



Imron® 2.1 + Polyurethane **Reduced Gloss Topcoat** *Product Data Sheet (Mix Qualities QM, QA, QF)*

Description:

Imron® 2.1 + reduced gloss topcoats are the newest generation of Imron® technology. Based upon unique DuPont formulations and resin technology, **Imron® 2.1 +** reduced gloss topcoats provide high performance with multiple gloss levels and are VOC compliant within 2.1 lbs environmental regulations.

Imron® 2.1 + is an aliphatic polyurethane enamel available in multiple gloss levels. It may be applied by brush, roll or spray application. This high performance, two-package, low VOC conforming (2.1lbs/gal) product, produces properties of both polyester and acrylic polyurethanes suitable for use in any environment where long-term color and gloss retention are desired.

Imron® 2.1 + reduced gloss qualities Semi-gloss (QM), Satin Gloss (QA) and Flat (QF) make up the low gloss offering. The introduction of the **Imron® 2.1 +** product line offers a simplified product line which utilizes a common activator among all the Imron® topcoat products. The resulting highly durable finish delivers premium quality polyurethane performance.

Product Line Components

Imron® 2.1 SG™ +	Semi Gloss ("QM" mix quality)
Imron® 2.1 ST™ +	Satin Gloss ("QA" mix quality)
Imron® 2.1 FT™ +	Flat ("QF" mix quality)

Suggested Uses:

As a high performance, tough, industrial polyurethane topcoat over properly prepared and primed steel, galvanized steel, stainless steel, aluminum, concrete, concrete block or wood where:

- Outstanding long term reduced gloss and color retention are desired
- Excellent resistance to chemicals is required
- Use in corrosive or industrial marine environments is needed
- Outstanding abrasion resistance and flexibility are required
- Application by brush and roller, in addition to spraying, may be necessary
- Application can be made at temperatures as low as 35°F
- Mechanical surface preparation will be prohibited or impractical later when recoating
- Compliance with 2.1 lbs VOC regulations is required

Not recommended for: Immersion service or floors

COMPATIBILITY WITH OTHER COATINGS

- Imron® 2.1 + reduced gloss qualities QM, QA & QF can be applied over other DuPont Industrial Coatings including, but not limited to Imron® Industrial Strength, Imron® 2.1, Imron® Waterborne Polyurethane Copolymer coatings, Corlar® epoxies, Tufcote® acrylics, Tufcote® alkyd primers, and DuPont WP™ wash primer.
- Imron® 2.1 + reduced gloss qualities QM, QA & QF may be used over most aged and hard-cured coatings in good condition. Testing for lifting, bubbling and adhesion is recommended to assure compatibility with unknown coatings. Contact your DuPont Performance Coating representative for specific recommendations.

MAXIMUM SERVICE TEMPERATURE

250°F (93°C) in continuous service.
300°F (148°C) in intermittent heat.

Some yellowing of light colors may occur at elevated temperatures.

PERFORMANCE PROPERTIES

Abrasion & Mechanical	Excellent	Color & Gloss Retention	Excellent
Alkalis	Excellent	Acids	Excellent
Humidity	Excellent	Salts	Excellent
Solvents	Excellent	Weather	Excellent

VOC (Theoretical less water and exempt compounds).

Compliant at 2.1 lbs/gal VOC

	Imron® 2.1 +					
	Normal			Hot		
	Less than 85°F	VOC	VOC (TBAC exempt)	Higher than 85°F	VOC	VOC (TBAC exempt)
+ Y-32401™	2%	2.01 lbs/gal	1.72 lbs/gal	2%	2.01 lbs/gal	1.72 lbs/gal
+ 9M01™	8%	2.01 lbs/gal	1.73 lbs/gal	8%	2.01 lbs/gal	1.73 lbs/gal
+ VG-805™	1 oz / mixed gal	2.07 lbs/gal	1.79 lbs/gal	1 oz / mixed gal	2.07 lbs/gal	1.79 lbs/gal
+ 9M05™	1 oz / mixed gal	2.08 lbs/gal	1.80 lbs/gal	1 oz / mixed gal	2.08 lbs/gal	1.80 lbs/gal
+ 9M02™				Or instead of Y-32401™		1.71 lbs/gal
				5%	1.99 lbs/gal	

This product contains T-Butyl Acetate (TBAC).

HAPS Information – Theoretical

	Imron® 2.1 +			
	Normal		Hot	
	Less than 85°F	HAPS lbs/gal solids	Higher than 85°F	HAPS lbs/gal solids
+ Y-32401™	2%	0.4	2%	0.4
+ 9M01™	5%	0.4	8%	0.4
+ VG-805™	1 oz / mixed gal	0.4	1 oz / mixed gal	0.4
+ 9M05™	1 oz / mixed gal	0.4	1 oz / mixed gal	0.4
+ 9M02™			Or instead of Y-32401™	
			5%	0.1

COLOR

Imron® 2.1 + reduced gloss topcoats is a mixing system consisting of a binder, 2100P™, 19 tints and a mix quality color formula. Over 5000 custom colors can be mixed in reduced gloss qualities semi gloss (QM), satin (QA) and flat (QF). Select factory package colors are also available.

Color Availability:

Mix quality only.

Gloss (ASTM D 523)

Imron® 2.1 SG™ +	Semi Gloss ("QM" mix quality)	50 - 65 measured @ 60° angle
Imron® 2.1 ST™ +	Satin Gloss ("QA" mix quality)	25 - 45 measured @ 60° angle
Imron® 2.1 FT™ +	Flat ("QF" mix quality)	0 - 10 measured @ 60° angle

Weight Solids – Average varies with color

52% +/- 2%

Weight per gallon – Average varies with color

9 – 11 lbs

Flash Point – Tag Closed Cup

Between 20° to 73°F (-6° to 23°C)

Volume Solids -- Average varies with color

47% +/- 2%

Packaging

Binder 2100P™: 1's (100% full)
Activator 9T00-A™: Pints, quarts, gallons

Shipping Weight – lbs – approximate

Enamel:	1 gallon container:	11 lbs		
Activator:	1 quart container:	3 lbs	1 gallon container:	12 lbs

SHELF LIFE & STORAGE CONDITIONS

Store in a dry, well-ventilated area. Storage conditions should be between 35°F (2°C) and 120°F (48°C)

- Shelf Life: 1 year minimum.
- Imron® 2.1 + reduced gloss may settle. Best used upon mixing color. Shake 9T20™ Flattener before each use and mixed color periodically for less frequently used colors.

Cure Times – HOURS @ 1.5 – 2.0 MILS SUGGESTED DFT

	@ 77°F (25°C) 50% RH		@ 90°F (32°C) 50% RH	
	2% Y-32401™ Reducer Without Accelerator	2% Y-32401™ Reducer with 1 oz. VG-805™ Accelerator	5% 9M02™ Reducer Without Accelerator	5% 9M02™ Reducer with 1 oz. VG-805™ Accelerator
To Touch	3	1.5	2.5	1.5
To Handle	7	4.5	7	4.5
To Recoat	5	3	5	3
Pot Life	2	1	2	1.5
Full Cure	7 days	6 days	6days	5 days

Theoretical Coverage Per Gallon

754 ft² (25.4 m²/l) @ 1 mil dft

376 ft² (12.7 m²/l) @ suggested DFT of 2 mils

Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

Suggested Film Builds

3.0 – 4.0 mils (75 – 100 µm) wet

1.5 – 2.0 mils (37 – 50 µm) dry

Application by brush and roller may require additional coats to achieve recommended films thickness.

SAFETY

Consult the Material Safety Data Sheet for this product prior to use. All Imron® products are intended for professional use only.

APPLICATION INFORMATION

SURFACE PREPARATION

Newly primed surfaces should be clean and dry. If contaminated, detergent/water wash, then blow dry. Previously painted surfaces should have all loose paint removed and the edges feathered. Prime bare spots with appropriate primer.

Activation

Mix Ratio: 6 to 1

Thoroughly mix color components of Imron® 2.1 SG™ +, Imron® 2.1 ST™ +, or Imron® 2.1 FT™ +.

To 6 parts Imron® 2.1 + reduced gloss color mix formula, add one part DuPont™ Imron® 9T00-A™ Activator. If using a mix formula, follow specific color formula for color desired. Measure out appropriate amounts, add activator and mix thoroughly. Use Y-32401™, 9M01™ or 9M02™ reducers as outlined in reduction section. Mix until uniform. Mix thoroughly using a mechanically powered sheer “Jiffy” mixer with variable RPM settings; use medium speed RPM. Move mixer up and down through paint for uniform mixing. No induction period is necessary.

Shake mixed reduced gloss color soon after weighing by means of mechanical shaker.

Reduction

For Spray Use: Normally 0-2% Y-32401™ and up to 8% Imron® 9M01™ (10% max), or 8-10% 9M01™ can be used for spray application less than 85°F. For applications greater than 85°F, use 5% max Imron® 9M02™ and 5% max Imron® 9M01™. Y-32401™ 2% max can be used in place of 9M02™.

For Brush & Roll Use: Normally 0-2% Y-32401™ and up to 8% Imron® 9M01™ (10% max), or 8-10% 9M01™ can be used for brush and roll application less than 85°F. For applications greater than 85°F, use 5% max Imron® 9M02™ and 5% max Imron® 9M01™. Y-32401™ 2% max can be used in place of 9M02™. In addition, when rolling only, use 1 oz per mixed gallon of Imron® 9M05™ Rolling Additive to help eliminate bubbles. After addition of 9M05™ Rolling Additive, allow 5 minutes induction before applying. If faster re-coats are required, use VG-805™ Accelerator, 1 oz per mixed gallon.

DO NOT USE Lacquer thinners for reduction. **Use only recommended reduction solvents.**

Application Thinners

Spray, Brush and Roll – Below 85°F

Imron® Y-32401™, 9M01™

Spray, Brush and Roll – Above 85°F

Imron® Y-32401™, 9M02™

Rolling Additive - Imron® 9M05™

Clean Up Thinners

DuPont T-1021™, Acetone, MEK

APPLICATION CONDITIONS

Do not apply if the application surface temperature is below 45°F (7°C) or above 110°F (43°C), or if the atmospheric temperature is within 5°F of the dew point. For application temperatures below 45°F, the use of Imron® VG-805™ is recommended. Relative Humidity should be below 90%.

Dry times can be improved by adding up to 1 oz. of DuPont VG-805™ Accelerator per activated gallon.

May be recoated by spray when tack-free.

If accelerators have been used, recoating must be done within 48 hours. If more time has elapsed, scuff sand to ensure adhesion.

APPLICATION EQUIPMENT

- Apply by spray, brush or roll
- Manufacturers listed below are a guide. Others may be used. Changes in pressure and tip size may be required to achieve proper application.

ROLL

Manufacturer: Wooster® Pro/Doo-Z™ ¼" – ½" nap

- Additions:
- Add 1 oz./gallon DuPont 9M05™ Rolling Additive to eliminate bubbles. Craters may develop if you exceed 1 oz./gallon.
 - Normally 0-2% Y-32401™ and up to 8% Imron® 9M01™, (10% max) or 8-10% 9M01™ can be used for roll application less than 85°F. For applications greater than 85°F, use 5% max Imron® 9M02™ and 5% max Imron® 9M01™. Y-32401™ 2% max can be used in place of 9M02™.
 - Material should be cross-rolled.
 - For best results, allow 5 minutes mix time after adding DuPont 9M05™.
 - Do not use DuPont 9M05™ in spray applications.

BRUSH

Manufacturer: Wooster® China Bristle

- Additions:
- Normally 0-2% Y-32401™ and up to 8% Imron® 9M01™, (10% max) or 8-10% 9M01™ can be used for brush application less than 85°F. For applications greater than 85°F, use 5% max Imron® 9M02™ and 5% max Imron® 9M01™. Y-32401™ 2% max can be used in place of 9M02™.
 - Do not use DuPont 9M05™ in spray applications.

CONVENTIONAL SPRAY:

- Additions:
- May be recoated by spray when tack-free.
 - DuPont 9M05™ is not recommended for spray application.

EQUIPMENT SET UP - RECOMMENDATIONS

Manufacturer	Sata	DeVilbiss	Graco	Iwata	Binks
Model	K3 RP or LM 3000 RP	JGA, MBC, or FLG	DeltaSpray XT	W-77, W-71, or W-200	2001 or 95
Tip Size	1.0 – 1.3 mm	1.1 - 1.4 mm	1.0 - 1.5 mm	1.2 – 1.4 mm	1.2 – 1.3 mm

*Fluid lines 3/8" ID or larger are required for proper fluid delivery.

HVLP PRESSURE FED:

Manufacturer	Sata	DeVilbiss	Graco	Iwata	Binks
Model	3000RP HVLP	JGHV, EXL, or FLG	AirPro	LPH 200 LVLP	MACH 1 & 1SL SV100 HVLP
Tip Size	1.0 – 1.3 mm	1.1 - 1.4 mm	1.1 – 1.5 mm	1.2 – 1.4 mm	1.2 – 1.4 mm

AIRLESS SPRAY:

Manufacturer	Graco	Iwata	Binks	Kremlin
Model	Silver or Plus	ALG or Airlesso	Airless 1	Airless 250 II
Tip Size	.011 - .015	.011 - .015	.011 - .017	.013 - .017
Pump	30:1 min	ALG 30:1 min	30:1 min	Orca 32:1

AIR ASSISTED AIRLESS SPRAY:

Manufacturer	Graco	Iwata	Binks	
Model	AA4000 HVLP, AA10HP Cap	Alpha or Alpha Plus	MSG 200 or 2000	AA 1500
Tip Size	.021 - .027	.015 - .021	Adjustable Tip	.013 - .019

- Fluid lines > ¼" ID are recommended for lengths up to 25', 3/8" ID or larger are required for proper fluid delivery at lengths longer than 25'.
- Minimum pressure: 2500 – 4500 psi
- Filter 60 Mesh.

ELECTROSTATIC:

Manufacturer	Graco	Nordson	Ransburg
Model	PRO Xs3 Or XS4 Electrostatic Gun	Kinetix Systems AA, KVLP & Conventional	REA 90 or AA90

Orifice Size		Orifice Size	
in.	(mm)	in.	(mm)
.031	(0.8)	.055	(1.4)
.042	(1.0)	.067	(1.7)
.043	(1.1)	.070	(1.8)
.051	(1.3)	.080	(2.0)

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