 1171	992 - 1156
Density (lbs/gal)	8.27 - 10.05	8.28 - 9.90	8.28 - 9.77	8.28 - 9.65
VOC Actual (g/L)	47 - 120	44 - 111	43 - 103	41 - 97
VOC Actual (lbs/gal)	0.39 - 1.00	0.37 - 0.93	0.36 - 0.86	0.34 - 0.81
VOC Regulatory (g/L)	207 - 395	213 - 401	219 - 407	225 - 419
VOC Regulatory (lbs/gal)	1.73 - 3.30	1.78 - 3.35	1.83 - 3.40	1.88 - 3.50
Volatiles wt.%	60.42 - 84.97	63.42 - 86.29	66.01 - 87.44	68.26 - 88.40
Water wt.%	51.37 - 74.99	54.94 - 77.09	58.00 - 78.85	60.05 - 80.33
Exempt wt.%	0	0	0	0
Water vol.%	61.98 - 77.47	65.29 - 79.41	68.03 - 80.96	70.26 - 82.22
Exempt vol. %	0	0	0	0

RTS Combinations:	EHP : T494 / T595 : T588	EHP : T494 / T595 : T588	EHP : T494 / T595 : T588	T490 : T494 / T595
Applicable Use Category	**Color Coating**	**Color Coating**	**Color Coating**	**Uniform Finish Coating**
Ratio:	1 : 10% : 10%	1 : 20% : 10%	1 : 30% : 10%	4 : 1
Density (g/L)	998 -1170	999 - 1158	998 - 1146	992
Density (lbs/gal)	8.33 - 9.76	8.34 - 9.66	8.33 - 9.56	8.28
VOC Actual (g/L)	70 - 119	67 - 112	63 - 105	91
VOC Actual (lbs/gal)	0.58 - 0.99	0.56 - 0.94	0.53 - 0.88	0.76
VOC Regulatory (g/L)	252 - 359	256 - 370	261 - 373	380
VOC Regulatory (lbs/gal)	2.1 - 3. 0	2.14 - 3.09	2.18 - 3.11	3.17
Volatiles wt.%	61.4 - 80.5	64.0 - 82.0	66.2 - 83.3	85.7
Water wt.%	51.2 - 70.0	54.3 - 72.1	57.0 - 74.0	76.6
Exempt wt.%	0.0	0.0	0.0	0.0
Water vol.%	60.0 - 72.1	63.0 - 74.1	65.5 - 75.8	76.1
Exempt vol. %	0.0	0.0	0.0	0.0

EHP At A Glance

Envirobase High Performance Color

Mixing:

Envirobase High Performance Color	**1 part**
T494 / T595* Thinner	**10 - 30% by volume**

Note: Solid colors require a reduction of 10%. Metallic's require 20%. The translucent mid coat layer of a three stage color require 30% reduction as this layer is not designed to give opacity

***** For use in high heat, low humidity conditions only. See thinner selection guide on page 6 for additional information.

Additives:

T588 (optional activator)	10% by volume after reducing. After activation, additional thinner may be required to bring the color into the 23 - 28 second sprayable viscosity range.

Pot life:

Un-activated, 90 days stored in sealed plastic containers. Activated, 2 hours.	Hand-stir well before using. Do not shake mechanically.

Air Pressure:

	Color Coat	**Control Coat***
HVLP	Approx. 29 psi *	Approx. 17 psi *
Conventional	40 - 50 psi *	25 - 30 psi *

***Note**: Refer to DOX440 Gun Set Up Chart for specific manufactures recommendations on air pressure.

Application:

All Repairs	2 - 3 coats to coverage, plus control coat* …

Horizontal surfaces may require two control coats where vertical surfaces will generally only require one control coat. For HVLP, reduce the air pressure at the gun to 16 - 21 psi for the control coat. For conventional, reduce to 25 - 30 psi.

*Note: A control coat is not required for solid colors.

Between coats:	1 - 2 minutes or until dried to a matte finish
Final Flash-off:	When application is complete, apply the control coat and allow it to dry naturally. Force drying of the control coat is not necessary.
Recommended film build Per wet coat Dried film build per coat	 0.8 - 1.0 mils 0.1 - 0.20 mils

Dry Times:

Dust-free 20ºC / 68ºF:	2 - 4 minutes
Dry To Handle: 20ºC / 68ºF	Approximately 15 - 20 minutes
Dry to De-Nib 20ºC / 68ºF:	Approximately 15 - 20 minutes
Tape Time 20ºC / 68ºF:	5 minutes
Dry to Clear 20ºC / 68ºF:	15 minutes minimum
Overcoat with: *See compatibles clearcoats listed earlier in this bulletin*	Flash off until the entire surface is touch-dry and has a uniform matte appearance, or for 15 minutes*, whichever is longest.
Recoat	After 24 hours, 1 coat of Envirobase HP must be applied prior to the clearcoat application. The maximum recoat time is 48 hours.

*Temperature, humidity, air movement and film build affect dry times. The best results are achieved with increased temperature and air movement with minimal film builds.

Emergency Medical or Spill Control Information (412)434-4515; In Canada (514) 645-1320

Materials described are designed for application by professional, trained personnel using proper equipment and are not intended for sale to the general public. Products mentioned may be hazardous and should only be used according to directions, while observing precautions and warning statements listed on label. Statements and methods described are based upon the best information and practices known to PPG Industries. Procedures for applications mentioned are suggestions only and are not to be construed as representations or warranties as to performance, results, or fitness for any intended use, nor does PPG Industries warrant freedom from patent infringement in the use of any formula or process set forth herein.

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