QUESTIONS AND ANSWERS
CLEARCOATS AND PRIMERS

What is SYSTEM 20?
SYSTEM 20 is a line from U-POL of European style Primers, Clearcoats, Reducers, Wax / Grease Removers and Hardeners. U-POL manufactures all of these products at their factory in Wellingborough, England to exacting standards using only the finest European raw materials.

How does SYSTEM 20 improve my inventory levels?
SYSTEM 20 utilizes the same set of hardeners in their clearcoats and primers, drastically reducing inventory levels. The versatility of the products allows the clearcoats to be used for both spot repairs and over-all applications by just varying the speed of the hardener and reducer.

Does the choice of hardener and reducer affect the time to sand and polish the substrate?
Changing between U-POL slow, medium and fast hardeners and reducers does not change the time a coating takes to cure and to be ready to sand/polish. Only the flash off time of the solvent is affected. Differing speeds of hardener and reducer should only be used to control open time in different climates and for the size of the job in question - not for shortening process times.

Do I need a different hardener for primer / clear?
Within our System 20 line of coatings there is one set of hardeners, which can be used in any clear or primer from this range (although it is necessary to use VOC hardeners with VOC paints and NR hardeners with NR paints). Other lines from U-POL (eg. EGC, Expert, Maximum) have their own hardener system, which is different from the System 20 line.

What is Rocket Paint Accelerator for?
U-POL Rocket can be used to speed up a clearcoat curing. It is essentially extra catalyst so it will shorten the time to sand/polish, but can lead to more pinching if too much is used. See the technical data sheet for more information.

What is the best way to ensure primer is thoroughly mixed for each use?
Best practice is to put on a mixing bank (if there is room), this also makes pouring much easier.

Is there a size restriction on how large an area can be primed DTM?
No, entire panels can be primed.

Do I need to reduce primers before use?
With our primers we recommend different levels of reducer depending on how the product is being used. For our best selling primer (UP2253), it can be used as a high build primer without reduction, but if you add 10% of solvent it can be used as a primer surfacer and with 20% reduction as a sealer. Reductions need to be completed in a way that still complies with the requirements of the local air quality management district. Full details of how to reduce each of our products is on the TDS for the product.

Is there a list that will tell what the approximate mil build is at each level of reduction?
This information is on the TDS sheet, also listed by fluid tip used.

Can I tint System 20 primers?
System 20 primers are available in gray, black and white allowing a customer to blend them to achieve any gray shade that they desire. U-POL does not sell colored toners for these products, but we know that they can be tinted successfully with a solvent based toner set designed for use with polyurethane products, including the U-POL toner pouches in our RAPTOR line.

Which speed hardener should I use?
For a regular sized (2-3 panel) repair, the following temperature ranges are recommended.

Temperature (ºF)	Hardener
40-70°F	Fast
60-95°F	Standard
75-+104°F	Slow

For larger repairs it may be helpful to use a slower hardener than quoted, particularly at the higher end of the recommended temperatures. When temperatures are below 40°F, use a temperature controlled spray booth and condition the paint and parts to be sprayed to 60°F before starting.
In temperatures above 75°F, you can add up to 10% standard or slow reducer to give a slightly longer

open time with less peel. If it is above 85°F, use slow hardener. If you see die back, use standard hardener with 10% slow reducer instead.

Does it really matter which hardener you use for primers?

It is not as critical as for clears, but using correct temperature activator will allow the primer to flow into sand scratches without bridging, best selection should be on the size of the repair to be primed as well as the temperature.

How do I avoid a soft film in cold weather?

The most likely cause is that the film is not through curing. To avoid this, add Rocket Paint Accelerator, use fast reducer / hardener or use a faster clearcoat.

How do I avoid a peely film in cold weather?

The most likely cause is that the flow out is too slow. To avoid this, add 3 to 5% standard or fast reducer to give more flow.

What causes die back (loss of gloss) in clears?

This can be caused by a few scenarios.
a. Too short a period between coats, which can lead to trapped solvent.
b. Top coating waterborne base coats before they are flashed correctly, trapping moisture.
c. Improper mixing of hardener into the clear.
d. Insufficient air flow after clear is applied, such as turning the booth off to quickly.

How do I avoid die back in cold weather?

The most likely cause is slow solvent being temporarily trapped in the film which has crosslinked before the solvent evaporates. To avoid this, use the fast hardener but don't add Rocket Paint Accelerator.

How do I avoid die back in hot weather?

The most likely cause is too much solvent in the film when it crosslinked. To avoid this, use a slower clearcoat and/or a faster hardener.

How do I avoid solvent popping in cold weather?

Don't add reducer, increase flash off time between coats and apply several thinner coats to improve through dry. You can also increase the speed of hardener to fast. Don't add Rocket Paint Accelerator or use extra-fast hardener, which can make the problem worse.

How do I avoid solvent popping in hot weather?

The most likely cause is too much solvent in the film when it skinned over. To avoid this, use a faster hardener or add reducer. Reduce flash off time between coats to improve melt-in. Also check that the air circulation in the booth is not blowing directly onto the panel.

How long do I need to leave a clear before I buff it?

Each clear is different and the recommended time to buff is stated on the TDS for each product. For our best selling clear, UP2882 we recommend a period of five hours before buffing.

What are the recommended maximum and minimum mil builds for clears?

U-POL recommends a target mil build of 1 – 1.5 mil in two coats to give sufficient protection. It is possible to add up to three coats with a combined mil build of 2.5 – 3 mil, but no more than three coats should be applied in one application to avoid solvent being trapped and leading to die back.

Can I add reducer to U-POL clears?

We do not recommend that U-POL clears need reducing under typical application conditions, but where specific circumstances require, they can be reduced by up to 10% by volume.

What type of reducer can should I use for reducing U-POL products?

For best results we recommend our own U-POL multi-functional reducers, but other high quality urethane grade solvents can also be used. U-POL do not recommend use of lacquer thinners with our products.

What is the difference between 4:1 and 2:1 clears?

2:1 clears are more common in Europe (and are often termed 'Euro-Clears'). They are often seen as better for larger jobs, as they can be more forgiving on application and typically dry to a harder film. As they need more hardener they can be more expensive in terms of dollars/square foot covered.

What is the difference between a National Rule and a VOC product?

VOC products are designed to give a compliant offering in areas where the local Air Quality Management District have set VOC limits, typically either on a state or local county basis. We have a reduced VOC version of most of our popular primers and clears. They are aimed to be as close as possible a true countertype to the National Rule version, although some differences on their application can be seen. When using a VOC product it is necessary to use the appropriate VOC hardener.

Do U-POL clears require flex agent?

With a unique resin system U-POL clears are flexible enough to not require use of flex agent.

DRIVING SURFACE PERFECTION™

SYSTEM 20 Primers Mixing Guide

U-POL Gray Shade System is an economical tool to achieve specific shades of gray undercoat resulting in savings on basecoat usage. Through easy mixing of our white, gray and black primers, the Gray Shade System helps to reduce the basecoat film build required to achieve the correct color match to the OEM finish.

- Apply less coats of basecoats to achieve opacity
- Reduces topcoat film build required
- Reduces basecoat application time
- Improves color reproduction
- Reduces paint defects and rework associated with excessive film build
- Saves time, labor and energy costs

Mixing Guide

U-POL Gray Shade System is an economical tool to achieve specific shades of gray undercoat resulting in savings on basecoat usage. Through easy mixing of primers, the Gray Shade System helps to reduce the basecoat film build required to achieve the correct color match to the OEM finish.

1. Identify the desired U-POL Gray Shade System for the basecoat being applied.
2. Mix the U-POL Gray Shade System formula as per the mixing ratio in the table below. Stir thoroughly.
3. Refer to the SYSTEM 20 Primers technical data sheets (TDS) for preparation of the substrate and hardener addition.
4. Apply the U-POL Gray Shade System primer over the repair area and allow flash off as per the TDS.

	Mixing Ratio		
Gray Shade System	**White**	**Gray**	**Black**
	100%		
		100%	
	75%		25%
		50%	50%
			100%

DRIVING SURFACE PERFECTION™

SYSTEM 20 Mixing Guide

for 150ml Primer

	Weight in Grams			
Gray Shade	White	Gray	Black	System 20 Hardener
	248			35
		251		35
	186		58	35
		125	117	35
			233	35

	Volume in ml			
Gray Shade	White	Gray	Black	System 20 Hardener
	150			38
		150		38
	113		38	38
		75	75	38
			150	38

for 400ml Primer

	Weight in Grams			
Gray Shade	White	Gray	Black	System 20 Hardener
	662			95
		668		95
	496		155	95
		334	311	95
			622	95

	Volume in ml			
Gray Shade	White	Gray	Black	System 20 Hardener
	400			100
		400		100
	300		100	100
		200	200	100
			400	100

for 800ml Primer

	Weight in Grams			
Gray Shade	White	Gray	Black	System 20 Hardener
	1323			189
		1336		189
	992		311	189
		668	662	189
			1243	189

	Volume in ml			
Gray Shade	White	Gray	Black	System 20 Hardener
	800			200
		800		200
	600		200	200
		400	400	200
			800	200

SYSTEM 20 PRIMERS
MIXING GUIDE

Use the paint wheel to choose the right shade of primer for any basecoat