ENVIROBASE®
HIGH PERFORMANCE

Product Information

ENVIROBASE® High Performance Waterborne Basecoat

Product Description

Envirobase High Performance is a premium waterborne color system for use in repair and repainting of motor vehicles. Industry leading color capability is easily achieved when applied as part of a two or three-stage basecoat/ clearcoat paint process. Mixed *Envirobase* High Performance color reproduces the original OEM solid, metallic, mica, or XIRALLIC® paint finish of virtually all OEM manufacturer's worldwide.

Envirobase High Performance products are engineered to reduce volatile organic compounds (VOC) and will exceed all of today's legislative VOC restrictions throughout the United States and Canada.

Envirobase High Performance waterborne color system is also capable of producing internal colors for under the hood as well as interior color repair. For additional information, see *Envirobase* product bulletins EB145 for internal color and EB511 for interior color.

Preparation of Substrate

Starting with original OE finishes or over recommended undercoats on new parts.

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-P1200 / US 500-600 grade paper.

Wash off residue and dry thoroughly before re-cleaning with appropriate waterborne substrate cleaner. The use of a tack rag is recommended.

- Before mixing, gently hand shake bottles of the *Envirobase* High Performance toners 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.

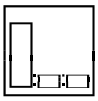
APPLICATION GUIDE:

Mixing Ratio:

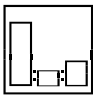
Envirobase High Performance Color T494/T595* Thinner	1 Part basecoat 10% by volume for solid color 20% by volume for metallic / pearl color 30% by volume for tinted mid-coat color

OR

Envirobase High Performance Color T492 Adjuster† T493 Modifier‡ (optional)	1 Part solid color 10% by volume of mixed color 5% by volume of mixed color



Envirobase High Performance Metallic / Pearl Color T492 Adjuster† T493 Modifier‡ (optional) T494/T595* Thinner	1 Part metallic / pearl color 10% by volume of mixed color 5% by volume of mixed color +10% by volume of mixed color



Envirobase High Performance Tinted Mid-Coat Color T492 Adjuster† T493 Modifier‡(optional) T494/T595* Thinner	1 Part mid-coat color 10% by volume of mixed color 5% by volume of mixed color +20% by volume of mixed color

* T595 is for use in high heat, low humidity conditions only. See thinner selection guide on page 8 for additional information.

†T492 Adjuster enhances the EHP basecoat system for leading edge parts such as bumpers and fascias. It will not affect color or potlife. DO NOT add more than 10%. Reduce with T494 as needed to obtain 23-28 seconds DIN4. Final reduction with T494 may vary from 0 - 30%.

‡T493 Modifier is designed to be used with T492 and provides EHP basecoat with the highest level of film integrity. It is recommended for vehicles that experience rough road conditions such as sustained driving off paved roads. It will not affect color however potlife is reduced to about 1 hour. Always use in conjunction with T492 and DO NOT exceed 5%. Reduce with T494 as needed to obtain 23-28 seconds DIN4. T494 may vary from 10% -40%.

Pot Life:

Un-activated, 90 days stored in sealed plastic containers.
Activated, pot life is 1 hour at 70°F (21°C).
Hand stir well before using. Do Not mechanically shake.

Always strain before use (nylon 125 micron is recommended).

Additives:

Reduce with T494 as needed to obtain 23-28 seconds DIN4 cup.

Spraygun Setup:

Fluid Tip:	1.2 - 1.4 mm or equivalent
Spray Viscosity:	23 - 28 seconds, DIN4 at 70°F (21°C)

Spray Pressure:

	Color Coat	**Control Coat**
HVLP at the air cap	§	§
Compliant at the spray gun	§	§

§Spray gun pressure will vary by manufacturer. Refer to DOX440 Waterborne Gun Setup Chart on ppgrefinish.com *Envirobase* / Technical Bulletins & Product Index tab for manufacturer's setup information.

Application:

All repairs: 2 - 3 coverage coats plus control coat¶

Horizontal surfaces may benefit from two control coats. Vertical surfaces may only require one control coat. Check vertical surfaces after first control coat and decide if a second control coat is needed.

¶A control coat is not required for solid colors.

Flash Off:
70°F (21°C)

Between Coats: 2 - 4 minutes with air dryers to achieve a matte finish

Final Flash off: After control coat, allow basecoat to dry naturally. Force drying of the control coat is not necessary.

Note: Use recommended air drying equipment, hand held blowers or wall mounted units. Do not use spray gun for dehydrating basecoats.

Note: 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.

APPLICATION GUIDE (cont'd):

Drying Times:

Dust-Free 70°F (21°C)	Each coat approximately 2 - 4 minutes
Dry to Handle 70°F (21°C)	Approximately 15 - 20 minutes

Dry to De-Nib: 70°F (21°C)	Approximately 15 - 20 minutes
Tape Time 70°F (21°C)	10 - 15 minutes
Dry to Clear 70°F (21°C)	15 minutes minimum

IR enhanced curing is a process that requires 2 - 4 minutes of IR on basecoat prior to clearcoat being applied. Refer to clearcoat P-Sheet for specific IR recommendations.

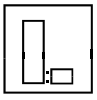
Overcoat/Recoat:

Overcoat with any premium compatible clearcoat. Flash off for 15 minutes or until the entire surface has a uniform matte appearance .

Denibbing:	Dry sand to remove minor dirt nibs with US 800 grit or finer
Recoat	After 24 hours, an additional coat of *Envirobase* High Performance basecoat must be applied prior to the clearcoat application. The maximum recoat time is 48 hours.

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.

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. Wet bed will appear blue when wet but dries translucent. Once dry, apply color.

* T595 is 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	
Mixed color	1 part	Mixed Color	1 part
T492 (optional)†	10%	T492 (optional)†	10%
T494/T595* Thinner	10%**	T494/T595* Thinner	20%**
T493 Modifier‡(optional)	5%	T493 Modifier‡(optional)	5%

†T492 Adjuster enhances the EHP basecoat system for leading edge parts such as bumpers and fascias. It will not affect color or potlife. DO NOT add more than 10%. Reduce with T494 as needed to obtain 23-28 seconds DIN4. Final reduction with T494 may vary from 0 - 30%.
* T595 is for use in high heat, low humidity conditions only. See thinner selection guide on page 8 for additional information.

**Note: Percentage by volume. If using T492 Adjuster, see page 2 for proper use.

‡T493 Modifier provides EHP basecoat with the highest level of film integrity. It is recommended for vehicles that experience rough road conditions such as sustained driving off paved roads. It will not affect color however potlife is reduced to about 1 hour. Always use in conjunction with T492 and DO NOT exceed 5%. Reduce with T494 as needed to obtain 23-28 seconds DIN4. T494 may vary from 10% -40%.

Pot Life:

Un-activated, 90 days stored in sealed plastic containers.
Activated, pot life is 1 hour at 70°F (21°C).
Hand stir well before using. Do Not mechanically shake.
Always strain before use (nylon 125 micron is recommended).

3 STAGE PEARL PROCESS (cont'd):

Spraygun Setup:

Fluid Tip:	1.2 - 1.4 mm or equivalent
Spray Viscosity:	23 - 28 seconds DIN4 at 70°F (21°C)

Spray Pressure:

	Color Coat	Control Coat
HVLP at the air cap	§	§
Compliant at the spray gun	§	§

§Spray gun pressure will vary by manufacturer. Refer to DOX440 Waterborne Gun Setup Chart on ppgrefinish.com *Envirobase* / Technical Bulletins & Product Index tab for manufacturer's setup information.

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 dehydrate basecoat as necessary.
- A control coat is not required for ground coat

Pearl Coat

- Reduce Pearl Coat to 30% with prior recommended options
- Determine number of coats based on color check panel
- Apply single light coats
- Flash off thoroughly between coats.
- Apply control coat and allow it to dry
- The pearl color layer is not designed to achieve opacity.

Flash Off:
70°F (21°C)

Flash off until uniformly matte in appearance.

Note: Use recommended air drying equipment, hand held blowers or wall mounted units. Do not use spray gun for dehydrating basecoats.

Drying Time:

Wait until ground coat is uniformly dry before applying pearl coat

Wait until pearl coat is uniformly dry before applying clearcoat, approximately 15 minutes.
Force drying of the control coat is not necessary

3 STAGE TINTED MID COAT PROCESS

Mixing Ratio:

Ground Coat		Tinted Mid Coat	
Color	1 part	Color	1 part
T492 (optional)†	10%	T492 (optional)†	10%
T494/T595* Thinner	20%**	T494/T595 Thinner	30%**
T493 Modifier‡(optional)	5%	T493 Modifier‡(optional)	5%

†T492 Adjuster enhances the EHP basecoat system for leading edge parts such as bumpers and fascias. It will not affect color or potlife. DO NOT add more than 10%. Reduce with T494 as needed to obtain 23-28 seconds DIN4. Final reduction with T494 may vary from 0 - 30%.
* T595 is for use in high heat, low humidity conditions only. See thinner selection guide on page 8 for additional information.

**Note: Percentage by volume. If using T492 Adjuster, see page 2 for proper use.

‡T493 Modifier provides EHP basecoat with the highest level of film integrity. It is recommended for vehicles that experience rough road conditions such as sustained driving off paved roads. It will not affect color however potlife is reduced to about 1 hour. Always use in conjunction with T492 and DO NOT exceed 5%. Reduce with T494 as needed to obtain 23-28 seconds DIN4. T494 may vary from 10% -40%.

Pot Life:

Un-activated, 90 days stored in sealed plastic containers.
Activated, pot life is 1 hour at 70°F (21°C).
Hand stir well before using. Do Not mechanically shake.

Always strain before use (nylon 125 micron is recommended).

Spraygun Setup:

Fluid Tip:	1.2 - 1.4 mm or equivalent
Spray Viscosity:	23 - 28 seconds DIN4 at 70°F (21°C)

Spray Pressure:

	Color Coat	Control Coat
HVLP at the air cap	§	§
Compliant at the spray gun	§	§

§Spray gun pressure will vary by manufacturer. Refer to DOX440 Waterborne Gun Setup Chart on ppgrefinish.com *Envirobase* / Technical Bulletins & Product Index tab for manufacturer's setup information.

3 STAGE TINTED MID COAT PROCESS (cont'd):

Application:	Ground Coat	Tinted Mid 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 dehydrate basecoat as necessary. • A control coat is not required for ground 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 midcoat layer.

Minor Repair Guidelines

Dirt nibs or other defects in the *Envirobase* High Performance paint film may be repaired as follows:

1. Allow the surface to completely flash-off.
2. Dry sand the defect with P1500/US 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 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
EPW115 Waterborne Speed Prime	EPW115 Waterborne Speed Prime
ECP1x A-Chromatic Surfacer[1]	ECP35 A-Chromatic Surfacer[1]
ECS2x A-Chromatic LV Sealer	ECS2x A-Chromatic LV Sealer
EC520 En-V® High Production Clearcoat	ECS8x A-Chromatic Sealer
EC530 *En-V* Performance Clearcoat	EC520 *En-V* High Production Clearcoat
EC550 *En-V* Ultra Gloss Clearcoat	EC530 *En-V* Performance Clearcoat
EC700 Series Clearcoats	EC550 *En-V* Ultra Gloss Clearcoat
EC800 Series Clearcoats	EC800 Series Clearcoats
ONECHOICE®	*OneChoice*
SXA103 Aerosol MULTI-PREP™	SX103 *Multi-Prep*
SXA1031 Aerosol Etch Prime - Gray[1] (cut throughs only)	SXA1031 Aerosol Etch Prime[1] (cut throughs only)
SXA1050 Aerosol Plastic Adhesion Promoter[1]	SX1050 Plastic Adhesion Promoter[1]
SX1071 ECOBASE™ 5.5 Etch Prime[1]	SWX350 *H_2O-So-Clean* Waterborne Pre Cleaner
SWX350 H_2O-SO-CLEAN® Waterborne Pre Cleaner	Plastic Prep System[2] (SU4901, SU4902, SU4903, SUA4903)
Plastic Prep System[2] (SU4901, SUA4903)	SU470LV 1K Compliant Adhesion Promoter[2]
SU470LV 1K Compliant Adhesion Promoter	SX1056 Flexible 2K Sealer
SUA470LV 1K Compliant Adhesion Promoter (Aerosol)	SX1057 Flexible 2K Surfacer
SU48XLV ADPRO MAX Serues Adhesion Promoters	

DELTRON®	*Deltron*		
DPLV Low VOC Epoxy Primer	DPS3055[1]	K38	DC5050
NCP280[1] Low VOC Primer Surfacer	DPS3105	DPX801[2]	DC7020
NCP450 Iso-Free Primer Surfacer	DPLV Epoxy	DC2000	DCU2002
DC4125 *CeramiClear*	DPLF[1]	DC4000	DCU2025
	NCP450	DC4125	DCU2042
	K36	DC5020	

[1] For optimum performance a 2K primer and sealer must be used.
[2] Must be primed or sealed.

TECHNICAL DATA

Theoretical coverage (RTS), giving 12.7µm (0.5 mils) dry film thickness, 324-786 4sq. ft. per US gallon.
Percent solids by volume RTS 10.1 - 24.5%

RTS Combinations	Color	Color : T494/T595	Color : T494/T595	Color : T494/T595
Applicable Use Category	Color Coating	Color Coating	Color Coating	Color Coating
Ratio	Packaged	1 : 10%	1 : 20%	1 : 30%
VOC Actual (g/L)	53-125	49-114	47-107	46-99
VOC Actual (lbs./ US gal.)	0.44-1.03	0.41-0.95	0.39-0.89	0.38-0.83
VOC Regulatory (g/L)	257-395	253-399	261-405	266-419
VOC Regulatory (lbs./US gal.)	2.11-3.30	2.15-3.33	2.18-3.38	2.22-3.50
Density (g/L)	993-1231	993-1209	993-1191	993-1177
Density (lbs./US gal.)	8.29-10.27	8.29-10.09	8.29-9.94	8.29-9.82
Volatiles wt. %	58.5-86.2	61.5-87.5	64.3-88.5	66.6-89.40
Water wt. %	50.7-81.0	54.2-82.5	57.3-83.8	59.9-84.9
Exempt wt. %	0.0	0.0	0.0	0.0
Water vol. %	62.5-81.1	65.7-82.6	68.4-83.9	70.6-85.0
Exempt vol. %	0.0	0.0	0.0	0.0
RTS Solids vol. %	13.1-27.0	11.9-24.5	10.9-22.5	10.1-20.8
RTS Solids wt. %	13.8-41.5	12.5-38.5	11.5-35.7	10.6-33.4

RTS Combinations	T490 : T494/T595	Color : T492 : T494/T595	Color : T492 : T494/T595
Applicable Use Category	Uniform Finish Coating	Color Coating	Color Coating
Ratio	4 : 1	1 : 10% : 10%	1 : 10% : 20%
VOC Actual (g/L)	90	49-108	47-101
VOC Actual (lbs./ US gal.)	0.75	0.41-0.90	0.39-0.84
VOC Regulatory (g/L)	379	255-388	259-393
VOC Regulatory (lbs./US gal.)	3.16	2.13-3.24	2.16-3.28
Density (g/L)	993	996-1194	996-1178
Density (lbs./US gal.)	8.29	8.31-9.96	8.31-9.83
Volatiles wt. %	85.7	63.2-87.2	65.6-88.1
Water wt. %	76.7	56.0-82.3	58.8-83.5
Exempt wt. %	0.0	0.0	0.0
Water vol. %	76.3	67.0-82.5	69.4-83.7
Exempt vol. %	0.0	0.0	0.0
RTS Solids vol. %	13.8	12.2-23.7	11.2-21.9
RTS Solids wt. %	14.3	12.8-36.8	11.9-34.4

TECHNICAL DATA CONTINUED

RTS Combinations	Color : T492 : T494/T595	Color : T492 : T493 : T494/ T595	T490 : T492 : T493 : T494/ T595
Applicable Use Category	Color Coating	Color Coating	Color Coating
Ratio	1 : 10% : 30%	1 : 10% : 5% : 10%	1 : 10% : 5% : 20%
VOC Actual (g/L)	44-95	61-117	59-110
VOC Actual (lbs./ US gal.)	0.37-0.79	0.51-0.98	0.49-0.92
VOC Regulatory (g/L)	262-393	268-385	272-388
VOC Regulatory (lbs./US gal.)	2.19-3.28	2.24-3.21	2.27-3.24
Density (g/L)	996-1165	998-1188	998-1173
Density (lbs./US gal.)	8.31-9.72	8.33-9.91	8.33-9.79
Volatiles wt. %	67.7-89.0	62.1-84.9	64.5-86.0
Water wt. %	61.2-84.5	54.0-78.8	56.8-80.2
Exempt wt. %	0.0	0.0	0.0
Water vol. %	71.4-84.5	64.3-79.2	66.8-80.6
Exempt vol. %	0.0	0.0	0.0
RTS Solids vol. %	10.4-20.3	14.1-25.2	13.0-23.3
RTS Solids wt. %	11.0-32.2	15.1-37.9	14.0-35.5

RTS Combinations	T490 : T492 : T493 : T494/ T595	Color : T492	Color : T492 : T493
Applicable Use Category	Color Coating	Color Coating	Color Coating
Ratio	1 : 10% : 5% : 30%	1 : 10%	1 : 10% : 5%
VOC Actual (g/L)	56-104	52-116	65-126
VOC Actual (lbs./ US gal.)	0.47-0.87	0.43-0.97	0.54-1.05
VOC Regulatory (g/L)	276-389	252-333	265-337
VOC Regulatory (lbs./US gal.)	2.30-3.25	2.10-2.78	2.21-2.81
Density (g/L)	998-1161	996-1212	998-1212
Density (lbs./US gal.)	8.33-9.69	8.31-10.11	8.33-10.05
Volatiles wt. %	66.6-87.0	60.4-86.0	59.4-83.6
Water wt. %	59.2-81.4	52.9-80.9	50.9-77.1
Exempt wt. %	0.0	0.0	0.0
Water vol. %	68.9-81.8	64.2-81.1	61.4-77.6
Exempt vol. %	0.0	0.0	0.0
RTS Solids vol. %	12.1-21.7	13.3-25.9	15.3-27.4
RTS Solids wt. %	13.0-33.4	14.0-39.6	16.4-40.6

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+
13°C	15°D	18°C	21°C	24°C	27°C	29°C	32°C	35°C	38°C+
← 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 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 SDS 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 SDS 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 SDS.
- 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* High Performance

- *Envirobase* High Performance tinters, *Envirobase* High Performance 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 41°F or +5°C or and a maximum of 120°F or 49°C. Avoid exposure to frost or freezing conditions.
- *Envirobase* High Performance 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.
- Blended to spray basecoat color with T493 Modifier has a flash point above 200°F and may be disposed in the waterborne waste stream intended for basecoat color (without activator). The waste disposal facility should be informed that the waste stream contains isocyanates. T493 Modifier handled alone should be disposed in the solvent borne waste stream.
- The *Envirobase* High performance waterborne paint residues should be segregated from all other wastes and kept in a separate closed lined container. The *Envirobase* High Performance waterborne paint residues must be disposed or in accordance with all Federal, State, Provincial and local laws and regulations.

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

We protect and beautify the world™

PPG Automotive Refinish
19699 Progress Drive
Strongsville, OH 44149
800.647.6050

PPG Canada Inc.
2301 Royal Windsor Drive, Unit #6
Mississauga, Ontario L5J 1K5
888.310.4762

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