



Enviro Science Technologies

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LIQUID EPOXY RESIN ESRES EA-417300

DESCRIPTION

ESRES EA-417300 is the standard, undiluted, general purpose, diglycidyl ether of Bisphenol-A epoxy resin.

APPLICATIONS

- 1 • High-solids and solvent-free high-build coatings
- 2 • High-pressure laminating
- 3 • Castings
- 4 • Adhesives
- 5 • Electrical potting and encapsulating
- 6 • Functional and decorative flooring
- 7 • Filament winding

FEATURES

- 1 • High heat distortion temperature
- 2 • Medium high viscosity
- 3 • Good reactivity
- 4 • Good resistance properties

PROPERTIES

Viscosity, at 25°C, cps	12,50 0
Color, Gardner	1 max.
Pounds per Gallon	9.65
Epoxide Equivalent Weight	185

STORAGE

ESRES EA-417300 may crystallize during extended storage or when stored at low temperatures. Resin that has crystallized can be remelted by holding at 130°F to 150°F until all crystals have melted. Warm storage (130°F to 150°F) is recommended. Remelting of crystallized resin has no negative effects on performance.

ESRES EA-417300 *Material Safety Data Sheet before handling, storing, or using this product.*

SUGGESTED FORMULATION

Anti-Corrosive Primer
ESRES EA-417300

Component A

<u>Lbs.</u>	<u>Gals.</u>	<u>Material</u>	
228.6	23.56	ESRES EA-417300	
29.2	3.81	Dowanol PM	(1)
29.2	3.69	Glycol Ether DPM	
10.1	0.68	Bentone 27	(2)
3.7	0.56	Methanol	
12.7	1.47	BECKAMINE®21-510	(3)
36.8	5.52	Methyl Isobutyl Ketone	
148.1	20.43	Xylene	
204.6	6.82	Heucophos ZBZ	(4)
153.5	3.59	R8098D	(5)
108.0	4.55	Nyral 300	(6)
35.6	1.52	Mica 325	(7)
<u>138.9</u>	<u>3.80</u>	Barytes #1	(5)
1390.	80.00	TOTAL	
0			
160.0	19.76	ESRES EB – 30773-0	
<u>1.7</u>	<u>0.23</u>	Xylene	
161.7	20.00	TOTAL	
1300.	100.0	TOTAL COMPONENTS A + B	
7	0		

Analysis:

31.1	Pigment Volume Concentration,
9	Percent
1.57	Pigment/Binder Ratio
6	
1042	Spread at 1 Mil, Ft ² per Gallon
80.4	Percent Solids, Weight
9	
64.9	Percent Solids, Volume
9	
VOC	
272	Grams per Liter
2.27	Pounds per Gallon

High-speed disperse to Hegman 4.

Component B

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TYPICAL PERFORMANCE DATA

Typical Properties

Unfilled Castings of ESRES EA-417300 Cured With Various Hardeners

Hardener (ESRES EA)	37-614	37-612
	Aliphatic Amine 26	Polyamide 60
Parts Hardener/100 Parts Resin by Weight		
Gel Time at 25°C (77°F), 100g	12 – 15 Minutes**	50 – 70 Minutes**
Hardness, Barcol, 934-1	35 – 40	25 – 30
Heat Distortion Temperature, °C / °F	99 – 104 / 210 – 220)	60 – 63 / 140 – 145
Tensile Strength, psi	12 – 14,000	7 – 8,000
Tensile Elongation, psi	4 – 5	5 – 6
Flexural Strength, psi	20 – 23,000	12 – 15,000
Flexural Modulus, psi × 10 ⁻⁵	4.2 – 4.5	3.6 – 3.9
Dielectric Strength, S/T, V/M	440 – 465	400 – 425
Dielectric Constant, 60 Hz / 10 ⁶ Hz	3.4 – 3.5 / 3.3 – 3.4	3.5 – 3.6 / 3.3 – 3.4
Power Factor, 60 Hz / 10 ⁶ Hz	0.006 – 0.04 / 0.03 – 0.04	0.005 – 0.006 / 0.03 – 0.04
Water Absorption, Percent Weight 24 Hours at 25°C (77°F) / 2 Hours at 100°C (212°F)	0.1 – 0.2 / 0.7 – 0.8	0.1 – 0.2 / 0.9 – 1.0
Cure Schedule	24 Hours at 25°C/77°F	24 Hours at 25°C/77°F
	+2 Hours at 121°C/250°F	+2 Hours at 121°C/250°F

*1.0 part Tris (dimethylaminomethyl) -phenol added as accelerator.

**Gel time data should be taken only as a guide, since exact data is highly dependent upon sample mass, container, temperature of the resin and hardener, and room temperature. Small differences in any of these factors will make a difference in the gel time of the resin/hardener mix. It is advisable, therefore, to determine gel time of the mix under actual working conditions.

SUGGESTED FORMULATION

High Solids Barrier Mastic Coating
Using ESRES EA 417300

Component A

Lbs.	Gals.	Material	
230.	23.89	ESRES EA-417300	
5			
46.1	6.91	Methyl Isobutyl Ketone	
8.6	1.27	Diisobutyl Ketone	
172.	7.14	Wollastocoat 10	(1)
9		ES	
57.6	1.67	Tronox CR-800	(2)
9.8	0.74	Tixogel EZ-200	(3)

Analysis:

85.5	Percent Solids, Weight
73.6	Percent Solids, Volume
12.6	Weight/Gallon, Pounds
1.32/1	Pigment to Binder, Weight Ratio
29.1	Pigment Volume Concentration, Percent
100/59	Epoxy to Curing Agent, Weight Ratio
VOC	
1.83	Pounds per Gallon
220	Grams per Liter

High-speed disperse to at least 5 N.S.

41.9	6.28	Methyl Isobutyl Ketone	
144.	6.0	Nytal 300	(4)
1	8		

High-speed disperse to 3.5 N.S.

62.2	6.45	ESRES EA-417300
230.5	5.77	Micaceous Iron Oxide
3.4	0.47	Xylene
1007.	66.6	TOTAL
6	7	

High-speed disperse until uniform.

Component B

172.9	21.89	ESRES EB-30773-0
43.2	5.96	Toluene
39.7	5.48	Xylene
255.8	33.33	TOTAL
1263.	100.0	TOTAL COMPONENTS A + B
4	0	

TYPICAL PERFORMANCE DATA

Film Properties:

Combine Components A and B (2:1 by volume)
Approximately 1 hour prior to application.
Spray unreduced.

Viscosity, Seconds, #4 Zahn Cup	16
Pot Life, Hours	>8
Dry Time, 7 MWFT, Set-to-Touch, Minutes	130
Tack Free, Hours	6-8
Through Dry, Hours	10-12

Typical Properties

Based on 7-Day Ambient Cure, 2 Coats of 6 Mils Each on Polished CRS

Pencil Hardness	F
Gloss, 60° / 85°	22/35
Impact Resistance, Forward	10
Adhesion, Crosshatch	
Polished CRS	100%
Unpolished CRS	100%
Aluminum	100%
Intercoat	100%
Humidity Resistance, QCT Cabinet	
Hours	1500
Blisters	None
Corrosion Resistance, Salt Fog, 4 Mil Film	
Hours	1000
Scribe Blisters	None
Scribe Corrosion Creep	None
Scribe Rusting	None
Field Blistering	None
Field Rusting	None

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