

Starting Formulation

SF 1201

Low Temperature Cure Gloss White Enamels

EPON[™] Resin 828 / EPIKURE[™] Curing Agent 3292-FX-60 and 3251

Formula A <u>Material</u>	<u>Supplier</u>	<u>Pounds</u>	<u>Gallons</u>
EPON Resin 828/ Part A			
EPIKURE Curing EPON Resin 828	Hexion	180.0	17.98
Agent 3292-FX-60 Xylene [™]		37.5	5.21
Anti-Terra [™] U	BYK-Chemie, USA	6.4	0.83
Beetle [™] U216-8	CYTEC Industries Inc.	6.4	0.76
Ti-Pure [™] R-960	Du Pont Co.	150.0	5.96
Sparmite [™]	Harcross Pigments Inc.	35.0	0.95
Microtalc [™] MP-15-38	Specialty Minerals Inc.	35.0	1.55
Bentone [™] SD-2	Elementis Specialties Inc.	1.7	0.12
EPON Resin 828	Hexion	110.0	10.99
MIBK		<u>37.5</u>	<u>5.65</u>
	Total Part A	599.5	50.00
Part B			
EPIKURE Curing Agent 3292-FX-60	Hexion	366.5	43.12
Xylene		34.0	4.71
N-butanol		<u>14.5</u>	<u>2.17</u>
	Total Part B	415.0	50.00
	Total Part A & B	1014.5	100.0
Formula B <u>Material</u>			
<u>Supplier</u>		<u>Pounds</u>	<u>Gallons</u>
EPON Resin 828/ Part A			
EPIKURE Curing EPON Resin 828	Hexion	180.0	17.98
Agent 3251 Xylene [™]		47.8	6.63
Anti-Terra [™] U	BYK-Chemie, USA	6.4	0.83

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Beetle™ U 216-8	CYTEC Industries Inc.	6.4	0.76
Ti-Pure™ R-960	Du Pont Co.	200.0	7.95
Sparmite™	Harcross Pigments Inc.	50.0	1.36
Microtalc™ MP-15-38	Specialty Minerals Inc.	50.0	2.21
Bentone™ SD-2	Elementis Specialties, Co.	1.7	0.12
EPON Resin 828	Hexion	300.0	29.98
MIBK		<u>47.7</u>	<u>7.18</u>
	Total Part A	890.0	75.00
Part B			
EPIKURE Curing Agent 3251	Hexion	193.3	22.47
Xylene		12.5	1.74
N-butanol		<u>5.3</u>	<u>0.79</u>
	Total Part B	211.1	25.00
	Total Part A & B	1101.1	100.0

Formula A Table 1 / Typical Coating Properties

<u>Property</u>	<u>Units</u>	<u>Value</u>	
Mix ratio Part A : Part B	By volume	1 : 1	
	By weight	1.44 : 1.0	
Total weight solids	%	72.8	
Total volume solids	%	60.7	
PVC	%	14.0	
Pigment to binder ratio		0.42	
Induction time	min.	30	
Volatile Organic Compounds (VOC)	Lbs/gal	2.73	
	g/l	327	
Curing agent based on solids	phr	75	
	<u>Units</u>	<u>Value</u>	<u>Value</u>
Cure Development		@77°F	@40°F
Set-to-touch	hrs	1.0	---
Cotton-free	hrs	2.0	---
Thru-dry	hrs	7.0	24
24 hour pencil hardness		2H	6B
12 day pencil hardness		6H	F

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Formula A Table 2 / Ambient Cure Film Properties

	<u>Units</u>	<u>Value</u>
Drawdown on CRS –Cured for 7 days @ 77°F, 55% R.H.		
225 g Pot Life (from 74 – 140 KU)	min.	127
Specular gloss (60/20 degree)		103/99
Dry film thickness	mils	1.5
Impact resistance, (Dir./Rev.)		16/0
Flexibility		Pass ¼”
Adhesion		5A
MEK double rub		>600
Water resistance		
1000 hrs at 160 °F		NE
2000 hrs at 160 °F		8M
Salt spray testing		
500 hrs		NE
1000 hrs		6MD

Formula A Table 3 / Low Temperature Cure Film Properties

	<u>Units</u>	<u>Value</u>
Drawdown on CRS –Cured for 14 days @ 40°F, 80% R.H.		
Specular gloss (60/20 degree)		91/65
Dry film thickness	mils	1.5
Impact resistance, (Dir./Rev.)		64/20
Flexibility		Pass 1/8”
Adhesion		5A
MEK double rub		350
Water resistance		
500 hrs at 160 °F		6M
1000 hrs at 160 °F		6M
Salt spray testing		
500 hrs		6M
1000 hrs		6M

Formula B Table 4 / Typical Coating Properties

<u>Property</u>	<u>Units</u>	<u>Value</u>
Mix ratio Part A : Part B	By volume	1 : 1
	By weight	4.22:1.0
Total weight solids	%	89.2

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total volume solids	%	82.8
PVC	%	14
Pigment to binder ratio		0.42
Induction time	minutes	0
Volatile Organic Compounds (VOC)	lbs/gal	1.16
	g/l	139
Curing agent phr, on solids	phr	40

	<u>Units</u>	<u>Value</u>	<u>Value</u>
Cure Development		@77°F	@40°F
Set-to-touch	hrs	1.0	---
Cotton-free	hrs	3.25	---
Thru-dry	hrs	5.0	24
24 hour pencil hardness		F	5B
12 day pencil hardness		F	B

Formula B Table 5 / Ambient Cure Film Properties

	<u>Units</u>	<u>Value</u>
Drawdown on CRS –Cured for 7 days @ 77°F, 55% R.H.		
225 g Pot Life (from 68 – 140 KU)	min.	35
Specular gloss (60/20 degree)		104/104
Dry film thickness	mils	1.5
Impact resistance, (Dir./Rev.)		8/0
Flexibility		Pass 1"
Adhesion		5A
MEK double rub		110
Water resistance		
500 hrs at 160 °F		NE
1000 hrs at 160 °F		8D
Salt spray testing		
500 hrs		NE
1000 hrs		6M

Formula B Table 6 / Low Temperature Cure Film Properties

	<u>Units</u>	<u>Value</u>
Drawdown on CRS -Cured for 14 days @ 40°F, 80% R.H.		
Specular gloss (60/20 degree)		33/16
Dry film thickness	mils	1.5
Impact resistance, (Dir./Rev.)		100/00

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impact resistance, (Dir./Rev.)	100/60
Flexibility	Pass 1/8"
Adhesion	5A
MEK double rub	27
Water resistance	
500 hrs at 160 °F	NE
1000 hrs at 160 °F	8M
Salt spray testing	
500 hrs	NE
1000 hrs	6M

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