

Starting Formulation

SF 1702

Waterborne Gloss White Enamel – 3:1 Ratio

EPI-REZ™ Resin 6520-WH-53 / EPIKURE™ Curing Agent 6870-W-53

Introduction This starting point formulation is designed to function as a high gloss enamel with a relatively long pot life (4-5 hours). Its applications include direct to metal coatings and general industrial top coats.

- Suggested Uses**
- Topcoat metal over primed surfaces
 - Maintenance topcoat
 - Direct to Metal (DTM) coatings

- Features**
- Combining ratio of 3:1 by volume
 - Long gloss-pot life
 - VOC¹ level of 1.7 lb/gal (210 g/l)
 - No induction period required

¹ VOC is the acronym for volatile organic compound as defined by the U.S. 40CFR51.100 (s).

Formula	<u>Material</u>	<u>Supplier</u>	<u>Pounds</u>	<u>Gallons</u>
Part A				
	Eastman EP	Eastman Chemical Company	71.0	9.33
	Deionized Water		61.6	7.38
	BYK 022 defoamer	BYK Chemie	3.6	0.43
	ETHOX TAM 20	ETHOX Chemicals, LLC	4.0	0.49
	CARDURA™ Glycidyl Ester E10P	Hexion	10.8	1.35
	OPTIFLO® H-600	Süd-Chemie	9.0	1.02
<i>Mix well at high speed, ~10 minutes</i>				
	TI-PURE® R-960	DuPont Chemical Company	225.0	6.97
<i>High speed disperse to Hegman 7+ then</i>				
	EPI-REZ Resin 6520-WH-53	Hexion	425.0	47.22
	CoatOSil® 1770 Silane	Hexion Performance Products	<u>6.8</u>	<u>0.81</u>
		Total Part A	816.8	75.00
Part B				
	EPIKURE Curing Agent 6870-W-53	Hexion	180.0	19.78
	VERSATIC™ Acid 10	Hexion	11.1	1.46
	DOWANOL® DPM (<u>pre-mix with</u> <u>VERSATIC 10</u>)	Dow Chemical Company	7.2	0.91
	Raybo 60 (flash rust additive)	Raybo Chemical Company	4.2	0.45

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Dionized Water		17.6	2.11
OPTIFLO® H-600	Süd-Chemie	<u>2.5</u>	<u>0.29</u>
	Total Part B	222.6	25.00
	Total Part A & B	1039.4	100.00

Mixing Instructions

	<u>Pounds</u>	<u>Gallons</u>
Part A	816.8	75.00
Part B	<u>222.6</u>	<u>25.00</u>
Part A + B	1039.4	100.00

Typical Formulation Table 1 / Formulation Properties Properties

	<u>Units</u>	<u>Value</u>
Mix ratio Part A: Part B	By volume	3 : 1
Amine hydrogen eq. to Epoxy eq. ratio (based on solids)		0.90
Epoxy Resin / Curing Agent ratio (solids basis)		
Resin		0.69
Curing Agent		0.31
Total weight solids	%	56.5
Total volume solids	%	46.5
Pigment to Binder ratio by weight		0.65
PVC	%	15
VOC	g/L	210
Induction Time	minutes	0 - 5
Gloss pot life	hrs	4 – 5
Viscosity, Part A + Part B, Stormer at 25 °C		
Initial	KU	114
At 15% dilution with water	KU	84

Typical Film Table 2 / Film Performance Properties ¹ Properties

	<u>ASTM Method</u>	<u>Units</u>	<u>Value</u>
Film thickness	D -1186	mils	2 - 3
Pencil hardness	D-3363		
24 hrs			5B
7 days			F
Set to touch dry	D-5895-B	hrs	1.5
Cotton free	D-5895-B	hrs	13
Through dry	D-5895-B	hrs	23

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Direct/Reverse impact	D-2794	in-lb	160/160
Gloss 60°/20° (2 – 3 mil DFT), after 24 hour cure	D-523		98 / 77
MEK double rubs	D-5402	cycles	
24 hrs			34
7 days			99
Conical mandrel	D-522	%	32

¹ After seven days cure at 75-79°F and 50-60% R.H.

Storage Recommendations regarding storage conditions can be obtained by visiting our web site at www.hexion.com

General Information

These are starting formulations and are not proven in the user's particular application but are simply meant to demonstrate the efficacy of the products and to assist in the development of the user's own formulation. It is the user's responsibility to fully-test and qualify the formulation, along with the ingredients, methods, applications or equipment identified herein ("Information"), by the user's knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any Information.

Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

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Contact Information

For product prices, availability, or order placement, please contact customer service:

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For literature and technical assistance, visit our website at www.hexion.com

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