

Starting Formulation

SF 1048

High Solids, Low Gloss, Gray Epoxy DTM Coating EPON™ Resin 874-G-90 / EPIKURE™ Curing Agent 3175

Introduction This high solids (250 g/L VOC max.) gray epoxy direct-to-metal coating is designed as an alternative to standard epoxy / polyamide coatings. This formulation has a convenient 4:1 w/w combining ratio and only requires a 30 minute induction time. It is expected to offer improved flexibility relative to epoxy coatings based on liquid epoxy resins and has a thru dry time less than 12 hours. This anticorrosive DTM formulation does not contain any HAPs solvent or benzyl alcohol.

Suggested Uses Corrosion resistant metal finish
Industrial and Marine applications

Features Combining ratio of 4:1 by volume
Non-HAP¹ formula
VOC² level of 2.01 lb/gal. (241 g/L)
Contains corrosion inhibitive pigment
Benzyl alcohol free formulation

¹ HAP is the acronym for hazardous air pollutant as defined by the U.S. Clean Air Act Amendments of 1990.

² 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				
	EPON Resin 874-G-90 ¹	Hexion	375.0	42.98
	BEETLE Resin U216-8	Cytec Chemical Company	11.3	1.33
	BYKETOL WS	BYK-Chemie USA	24.8	3.91
	DISPERS 650	Tego Chemical Company	1.1	0.13
	Ti-Pure® R-960	Du Pont Chemical Company	150.0	4.64
	Zinc Phosphate J-0852	Davis Colors	200.0	8.03
	MicroTalc MP-15-38	Luzenac America, Inc.	200.0	8.85
	AROMATIC 100 Solvent		37.0	5.15
<i>High Speed Disperse to a texture of 5-6 Hegman Scale. Reduce speed, then add</i>				
	Black ED-02235 LV (18%w carbon black in liquid epoxy resin)	Plasticolors Corp.	20.0	2.20
	AROMATIC 100 Solvent		20.0	2.78

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VOLATILE TOC Solvent		<u>Wt. %</u>	<u>Vol %</u>
Total Part A		1039.2	80.00
Part B			
EPIKURE Curing Agent 3175 ¹	Hexion	135.0	16.67
Propylene Glycol Monomethyl Ether (PM solvent)		<u>25.5</u>	<u>3.33</u>
Total Part B		160.5	20.00
Total Part A & B		1199.7	100.00

¹ Formulated at 1:1 stoichiometry (epoxy equiv. solids: amine equiv. solids).

Mixing Instructions

	<u>Pounds</u>	<u>Gallons</u>
Part A	1039.2	80.00
Part B	<u>160.5</u>	<u>20.00</u>
Part A + B	1199.7	100.00

Reduce with tertiary-butyl acetate (VOC-exempt solvent) to application viscosity

To 100 KU	~10%wt
To 80 KU	~15%wt
To 55 KU	~35%wt

Typical Formulation Table 1 / Formulation Properties Properties

	<u>Units</u>	<u>Value</u>
Mix ratio Part A : Part B	By volume	4 : 1
	By weight	6.47 : 1
Pigment : Binder Weight Ratio		1.10 : 1
Total weight solids	%	87.6
Total volume solids	%	79.1
Pigment volume concentration (PVC)	%	27.7
Volatile Organic Compound (VOC)	lb/gal	2.05
	g/L	245
Induction Time	min.	30
Pot Life	hrs	>4

Typical Film Table 2 / Film Performance Properties Properties ¹

ASTM Method Units Value

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	<u>ASTM METHOD</u>	<u>UNITS</u>	<u>VALUE</u>
Dry Film Thickness	D-1186	mils	4
Dry Times (draw-down)	D-5895B		
Set-to-Touch		hrs	2.5
Cotton Free		hrs	4.5
Through		hrs	8.5
Pencil hardness	D-1186		
4 days			H
Specular Gloss, (60°)	D-523	%	<10

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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