



## TECHNICAL DATA SHEET & PROCESS GUIDE

### TOUGH PROTECTIVE COATING

U-POL's RAPTOR Tough and Tintable Protective Coating is a 2K polyurethane coating that provides surfaces with a protective barrier.

### FEATURES

- **TINTABLE**  
Can be tinted to match required colour.  
Also available in black.
- **DURABLE**  
Provides tough mechanical damage and stain resistant surface.  
Protects against rust and corrosion.
- **U.V. RESISTANT**  
Delivers a high level of fade resistance.
- **WATER RESISTANT**  
Provides a water resistant finish, keeping moisture out and reducing rust.
- **RESISTANT**  
Resistant against fuels, hydraulic oils, animal urine, salt water and more.
- **QUICK & EASY TO USE**  
Easy as Fill-Shake-Shoot.  
Provides excellent adhesion across many substrates.  
Can be applied with Schutz gun, HVLP gun, roller or brush.

### 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.



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#### SUBSTRATES AND PREPARATION

##### Substrates

- Original Paint
  - Aluminium\*
  - Bare Metal\*
  - Galvanized\*
  - Polyester Fillers
  - Most Plastics\*
  - Fiberglass
  - GRP
  - SMC
  - E-coat\*
  - Concrete\*
  - 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 P80 -P180 grit sand paper.
4. Re-clean the surface.
  - \* Aluminium, bare metal, and galvanized:  
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: after abrading, clean and degrease then use an adhesion promoter, such as U-POL's GRIP#4 or System 2003.
  - \* Wood: RAPTOR can go direct to stable wood.
  - \* Concrete: for best results, clean the surface and remove dust. Seal first with proprietary concrete sealer before applying RAPTOR.
  - \* OEM E-Coat: scuff the surface with an coarse abrasive pad then clean and degrease.
5. For hard to reach areas such as internal corners etc. coat first with a suitable adhesion promoter for optimal adhesion.



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#### MIXING



#### Mixing Ratio

As simple as  
FILL - SHAKE - SHOOT®



	SCHUTZ Gun	HVLP Gravity Gun
<b>RAPTOR : Hardener</b>	3:1	3:1
<b>Colour</b>	Up to 10% depending on colour*	Up to 10% depending on colour*
<b>U-POL SYSTEM 20 Fast Thinners</b>	Ready to use, no thinner needed	Up to 15-20% maximum to reduce the texture. About 25% more coverage*. *Addition of thinner/reducer will affect the product VOC.

\* For tinting typically 5% colour 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 colour control add colour by weight.

For best results use the solvent based toners from basecoat mixing systems. RAPTOR can also be tinted with solvent based basecoats and solvent based 2K solid colour 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)	Colour (5%)
1000g	777g	223g	50g
500g	388g	112g	25g

Simply FILL the RAPTOR coating bottle with 250ml of hardener, replace cap and SHAKE contents vigorously for at least 2 minutes, add colour and SHAKE contents vigorously for at least 2-minutes. SHOOT.

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

Use of an accelerator is not required.

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

Do not overtighten cap as this may cause the cap to split.

#### 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

#### Storage Temperature

12 months in unopened containers. Lids must be replaced after every use.

+5°C (41°F) - +25°C (77°F)



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#### APPLICATION

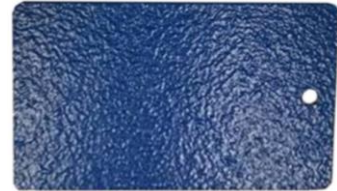
##### Standard Schutz Application

1. Remove cap from RAPTOR bottle with the mixed RAPTOR.
2. Attach the RAPTOR bottle to the U-POL SCHUTZ GUN.
3. Adjust the air pressure to 2.75 - 4.10 bar (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 achieve common textures with a U-POL Schutz Gun;

1. Standard texture through Schutz Gun:
  - Ø 4 Bar (60 PSI)
  - Ø Distance from object 50cm (1.5 foot)
  - Ø 2 coats with an even sweeping motion



2. Coarse texture through Schutz Gun:
  - Ø Mix RAPTOR and allow to stand for 10-minutes
  - Ø 3 Bar (45 PSI)
  - Ø Distance from object 50cm (1.5 foot)
  - Ø 2 coats - 1 even sweeping motion, 2nd dropping the coat over the first



##### How to achieve common textures with a HVLP gun;

3. Fine texture through HVLP gravity fed gun, 1.6-2.0mm
  - Ø Add 15% reducer
  - Ø 2 Bar (29 PSI)
  - Ø Distance from object 20cm (>0.5 foot)
  - Ø 1st coat even wet coat, second coat reduce pressure and material flow to achieve a fine mist



4. Standard texture through HVLP gravity fed gun, 1.6-2.0mm
  - Ø Add 15% reducer
  - Ø 2 Bar (29 PSI)
  - Ø Distance from object 20cm (>0.5 foot)
  - Ø 1st and second coats applied as even wet coats



The above recommendations 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.



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#### 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.
5. Rolling on RAPTOR results in a lower build. Additional coats will be necessary. When applying additional coats, observe 60 minute flash off period between coats.

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



#### Coats

Build / microns  
As applied using SCHUTZ Gun

U-POL recommends applying 2 medium coats of RAPTOR.

1 Coat: 230µ (9.0 Mils)    2 Coats: 475µ (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](http://www.u-pol.com).



#### Flash-off / min @ 20°C (68°F)

Between coats

60 minutes

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



#### Drying Times

Touch Dry @ 20°C (68°F)                      Less than 1 hour

Through Dry @ 20°C (68°F)                      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-hrs.

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 @ 60°C (140°F). 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	-18°C (-0.4°F)
Solid content without thinner	Approx. 57 %
Specific weight	Approx. 1120g/l (9.18lb/gal US)
Chemical Resistance	<ul style="list-style-type: none"> <li>• Diesel: No effect</li> <li>• Petrol: Surface softening</li> <li>• Xylene: Surface softening</li> <li>• Hydraulic Oil: No effect</li> <li>• NaOH: No effect</li> <li>• Bleach: No effect</li> <li>• Alcohol: No effect</li> <li>• Horse urine: No effect</li> </ul>
Dielectric breakdown	10.3 kV/mm (262 V/Mil) ASTM D 149
Temperature Resistance	-18°C to 100°C (-0.4°F to 212°F)

### STORAGE & VOC INFORMATION



#### Shelf Life

2 years from date of manufacture in sealed original containers.

#### Storage

Should be stored in cool, dry conditions in the original containers.

#### Equipment Cleaning

Clean spray gun in-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 840g/litre.

The VOC content of this product in ready to use form is 479g/litre.

#### UP0821 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)

#### UP0821V 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)

#### UP0825 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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Order Code	UP Number	Description
RLT/1	UP0823	RAPTOR Tintable 750ml
RLT/S4	UP0821	RAPTOR Tintable 4L Kit
RLT/SV4	UP0821V	RAPTOR Tintable 2.6 VOC 4L Kit
RLT/S17-4	UP0829	RAPTOR Tintable 1.7 VOC 4L Kit
OWNRLTV/200	OWNRLTV/200	RAPTOR Tintable 200L Drum
RLH/1	UP0826	RAPTOR Hardener 1L
RLHV/1	UP0827	RAPTOR Hardener 2.6 VOC 1L
RLH17/1	UP0828	RAPTOR Hardener 1.7 VOC 1L
GUN/1	UP0726	Schutz Gun
ACID/AL	UP0741	ACID#8 Etch Primer 450ml Aerosol
ACIDV/AL	UP0741V	ACID#8 Etch Primer VOC 450ml Aerosol
ACID/1	UP0776	ACID#8 Etch Primer 1L
GRIP/AL	UP0799	GRIP#4 450ml Aerosol
S2003/1	UP2031	System 2003 Plastic Primer 1L
S2003/AL	UP2032	System 2003 Plastic Primer 450ml Aerosol
RLTR/SM	UP4800	RAPTOR TRACTION 200g Sachet

**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 stockist 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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