



RAPTOR TINTABLE



TECHNICAL DATA SHEET & PROCESS GUIDE

BED LINER AND PROTECTIVE COATING

U-POL RAPTOR Tough and Tintable Protective Coating is a 2K polyurethane coating that provides surfaces with a protective barrier that can withstand the toughest situations. RAPTOR Black and White are also available.

FEATURES

CUSTOMIZABLE

Tint RAPTOR to match ANY Color, even white!

DURABLE

Provides a tough scratch and stain resistant surface.

Protects against rust and corrosion.

UV RESISTANT

Delivers a high level of fade resistance.

WATER RESISTANT

Provides a water resistant finish, keeping moisture out and reducing rust.

RESISTANT

Resistant to a wide range of chemicals including fuels, hydraulic oils, animal urine, salt water and more.

QUICK & EASY TO USE

Easy as Fill-Shake-Shoot.

Provides excellent adhesion across many substrates.

Easy to clean - simply hose off.

Can be applied with U-POL Application Gun, HVLP gun, roller or brush.



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CERTIFICATES

• FIRE RESISTANCE

RAPTOR has passed flammability testing for motor vehicles according to the test methods FMVSS 302, ISO 3795 & BS AU 169A.

• SLIP RESISTANCE

When used with RAPTOR Traction Additive it produces a finish meeting BS7976-2.

SUBSTRATES AND PREPARATION

- | | | | | |
|-------------------|------------------|---------------------|--------------|-------------|
| Substrates | • Original Paint | • Galvanized* | • Fiberglass | • E-coat* |
| | • Aluminum* | • Polyester Fillers | • GRP | • Concrete* |
| | • Bare Metal* | • Rigid Plastic* | • SMC | • Wood* |

* Some substrates require additional surface preparation before applying RAPTOR. See Substrate Preparation section for details.



Substrate Preparation

To achieve best results with RAPTOR, good preparation is essential.

1. Remove all loose material and any rust from the surface to be coated.
2. Clean and degrease the surface.
3. Abrade the surface with the required grit sand paper (see below).
4. Re-clean the surface.
5. For hard to reach areas, like internal corners, etc., coat first with a suitable adhesion promoter, like GRIP#4 Universal Adhesion Promoter, for optimal adhesion.

* Aluminum, bare metal, and galvanized: Abrade with: Bare metal 80-180; Aluminum/Galvanized 120-180

Localized rub-thrus: prime with an etch primer, such as two coats of U-POL ACID#8.

Large exposed areas of bare metal: Full 2K primer system required for optimum adhesion and corrosion resistance.

* Rigid Plastic (ABF, SMC) and fiberglass: Abrade with 120-180. Clean and degrease.

* Flexible Plastic (TPO, EDPM, & PP): Abrade with 180-320 grit. Clean and degrease. An adhesion promoter is required for proper adhesion. U-POL GRIP#4 is recommended.

*****Polyethylene, often found on ATVs, is a finicky material that has adhesion issues with most coatings. RAPTOR does not adhere to polyethylene, even with the use of adhesion promoter.*****

* OEM E-Coat: Scuff the surface with an coarse abrasive pad then clean and degrease.

* Wood: RAPTOR can be applied directly to stable wood.

* Concrete: For best results, clean the surface and remove dust. Sealing is not required. If you do seal with proprietary concrete sealer, the surface must be sanded again before applying RAPTOR.



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MIXING



Mixing Ratio

As simple as
FILL - SHAKE - SHOOT



	U-POL Application Gun	HVLP Gravity Gun
RAPTOR : Hardener	3:1	3:1
Tint	Up to 10% depending on color*	Up to 10% depending on color*
U-POL SYSTEM 20 Fast Urethane Reducers <i>Use only Urethane Reducers</i>	Ready to use - no reducer needed	Reduce up to a maximum of 15% to reduce the texture and for about 25% more coverage*

*Addition of reducer will affect the product VOC.

- * For tinting, typically 5% color is required for good opacity. When tinting above 5%, product will need to be mixed out of the bottle in a suitable mixing cup. For best color control, add color by weight.
- * For best results, use the solvent based toners from basecoat mixing systems. Ask your paint supplier to leave out the binders for best pigment density. RAPTOR can also be tinted with solvent based basecoats and solvent based 2K solid color isocyanate cured paints. Where 2K paints are used this will also need to be activated before use. Do not use waterbased systems to tint RAPTOR.

Mixing by weight

Grams	Coating (A)	Hardener (B)	Color (5%)
1000g	777g	223g	50g
500g	388g	112g	25g

Pot life of RAPTOR when activated is 60 minutes at 68°F (20°C).

Use of an accelerator, like U-POL Paint Rocket UP0735, is optional.

Only mix one bottle of RAPTOR at a time. Clean gun between mixes.

Tighten cap carefully. Overtightening the cap may cause the cap to split.



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2K ISOCYANATE HARDENER

- Specially designed to provide optimum results independent of climatic conditions and size of repair.
- RAPTOR hardener must not be used on its own. It can only be used with RAPTOR coating.



Shelf Life 12 months in unopened containers. Lids must be replaced after every use.
Storage Temperature 41°F (5°C) - 77°F (25°C)

APPLICATION

U-POL Application Gun (UP0726 or UP4880) Application

1. Remove cap from RAPTOR bottle with the mixed RAPTOR.
2. Attach the RAPTOR bottle to the U-POL Application Gun (UP0726) or the U-POL Professional Application Gun (UP4880).
3. Adjust the air pressure to 40-60 PSI.
4. Apply to the prepared surface with an even sweeping motion to obtain the desired texture.
5. If applying additional coats allow to flash off for 60 minutes between coats.

U-POL recommends that you spray a test panel with RAPTOR first to ensure the desired texture is achieved.

How to create common textures with a U-POL UP0726 Schutz Gun:

1. Standard texture through Schutz Gun:

- Ø 60 PSI
- Ø Distance from object: 1.5 foot
- Ø 2 coats with an even sweeping motion



2. Coarse texture with U-POL Application Gun:

- Ø Mix RAPTOR and allow to stand for 10-minutes
- Ø 45 PSI
- Ø Distance from object: 1.5 foot
- Ø 2 coats: 1st with an even sweeping motion
2nd dropping the coat over the first





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How to create common textures with a HVLP gun:

3. Fine texture with HVLP gravity fed gun, 1.6-2.0mm

- Ø Add 15% urethane reducer
- Ø 29 PSI
- Ø Distance from object: > 0.5 foot
- Ø 2 coats: 1st coat: even wet coat
2nd coat: reduce pressure and material flow to achieve a fine mist



4. Standard texture with HVLP gravity fed gun, 1.6-2.0mm

- Ø Add 15% urethane reducer
- Ø 29 PSI
- Ø Distance from object: > 0.5 foot
- Ø 1st and 2nd coats applied as even wet coats



The above specifications are based on our experience with RAPTOR and represent only a few examples of the types of textures that can be achieved. It is recommended that a trial application is made to fine tune the finish before applying onto the finished object.

Rolling RAPTOR

1. Pour mixed RAPTOR into a suitable paint tray.
 2. Cut in all corners and hard to reach areas with a brush.
 3. Apply using an open textured roller.
 4. Load roller with the product and apply slowly using medium pressure.
- * Rolling RAPTOR creates a lower build than spraying RAPTOR. Additional coats will be necessary. RAPTOR requires a 60 minute flash off period between coats.

Do not use RAPTOR in extreme cold or hot temperatures.
Ideal application temperature is 68°F (20°C) with humidity of less than 60%.



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Coats

Build / microns

As applied using U-POL
Application Gun (UP0726)

Applying 2 medium coats of RAPTOR is recommended.

1 Coat: 230 μ (9.0 MILs) 2 Coats: 475 μ (18.7 MILs)

All measurements are approximate and are dependent on the application method. See document "Indicative Consumption" for a variety of applications available from www.u-pol.com.



Flash-off / min @ 68°F (20°C)

Between coats

Wait 60 minutes between coats.

IMPORTANT! Do not place heavy loads on the surface until RAPTOR is fully cured. See dry times below.



Drying Times

Touch Dry @ 68°F (20°C)

Less than 1 hour

Through Dry @ 68°F (20°C)

5-7 days

- * Reducing flash off time, excessive film build, and/or reduced temperatures will alter drying time. Do not allow RAPTOR to come in contact with water for at least 72 hours.
- * Higher temperatures will result in shorter flash time, and colder temperatures will require a longer flash time. Higher film builds will extend the final cure time.

Baking

RAPTOR can be baked for 30 minutes @ 140°F (60°C). Baking will speed up the initial cure, but it is still recommended waiting 7 days for regular use.

I.R. Cure

I.R. curing is not recommended.



Over Painting

RAPTOR can be overpainted with most modern paint systems. When overpainting, prep the surface as follows:

1. Let sprayed RAPTOR dry for 24 hours.
2. Abrade with a fine abrasive pad.
3. Clean and degrease.

Adding RAPTOR Traction Anti-Slip Granules

See RAPTOR Traction SOP.



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PROPERTIES



Data

Flash point -0.4⁰F (-18⁰C)
 Solid content Approx. 57 %
 Specific gravity Approx. 9.18 lb/gal US (1120 g/l)

Chemical Resistance

- Diesel: No effect
- Petrol: Resistant to splashes
- Xylene: Resistant to splashes
- Hydraulic Oil: No effect
- NaOH: No effect
- Bleach: No effect
- Alcohol: No effect
- Urine: No effect

For further information see document entitled "ASTM D1308" available on www.u-pol.com for resistance to household chemicals.

Dielectric breakdown 10.3 kV/mm (262 V/Mil) ASTM D 149

Temperature Resistance -0.4⁰F to 212⁰F (-18⁰C to 100⁰C)



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STORAGE & VOC INFORMATION



Shelf Life

2 years from date of manufacture in sealed original containers.

Storage

RAPTOR should be stored in cool, dry conditions in the original containers.

Equipment Cleaning

Clean spray gun between mixes. All equipment should be thoroughly washed with acetone immediately after use.



VOC Information

The EU limit for this product (product category: IIB(e) in ready to use form is 840 g/liter. The VOC content of this product in ready to use form is 479 g/liter.

National Rule RAPTOR Tintable 4L Kit

As Received	Regulatory:	293g/l (2.4 lbs/gal)
	Actual:	218g/l (1.8 lbs/gal)
As Applied	Regulatory:	389g/l (3.2 lbs/gal)
	Actual:	314g/l (2.6 lbs/gal)

2.6 VOC RAPTOR Tintable 4L Kit

As Received	Regulatory:	293g/l (2.4 lbs/gal)
	Actual:	218g/l (1.8 lbs/gal)
As Applied	Regulatory:	285g/l (2.4 lbs/gal)
	Actual:	193g/l (1.6 lbs/gal)

1.7 VOC RAPTOR Tintable 4L Kit

As Received	Regulatory:	203g/l (1.7 lbs/gal)
	Actual:	133g/l (1.1 lbs/gal)
As Applied	Regulatory:	179g/l (1.5 lbs/gal)
	Actual:	105g/l (0.9 lbs/gal)



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Frequently Asked Questions

Preparation

- Q. Can RAPTOR be applied on top of a basecoat?**
- A. RAPTOR can be applied on top of a basecoat. The basecoat must be fully cured and properly prepared and sanded before applying RAPTOR.
- Q. Can RAPTOR be applied on top of a powder coat?**
- A. Yes, RAPTOR can be applied on top of a properly prepared and sanded powder coat.
- Q. Can you use automotive paint tape with RAPTOR?**
- A. Yes, you can use automotive tape with RAPTOR. Wait between 15-20 minutes after applying RAPTOR before removing the tape.

Technical Properties

- Q. Can RAPTOR be reduced?**
- A. Yes, RAPTOR can be reduced up to 15%. When reducing RAPTOR, use a urethane based reducer.
- Q. What is the gloss level of RAPTOR?**
- A. The gloss level of Black RAPTOR is approximately 10 gloss units, or a satin finish.
- Q. What is the Shore Hardness of RAPTOR?**
- A. The Shore D value for fully cured RAPTOR is 85.
- Q. Does RAPTOR contain any rubber?**
- A. No, there is no rubber in RAPTOR. RAPTOR is a thick polyurethane coating, which gives it great UV stability and impact resistance without the use of additives such as rubber.
- Q. Is RAPTOR isocyanate free?**
- A. No, RAPTOR utilizes an isocyanate hardener.
- Q. What is the maximum temperature after applied?**
- A. The maximum temperature after application is 185°F.



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Tinting

Q. What can RAPTOR be tinted with?

A. For best results, use solvent based acrylic basecoat toners (ask your paint supplier to leave out the binders). NOTE: Acrylic basecoat toners tend to have high color strength so use sparingly (less than 10% tint by volume). RAPTOR is compatible with any urethane based color, including 2K acrylic solid color and mixed acrylic basecoats, and can be added up to 10% by volume. RAPTOR cannot be used with water based, polyester, or enamel paints.

Q. I don't need a shiny application. How can I get a dull finish?

A. There are proprietary matting agents available in the U.S. for other 2K products, which are suitable for use in RAPTOR.

Q. Does the milk color of RAPTOR lighten up the tint color? How can I get a brilliant color?

A. For best color match results, Tintable RAPTOR requires a urethane single stage color. If you choose to use basecoat, ask your paint supplier to leave the binder out of the formulation so it is pure pigment. The final color will appear slightly lighter than the base color. Once mixed, check the color of the tinted system before spraying and adjust if critical.

Q. How do you change the color after an incorrect color has been sprayed?

A. If the colors are close, reapply with the correct shade of RAPTOR. If the colors are not close, strip back the original RAPTOR and reapply.



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PRODUCT CODES

Product Code	UP Number	Description	Case Qty
RLT/S4	UP0821	RAPTOR Tintable 4L Kit	1
RLT/SV4	UP0821V	RAPTOR Tintable 2.6 VOC 4L Kit	1
RLT/S17-4	UP0829	RAPTOR Tintable 1.7 VOC 4L Kit	1
RLT/S1	UP4802	RAPTOR Tintable 1L Kit	6
RLT/SV1	UP4804	RAPTOR Tintable 2.6 VOC 1L Kit	6
RLT/5	UP4851	RAPTOR Tintable 5L Pail NR/2.6 VOC	2
RLHV/5	UP4824	RAPTOR Hardener 5L Tin 2.6 VOC	2
OWNRLTV/200	UP4871	RAPTOR Tintable 200L Drum	1
OWNRLT17/200	UP4873	RAPTOR 1.7 VOC Tintable 200L Drum	1
RLTR/SM	UP4800	RAPTOR Traction 200g Packet	20
GUN/1	UP0726	U-POL Application Gun	5
UP4880	UP4880	U-POL Professional Vari-Nozzle Application Gun	6
GRIP/AL	UP0799	GRIP#4 450ml Aerosol	6
ACID/AL	UP0741	ACID#8 Etch Primer 450ml Aerosol	6
ACID/1	UP0776	ACID#8 Etch Primer 1L	6
ROC/S	UP0735	Rocket Paint Accelerator 250ml Bottle	10



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IMPORTANT: FOR PROFESSIONAL USE ONLY. Read full instructions before use.

This product contains hazardous materials and therefore appropriate personal protective equipment should always be used. Please refer to the label and consult the material safety data sheet for full handling instructions and personal protection information. U-POL disclaims any liability where the user does not wear the recommended personal protective equipment. The above data is for information only and may change without prior notice. It is the Buyers responsibility to ensure the suitability of the products for their own use and check the up-to-datedness of this information. The recommendation of use of our products and application are based on our knowledge and experience. Please refer to the label and consult the material safety data sheet for full handling instructions and personal protection information. These are available via your local distributor or via the U-POL website at WWW.U-POL.COM. U-POL is not responsible for the results obtained by others over whose methods we have no control and thereof U-POL is not liable for consequential or incidental damages including loss of profits.

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