Enviro Science Technologies

P.O. BOX 11232, SHAWNEE MISSION, KANSAS 66207-1232
Phone # 913-677-4900 Fax # 913 677-4901 est@everestkc.net

LIQUID EPOXY RESIN
ESRES EA-417300

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

APPLICATIONS
- High-solids and solvent-free high-build coatings
- High-pressure laminating
- Castings
- Adhesives
- Electrical potting and encapsulating
- Functional and decorative flooring
- Filament winding

FEATURES
- High heat distortion temperature
- Medium high viscosity
- Good reactivity
- Good resistance properties

PROPERTIES

Viscosity, at 25°C, cps	12,500
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

Lbs.	Gals.	Material	
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	Nytal 300	(6)
35.6	1.52	Mica 325	(7)
138.9	3.80	Barytes #1	(5)
1390.0	80.00	TOTAL	
160.0	19.76	ESRES EB – 30773-0	
1.7	0.23	Xylene	
161.7	20.00	TOTAL	
1300.7	100.00	TOTAL COMPONENTS A + B	

Analysis:

31.19	Pigment Volume Concentration, Percent
1.576	Pigment/Binder Ratio
1042	Spread at 1 Mil, Ft^2 per Gallon
80.49	Percent Solids, Weight
64.99	Percent Solids, Volume
VOC	
272	Grams per Liter
2.27	Pounds per Gallon

High-speed disperse to Hegman 4.

Component B

TYPICAL PERFORMANCE DATA

Typical Properties

Unfilled Castings of ESRES EA-417300 Cured With Various Hardeners

Hardener (ESRES EA)	**37-614 Aliphatic Amine**	**37-612 Polyamide**
Parts Hardener/100 Parts Resin by Weight	26	60
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 +2 Hours at 121°C/250°F	24 Hours at 25°C/77°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	
230.5	23.89	ESRES EA-417300	
46.1	6.91	Methyl Isobutyl Ketone	
8.6	1.27	Diisobutyl Ketone	
172.9	7.14	Wollastocoat 10 ES	(1)
57.6	1.67	Tronox CR-800	(2)
9.8	0.74	Tixogel EZ-200	(3)

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

41.9	6.28	Methyl Isobutyl Ketone	
144.1	6.08	Nytal 300	(4)

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 3.5 N.

62.2	6.45	ESRES EA-417300
230.5	5.77	Micaceous Iron Oxide
3.4	0.47	Xylene
1007.6	66.67	TOTAL

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
1263.4	100.00	TOTAL COMPONENTS A + B

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