

Imron® 3.5 + Polyurethane Reduced Gloss Topcoat

Product Data Sheet (Mix Quality RM, RA, RF)



Description:

Imron® 3.5 + industrial paint coatings are high solids aliphatic polyurethane enamel available in multiple gloss levels. It may be applied by brush, roll or spray application. This high performance, two-package, VOC conforming (3.5lbs/gal), multi-use product is based upon unique DuPont formulation technology, producing properties of both polyester and acrylic polyurethanes.

Imron® 3.5 + reduced gloss qualities Semi Gloss (RM), Satin Gloss (RA) and Flat (RF) are formulations based on a new technology platform with fewer semi-balanced toners providing improved color retention, enhanced system performance, and better reduced gloss and appearance.

The introduction of the **Imron® 3.5 +** 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® 3.5 SG™ +	Semi Gloss ("RM" mix quality)
Imron® 3.5 ST™ +	Satin Gloss ("RA" mix quality)
Imron® 3.5 FT™ +	Flat ("RF" mix quality)

Suggested Uses:

As a high performance topcoat over suitable primers or properly prepared steel, galvanized steel, stainless steel, aluminum, concrete, concrete block, fiberglass, plastics and wood where:

- Outstanding 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

Not recommended for: Immersion service or floors

COMPATIBILITY WITH OTHER COATINGS

- Aged **Imron® 3.5 +** reduced gloss qualities may be re-coated with itself following washing with clean, fresh water – no mechanical surface preparation is required.
- **Imron® 3.5 +** reduced gloss qualities can be applied over other DuPont Industrial Coatings including, but not limited to, Imron® Industrial Strength, Imron® waterborne polyurethane copolymer coatings, Corlar® epoxies, Tufcote® acrylics, Tufcote® alkyd primers, and DuPont WP™ wash primer.
- **Imron® 3.5 +** reduced gloss qualities 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.

Some yellowing of light colors may occur at elevated temperatures.

300°F (148°C) in intermittent heat.

PERFORMANCE PROPERTIES

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

For more information please see ASTM Information section.

VOC (Theoretical less water and exempt compounds).

Compliant at 3.5 lbs/gal VOC

	Imron® 3.5 HG™ +					
	Normal			Hot		
	Less than 85°F	VOC	VOC (TBAC exempt)	Higher than 85°F	VOC	VOC (TBAC exempt)
+ Y-32401™	2%	3.44 lbs/gal	3.28 lbs/gal	2%	3.44 lbs/gal	3.28 lbs/gal
+ 9M01™	5%	3.44 lbs/gal	3.28 lbs/gal	5%	3.44 lbs/gal	3.28 lbs/gal
+ VG-805™	1 oz / mixed gal	3.48 lbs/gal	3.33 lbs/gal	1 oz / Mixed gal	3.48 lbs/gal	3.33 lbs/gal
+ 9M05™	1 oz / mixed gal	3.49 lbs/gal	3.34 lbs/gal	1 oz / Mixed gal	3.49 lbs/gal	3.34 lbs/gal
+ 9M02™				Or instead of Y-32401™		
				5%	3.45 lbs/gal	3.29 lbs/gal

This product contains T-Butyl Acetate (TBAC).

HAPS Information – Theoretical

	Imron® 3.5 HG™ +			
	Normal		Hot	
	Less than 85°F	HAPS lbs/gal solids	Higher than 85°F	HAPS lbs/gal solids
+ Y-32401™	2%	0.6	2%	0.6
+ 9M01™	5%	0.6	5%	0.6
+ VG-805™	1 oz / mixed gal	0.6	1 oz / mixed gal	0.6



COLOR

Thousands of custom colors can be mixed in reduced gloss qualities semi gloss (RM), satin (RA) and flat (RF). Mix formulas are available in Mobius, ColorNet®, and Acquire RX™ Systems.

Color Availability:

Imron® 3.5 + reduced gloss qualities are available as mixes only. All reduced gloss versions use 9T20™ Flattener and must have an appropriately balanced color mix formula.

Gloss (ASTM D 523)

Imron® 3.5 SG™ +	Semi Gloss (“RM” mix quality)	50 - 65 measured @ 60° angle
Imron® 3.5 ST™ +	Satin Gloss (“RA” mix quality)	25 - 45 measured @ 60° angle
Imron® 3.5 FT™ +	Flat (“RF” mix quality)	0 - 10 measured @ 60° angle

Note: Imron® 3.5 + reduced gloss formulas use 9T20™ Flattener. Please also note that the mix ratio for reduced gloss qualities of Imron® 3.5 +, changes from 4 to 1 with RH, High Gloss quality, to 8 to 1 with all reduced gloss qualities.

Weight Solids – Average varies with color

50% +/- 4%

Weight per gallon – Average varies with color

8.5 – 10.5 lbs (3.9 – 4.8 kg)

Flash Point – Tag Closed Cup

Between 20° to 73°F (-6° to 23°C)

Volume Solids -- Average varies with color

45% +/- 2%

Packaging

Enamel: Mix formulas available in ColorNet®.

Activator: Quarts (80% full) and gallons (full)

Shipping Weight – lbs – approximate

Enamel: 1 gallon container: 9 lbs

Activator: 1 quart container: 2 lbs 1 gallon container: 9 lbs

SHELF LIFE & STORAGE CONDITIONS

Store in a dry, well-ventilated area. Storage conditions should be between -30°F (6°C) and 120°F (48°C)

- Shelf Life: 1 year minimum.
- **Imron® 3.5 +** reduced gloss may settle. Best used upon mixing color. Shake before each use and periodically for less frequently used colors. Shake 9T20™ Flattener frequently.

Cure Times – HOURS @ 2.0 MILS SUGGESTED DFT

	@ 77°F, 50% RH (2% Y-32401™)		@ 90°F, 50% RH (5% 9M02™)	
	Without VG-805™ Accelerator	With 1 oz. VG-805™ Accelerator	Without VG-805™ Accelerator	With 1 oz. VG-805™ Accelerator
To Touch	3 hours	1.5 hours	2 hours	1 hour
To Handle	7 hours	4.5 hours	7 hours	4 hours
To Recoat	5 hours	3 hours	5 hours	3 hours
Pot Life	3 hours	2 hours	2.5 hours	2 hours
Full Cure	7 days	6 days	6 days	5 days

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

Theoretical Coverage Per Gallon

6442 ft² (25.4 m²/l) @ 1 mil dft

322 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

4 - 4.5 mils (100-113 µm) wet

1.5 – 2 mils (36 – 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 (8:1)

Thoroughly mix 8 parts Imron® 3.5 SG™ + (RM), Imron® 3.5 ST™ + (RA), or Imron® 3.5 FT™ + (RF), then add 1 part Imron® 9T00-A™ Activator while stirring. No induction period is necessary.

Thoroughly mix all colored portions until uniform. To 8 parts Imron® 3.5 + base, 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. For most applications, normally 0-2% Y-32401 and/or up to 5% 9M01™ can be used for spray application less than 85°F. For applications greater than 85°F use Y-32401™, 2% max or 5% max 9M02™ Thinner depending upon application conditions and methods. Mix until uniform. (See reduction section below.) 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.

Agitate mixed color soon after weighing by means of mechanical shaker.

Pot Life

3 hours @ 77°F and 50% RH. Higher temperatures or the addition of Imron® VG-805™ Accelerator may shorten pot life.

Reduction

For spray use (pressure pot and airless, depending upon conditions and equipment):

Normally 0-2% Y-32401™ and/or up to 5% 9M01™ can be used for spray application less than 85°F. For applications greater than 85°F use Y-32401™ 2% max or 5% max 9M02™.

For Brush and Roll use: Normally 0-2% Y-32401™ and/or up to 5% 9M01™ can be used when temperature is less than 85°F. For application above 85°F, use 0-2% max, Y-32401™ or 5% max 9M02™. In addition, when rolling only, use 1 oz per mixed gallon of 9M05™ Rolling Additive to help eliminate bubbles.

After addition of 9M05™ Rolling Additive, allow 5 minutes induction before applying. If faster recoats are required, use VG-805™ Accelerator 1 oz per mixed gallon. **Use only recommended reduction solvents. Do NOT USE Lacquer thinners for reduction.**

Application Thinners

Spray, Brush and Roll – Below 85°F Imron® Y-32401™, 9M01™ Rolling Additive - Imron® 9M05™
Spray, Brush and Roll – Above 85°F Imron® 9M02™

Clean Up Thinners

DuPont T-1021™, Acetone, or 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%.

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 Imron® 9M05™ Rolling Additive to eliminate bubbles.
 - Add to 0-2% DuPont Y-32401™ and/or up to 5% 9M01™. For applications above 85°F, use 0-2% max, Y-32401™ or 5% max 9M02™ reducer to maintain wet edge.
 - Cross-roll with 50% over-lap.
 - For best results, allow 5 minutes mix time after adding Imron® 9M05™.
 - Do not use Imron® 9M05™ in spray applications.

BRUSH

Manufacturer: Wooster® China Bristle

- Additions:
- Add 0-2% DuPont Y-32401™ and/or up to 5% 9M01™. For applications above 85°F, use 0-2% max, Y-32401™ or 5% max 9M02™ reducer to maintain wet edge.
 - Do not cross brush to reduce lap marks.

CONVENTIONAL SPRAY

- Additions:
- Normally, 0-2% DuPont Y-32401™ and/or up to 5% 9M01™ can be used for spray application less than 85°F. For applications greater than 85°F, use DuPont Y-32401™, 2% max or 5% max 9M02™
 - May be recoated by spray when tack-free.
 - Imron® 9M05™ Rolling Additive is not recommended for spray application.

Manufacturer	Sata	DeVilbiss	Graco	Iwata	Binks
Model	K3 or K3 RP	JGA or MBC	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	DeltaSpray XT – HVLP	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	Graco President	ALG or Airlesso	Airless 1	Airless
Tip Size	.011 - .015	.011 - .015	.011 - .017	.011 - .013
Pump	33:1 min	ALG 33:1 min	33:1 min	Orca 32:1

- Fluid lines > 1/4" 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

AIR ASSISTED AIRLESS SPRAY:

Manufacturer	Graco	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 > 1/4" ID are recommended for lengths up to 25', 3/8" ID or larger are required for proper fluid delivery at lengths longer than 25'.

ELECTROSTATIC:

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

Note: List contains most popular models; other models and equipment may also be suitable for application. Consult your equipment Manufacturer or Supplier for additional recommendations

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)

All technical advice, recommendations and services are rendered by the Seller gratis. They are based on technical data which the Seller believes to be reliable, and are intended for professional use by persons having skill and know-how at their own discretion and risk. Seller assumes no responsibility for results obtained or damages incurred from their use by Buyer in whole or in part. Such recommendations, technical advice or services are not to be taken as a license to operate under or intended to suggest infringement of any existing patent.

E-R5435 / K-24703

(09.11) © Copyright 2011. All rights reserved.

Page 7 of 7

The DuPont Oval, DuPont™, The miracles of science™ and Imron® are registered trademarks or trademarks of DuPont or its affiliates. All other names mentioned herein are the property of their respective owners.



The miracles of science™