



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.

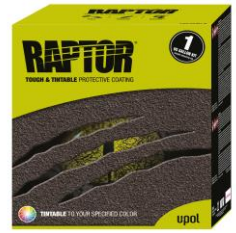
Provides excellent adhesion across many substrates.

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 ASTM E303-93.

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 RAPTOR Adhesion Promoter Aerosol, 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 RAPTOR Acid Etch Primer Aerosol.
Large exposed areas of bare metal: Full 2K primer system required for optimum adhesion and corrosion resistance. RAPTOR Anti-Corrosive Epoxy Primer is recommended.
- * 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. RAPTOR Adhesion Promoter Aerosol 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 tinting performance, use RAPTOR Color. Add one color pouch (1.5 Fl.Oz/45ml) per bottle of RAPTOR. Use scissors to snip off the corner of the sachet and add full contents directly into the RAPTOR Tintable base bottle. Measure 8.4Fl.Oz/250ml of RAPTOR hardener and add into RAPTOR Tintable base bottle as well. Replace cap and shake for 2-minutes. Check the color before spraying.

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 SYSTEM 20 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 RAPTOR Application Gun (UP0726) or the RAPTOR Professional Vari-Nozzle 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 RAPTOR Application Gun (UP4880):

1. Standard texture through RAPTOR Application Gun:

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



2. Coarse texture with RAPTOR 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 | -0.4°F (-18°C) |
| 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 | -0.4°F to 212°F (-18°C to 100°C) |
|------------------------|----------------------------------|



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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

National Rule RAPTOR Tintable

| | | |
|-------------|-------------|-----------------------|
| As Received | Regulatory: | 289 g/l (2.4 lbs/gal) |
| | Actual: | 216 g/l (1.8 lbs/gal) |
| As Applied | Regulatory: | 386 g/l (3.2 lbs/gal) |
| | Actual: | 313g/l (2.6 lbs/gal) |

2.6 VOC RAPTOR Tintable

| | | |
|-------------|-------------|-----------------------|
| As Received | Regulatory: | 289 g/l (2.4 lbs/gal) |
| | Actual: | 216 g/l (1.8 lbs/gal) |
| As Applied | Regulatory: | 282 g/l (2.3 lbs/gal) |
| | Actual: | 193g/l (1.6 lbs/gal) |

1.7 VOC RAPTOR Tintable

| | | |
|-------------|-------------|----------------------|
| 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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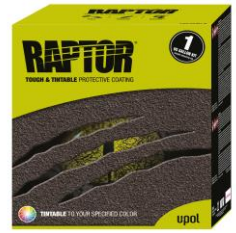
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PRODUCT CODES

| Product Code | UP Number | Description | Case Qty |
|--------------|-----------|---|----------|
| RLT/S1 | UP4802 | RAPTOR Tintable National Rule 1 US QT Kit | 6 |
| RLT/SV1 | UP4804 | RAPTOR Tintable 2.6 VOC 1 US QT Kit | 6 |
| RLT/S4 | UP0821 | RAPTOR Tintable National Rule 1 US GAL Kit | 1 |
| RLT/SV4 | UP0821V | RAPTOR Tintable 2.6 VOC 1 US GAL Kit | 1 |
| RLT/S17-4 | UP0829 | RAPTOR Tintable 1.7 VOC 1 US GAL Kit | 1 |
| RLT/5 | UP4851 | RAPTOR Tintable 5L Pail National Rule/2.6 VOC | 2 |
| RLHV/5 | UP4824 | RAPTOR Hardener 5L Tin 2.6 VOC | 2 |
| RLTV/200 | UP4871 | RAPTOR Tintable 200L Drum | 1 |
| RLTR/SM | UP4800 | RAPTOR Traction 200g Packet | 20 |
| UP4830 | UP4830 | RAPTOR Anti-Corrosive Epoxy Primer 5L Kit | 1 |
| UP4831 | UP4831 | RAPTOR Anti-Corrosive Epoxy Primer 1L Kit | 8 |
| UP5023 | UP5023 | RAPTOR Acid Etch Primer 450ml Aerosol | 6 |
| UP5024 | UP5024 | RAPTOR Adhesion Promoter 450ml Aerosol | 6 |
| UP4854 | UP4854 | RAPTOR Color White 45ml Pouch | 20 |
| UP4855 | UP4855 | RAPTOR Color Light Gray 45ml Pouch | 20 |
| UP4856 | UP4856 | RAPTOR Color Basalt Gray 45ml Pouch | 20 |
| UP4857 | UP4857 | RAPTOR Color Beige 45ml Pouch | 20 |
| UP4858 | UP4858 | RAPTOR Color Light Brown 45ml Pouch | 20 |
| UP4859 | UP4859 | RAPTOR Color Sepia Brown 45ml Pouch | 20 |
| UP4860 | UP4860 | RAPTOR Color Blue 45ml Pouch | 20 |
| UP4861 | UP4861 | RAPTOR Color Navy Blue 45ml Pouch | 20 |
| UP4862 | UP4862 | RAPTOR Color Light Green 45ml Pouch | 20 |
| UP4863 | UP4863 | RAPTOR Color Green 45ml Pouch | 20 |
| UP4864 | UP4864 | RAPTOR Color Pine Green 45ml Pouch | 20 |
| UP4865 | UP4865 | RAPTOR Color Olive Green 45ml Pouch | 20 |
| UP4866 | UP4866 | RAPTOR Color Yellow 45ml Pouch | 20 |
| UP4867 | UP4867 | RAPTOR Color Orange 45ml Pouch | 20 |
| UP4868 | UP4868 | RAPTOR Color Flame Red 45ml Pouch | 20 |
| UP5028 | UP5028 | RAPTOR Roller and Tray Kit | 6 |
| GUN/1 | UP0726 | RAPTOR Application Gun | 5 |
| UP4880 | UP4880 | RAPTOR Professional Vari-Nozzle Application Gun | 6 |
| GUNGHV/17 | UP0326 | MAXIMUM HVLP Gravity Gun 1.7mm Tip | 1 |
| ACID/1 | UP0776 | ACID#8 Etch Primer 1L | 6 |
| ROC/S | UP0735 | SYSTEM 20 Rocket Paint Accelerator 250ml | 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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