

# Imron® 2.1 HG + High Gloss Polyurethane Topcoat (QH Quality)



## GENERAL

### DESCRIPTION

A high gloss 2.1 lbs/gal VOC conforming, low HAPS, polyurethane topcoat based upon unique Axalta formulations and resin technology. The resulting finish product provides a brush, roll or sprayable topcoat suitable for use in any environment where long term color and gloss retention are desired.

### SUGGESTED USES

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

- Outstanding long term 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 applied at temperatures as low as 35°F
- Compliance with 2.1 lb/gal VOC regulations is required

### COMPATIBILITY WITH OTHER COATINGS

- Aged Imron 2.1 HG + may be re-coated with itself following washing with clean, fresh water – no mechanical surface preparation is required.
- Imron 2.1 HG + can be applied over other Axalta coatings including, but not limited to Imron Industrial Strength primers and other Imron primers, Imron waterborne polyurethane copolymer coatings, Corlar® epoxies, Tufcote® acrylics, and Tufcote alkyd primers.
- Imron 2.1 HG + 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 Axalta representative for specific recommendations.

### NOT RECOMMENDED FOR

Immersion service or floors

### PERFORMANCE PROPERTIES

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

The products referenced herein may not be sold in your market. Please consult your distributor for product availability.

### COLOR

Imron 2.1 HG + consists of a mixing system, mix quality QH, utilizing 19 tints and 1 binder (2100P™) to specific mixing formulas. Select Factory Package colors are also available.



## MIXING

### COMPONENTS

Select factory packaged colors – 133-XXXXX Tints	1 gallon container 75% full (96 oz.)
9T00-A™ Activator	1 gallon containers 100% full (128 oz.)
	quart container 100% full (32 oz.)
	(other sizes available-consult CSR)
2100P Color Mix Binder	1 gallon containers 100% full (128 oz.)

### MIX RATIO

Component	Part by Vol.
Imron 2.1 HG + (133-XXXXX) base	3
Imron 9T00-A Activator	1

### ACTIVATION

Directions for use: Thoroughly mix all colored portions until uniform. To 3 parts 133-XXXXX base or Imron 2.1HG + (QH quality) mixing formula, add 1 part 9T00-A Activator. If using a mix formula, follow specific color formulas for color desired. Measure out appropriate amounts, add activator and mix thoroughly. **DO NOT SHAKE.**

### MIXING AND REDUCTION

Reductions can be done using either Y-32401™, Imron 9M01™ or 9M02™ Thinners. Special attention must be paid to reduction amounts to stay within VOC compliance. Mix thoroughly using a mechanically powered sheer “Jiffy” mixer with variable RPM settings; use medium speed RPM. Move mixer up and down through paint to assure uniform mixing. No induction period is necessary.

For spray use: Normally 0-2% Y-32401 and up to 8% Imron 9M01 (10% max under normal conditions), 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 under normal conditions), 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	Y-32401, 9M01
Spray, Brush and Roll – Above 85°F	Y-32401, 9M02
Rolling Additive - Imron 9M05	

### INDUCTION TIME

None unless 9M05 Rolling Additive is used, then 5 minute induction before applying.

### POT LIFE

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



## APPLICATION

### 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.

### 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 Imron® VG-805 Accelerator per activated gallon.

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

- Add 1 oz./gallon Imron 9M05 Rolling Additive to eliminate bubbles. Craters may develop if you exceed 2 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.
- Cross-roll with 50% over-lap.
- For best results, allow 5 minutes mix time after adding Imron 9M05.

### BRUSH

Manufacturer: Wooster® China Bristle

- 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.
- Do not cross brush to reduce lap marks.

### CONVENTIONAL SPRAY

- 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.
- May be recoated by spray when tack-free.
- Imron 9M05 Rolling Additive is not recommended for spray application.

Manufacturer | Model | Tip Size

Sata	K3 or K3 RP	1.0-1.3mm
Devilbiss	JGA, MBC	1.1-1.4mm
Graco	DeltaSpray XT	1.0-1.5mm
Iwata	W-77, W-71, or W-200	1.2-1.4mm
Binks	2001 or 95	1.2-1.3mm

**HVLP PRESSURE FEED**

Manufacturer	Model	Tip Size
Sata	3000RP HVLP	1.0-1.3mm
Devilbiss	JGVH, EXL, or FLG	1.1-1.4mm
Graco	DeltaSpray XT - HVLP	1.1-1.5mm
Iwata	LPH 200 L VLP	1.2-1.4mm
Binks	Mach 1 & 1SL	
	SV100 HVLP	1.2-1.4mm

**AIRLESS SPRAY**

Graco	Silver or Plus	Airless tip size .011 - .015	Pump 30:1 min
Iwata	ALG or Airlessco Guns	Airless Tip Size .011 - .015	Pump ALG 30:1 min
Binks	Airless 1	Airless Tip Size .011 - .017	Pump 30:1 min
Kremlin	Airless 250 II	Airless Tip Size .013 - .017	Pump Orca 32:1

- 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

**Air Assisted Airless Spray**

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

**Electrostatic**

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

**Orifice Size in Inches (mm)**

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

**CLEAN UP THINNERS**

Imron T-1021, Acetone or MEK



**DRY TIMES**

Cure Time At Recommended Thickness 1.5 to 2 mils

	77°F (25°C) and 50% RH		90°F (32°C) and <25% RH	
	2% Y-32401	2% Y-32401	5% 9M02	5% 9M02
	<u>Without VG-805</u>	<u>With 1 oz. VG-805</u>	<u>Without VG-805</u>	<u>With 1 oz. VG-805</u>
Dry to Touch	3 hrs	1.5 hrs	2 hrs	1.5 hr
To Handle	7 hrs	4.5 hrs	7 hrs	4.5 hrs
To Recoat	5 hrs	3 hrs	5 hrs	3 hrs
Pot Life	2 hrs	1 hrs	2 hrs	1.5 hrs
Full Cure	7 days	6 days	6 days	5 days

Note: Imron 2.1 HG + is primarily an air dry product. If **force drying** is being used and acceleration might be required to meet production needs, **use only 389S accelerator**, up to 2 oz.

Other additives such as 89S or 189S can also be used depending upon required VOC, pot life management and desired dry times.



## PHYSICAL PROPERTIES

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.
Volume Solids	65% ± 2%
Weight Solids	70% ± 3%
Theoretical Coverage Per Gallon	1042 ft <sup>2</sup> ((25.4 m <sup>2</sup> /l) @ 1 mil dft 521 ft <sup>2</sup> (12.7 m <sup>2</sup> /l) @ 2 mil dft Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements
Weight Per Gallon	10-12 lbs/gal - average varies with color
Shipping Weight (approximate)	
1 gallon container:	10-12 lbs
Quart Activator:	2-3 lbs
Suggested Film Thickness	2-3 mils (50-75 µm) wet 1.5-2 mils (37 – 50 µm) dry Application by brush and roller may require additional coats to achieve recommended films thickness.
Flash Point	Between 20° to 73° F (-6° to 23° C)
Gloss	>90 measured @ 60° angle Note: Imron 2.1 + can also be made into variable gloss ranges using 9T20™ Flattener. Imron 2.1 + can be formulated into Semi Gloss (QM), Satin Gloss (QA) and Flat (QF). Please consult the specific product data sheet for the low gloss qualities. Please also note that the mix ratio for reduced qualities of Imron 2.1 +, changes from 3 to 1 for QH, High Gloss quality, to 6 to 1 with all reduced gloss qualities.
Shelf Life	12 months minimum

## STORAGE CONDITIONS

Store in a dry, well-ventilated area. Storage conditions should be between 35°F (2°C) and 120°F (48°C). Please consult MSDS for both products for proper protective equipment and safety and health information.

## VOC REGULATIONS

VOC (Theoretical less water and exempt compounds).

Compliant at 2.1 lbs/gal VOC

	Normal		Hot	
	Less than 85°F	VOC lbs/gal	Higher than 85°F	VOC lbs/gal
+ Y-32401	2%	2.01	2%	2.01
+ 9M01	8%	2.01	8%	2.01
+ VG-805	1 oz /mixed gal	2.07	1 oz /mixed gal	2.07
+ 9M05	1 oz /mixed gal	2.08	1 oz / mixed gal	2.08
+ 9M02™	--	--	Or instead of Y-32401 5%	1.99

## HAPS INFORMATION – THEORETICAL

	Normal		Hot	
	Less than 85°F	VOC lbs/gal	Higher than 85°F	VOC lbs/gal
+ Y-32401	2%	0.4	2%	0.4
+ 9M01	8%	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

These directions refer to the use of products which may be restricted or require special mixing instructions in VOC regulated areas. Follow mixing usage and recommendations in the VOC Compliant Products Chart for your area.

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## ASTM INFORMATION

Physical properties are average. Properties listed are for a system of Corlar 2.1 ST™ and Imron 2.1 HG +. Total dry film thickness 7.5 mils. For other system recommendations, please contact Axalta.

<b>TEST</b>		<b>RESULTS</b>
Tabor Abrasion per ASTM D-4060 weight loss in grams		0.011
Salt Fog (ASTM B-117)	500 hours	No rust, no blistering
	1000 hours	No rust, no blistering
	2000 hours	No rust, no blistering
	3000 hours	No rust, no blistering
Humidity Resistance (ASTM D2247)	500 hours	No rust, no blistering
	1000 hours	No rust, no blistering
	2000 hours	No rust, no blistering
	3000 hours	No rust, no blistering
Adhesion (ASTM D4541 -02)	Excellent	
Adhesion (ASTM D3359-02 A/B)	5/5	Excellent
QUV A (ASTM D4587)	3000 hours	Gloss before exposure: 91 Gloss after exposure: 91
Cleveland Cond. (ASTM D4585)	1000 hours	No rust, no blisters, no delamination
Impact (ASTM D2794)	14 inch pounds	
Mandrel Bend (ASTM D522)	% Elongation	0%

## SELECT CHEMICAL RESISTANCE

The following are chemical resistance ratings (1=poor, 10= excellent), after exposure to listed chemicals and 24 hour watch glass exposure.

<b>Chemical</b>	<b>Rating</b>	<b>Chemical</b>	<b>Rating</b>
Sulfuric Acid 10%	No effect	Ammonium Hydroxide 10%	No effect
Sulfuric Acid 50%	Slight color change	Distilled Water	No effect
Hydrochloric Acid 10%	No effect	MEK	No effect
Hydrochloric Acid 20%	No effect	Toluene	No effect
Nitric Acid 10%	No effect	Cyclohexane	No effect
Nitric Acid 20%	No effect	Methanol	No effect
Acetic Acid 10%	No effect	Isopropanol	No effect
Sodium Hydroxide 10%	No effect	Gasoline	No effect
Sodium Hydroxide 50%	Slight ring	5% Gasahol	No effect

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## **SAFETY AND HANDLING**

For industrial use only by professional, trained painters. Not for sale to or use by the general public. Before using, read and follow all label and MSDS precautions. If mixed with other components, mixture will have hazards of all components.

Ready to use paint materials containing isocyanates can cause irritation of the respiratory organs and hypersensitive reactions. Asthma sufferers, those with allergies and anyone with a history of respiratory complaints must not be asked to work with products containing isocyanates.

Do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation, and gloves.

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.

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