

EPS[®] 2538

SELF-CROSSLINKING ACRYLIC EMULSION

DATA SHEET

Description

EPS 2538 is a styrenated acrylic emulsion offering excellent hardness and resistance properties. EPS 2538 provides paint formulators a low VOC waterborne alternative to solvent-based finishes on cementitious, wood and plastic substrates.

- ✓ Room temperature self-crosslinking emulsion
- ✓ Excellent hardness / print resistance
- ✓ Excellent resistance to water, alcohol and household cleaners
- ✓ Excellent blush resistance and yellowing resistance

Typical Properties

Weight Solids: 40.0 ± 0.7%
 Weight/Gallon: 8.70 ± 0.10
 pH: 9.0 – 10.0

Suggested Coalescing Solvent(s)

(% Solvent on Binder Solids – Pass 40°F LTC Test)

DPnB 15%

Specifications

Volume Solids: 37.3 ± 0.7%
 MFFT: 56°C
 VOC: <5g/L
 Volatiles: Water/Ethanol
 59.86%/0.14%
 Acid Value (on solids): 23

Suggested Formulations

EPS 2538 CLR ST1 - High Gloss Clear (spray)
 EPS 2538 CLR BT1 -High Gloss Clear (brush)
 EPS 2538 PS1 - Pre-Stain Wood Conditioner

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Questions? Call EPS Technical Service @ 1-800-601-8111

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EPS[®] 2538

SUGGESTED FORMULATION

FORMULA: EPS 2538 CLR ST1 (03/06/97)

HIGH GLOSS CLEAR – SPRAY FORMULA

<u>Pounds</u>	<u>Gallons</u>	<u>Raw Material</u>	<u>Supplier</u>	<u>Instructions</u>
661.2	76.00	EPS 2538	EPS	Add with agitation.
1.0	0.12	Foamex 7447	Tego	
40.0	5.23	DPnB	Lyondell	Premix, add with agitation.
4.2	0.50	BYK 346	BYK	
123.1	14.78	Water		
20.0	2.37	ME 39235	Michelman	Add with agitation.
849.4	99.0	Totals		

Formulation Parameters

Weight Solids	32.24%
Volume Solids	29.70%
Weight / Gallon	8.57 lb/gal
Pigment Volume Conc.	0%
Pigment / Binder	0%
VOC	156 g/l
	1.30 lb/gal

Typical Paint Properties

Viscosity (#2 Zahn)	18 - 22 secs
pH	9.0 – 10.0
Color	Clear

Suggested Application Methods

Spray

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SUGGESTED FORMULATION

FORMULA: EPS 2538 CLR BT1 (12/09/98)

HIGH GLOSS CLEAR – BRUSH FORMULA

<u>Pounds</u>	<u>Gallons</u>	<u>Raw Material</u>	<u>Supplier</u>	<u>Instructions</u>
50.0	6.00	Water		Add with good agitation.
654.7	75.00	EPS 2538	EPS	
1.0	0.13	Dehydran 1620	BASF	Add with good agitation.
17.0	2.01	Michem 39325	Michelman	
2.0	0.24	BYK 346	BYK	
49.7	6.50	DPnB	Lyondell	Premix, add slowly with good
5.5	0.65	Paraplex WP-1	Dow	Agitation.
47.5	5.50	Propylene glycol		
6.0	0.66	Acrysol RM-2020	Dow	Premix, add slowly with good
27.6	3.31	Water		agitation.
861.1	100.00	Totals		

Formulation Parameters

Weight Solids	32.28	%
Volume Solids	29.66	%
Weight / Gallon	8.61	lb/gal
Pigment Volume Conc.	0	%
Pigment / Binder	0	
VOC	282	g/l
	2.35	lb/gal

Typical Paint Properties

Viscosity (Stormer)	60 – 70 KU
pH	9.0 – 10.0
Color	Clear
60° Gloss	85+
Freeze Thaw Stability	Pass 5 cycles

Suggested Application Methods

Brush

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SUGGESTED FORMULATION

FORMULA: EPS 2538 PS1 (5/00)

PRE-STAIN WOOD CONDITIONER

<u>Pounds</u>	<u>Gallons</u>	<u>Raw Material</u>	<u>Supplier</u>	<u>Instructions</u>
400.00	48.02	Water		Add under agitation.
250.00	28.74	EPS 2538	EPS	
1.30	0.15	BYK 024	BYK	
1.50	0.21	Surfynol 104A	Air Products	
1.50	0.16	Nuosept 495	Ashland	
164.00	19.69	Water		Premix co-solvents with water, then add slowly under agitation to above.
15.00	1.95	DPnP	Lyondell	
<u>8.00</u>	<u>1.08</u>	PnP	Lyondell	
841.30	100.00	Totals		

Formulation Parameters

Weight Solids	12.15%
Volume Solids	10.98%
Pigment Weight	0.00
Pigment Volume Conc.	0.0
Pigment/Binder	0.0
VOC Level	202 g/l
Weight/Gallon	8.41 lb/gal

Typical Paint Properties

Viscosity	45 - 44 KU
pH	9.5 - 10.5

Application methods

Brush or wipe

Avoid formaldehyde-containing additives; they can cause yellowing. Co-solvents must be premixed with water to avoid shocking the system.

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FORMULATING GUIDELINES

pH

The pH of the formulation is critical to stability. It should be at 9.0 to 10.0. If the pH falls below 9.0 the sample will gel since the crosslinking chemistry is pH driven. Formulating with raw materials that have high acid values can lead to instability even if the pH of the formulation is above 9.0. Despite the high pH, oak panels coated with clear formulations over white stains still maintained good color and clarity.

Solids

Most samples that were made above 32 percent resin weight solids thickened with age in heat stability. The co-solvent type and amount affect the stability in relationship to solids.

Cosolvent

DPnB and combinations of PnB / DPM are excellent choices as coalescing solvents. 15% DPnB on resin solids offers improved stain resistance while the 30% PnB / DPM (1:1 blend) offer slightly better viscosity stability. Plasticizers such as Santicizer 160 or KP-140 at 2.5 – 5.0% on resin solids added with the co-solvent will enhance dried film properties.

Wax Emulsions

Wax emulsions selection may have a major impact on in-can heat stability. Mar resistance additives ME 32535 and ME 39235 (Michelman) are excellent choices. The ME 39235 is slightly more stable than the ME 32535 and gives slightly better stain resistance. These waxes, if used at levels above 20 pounds per 100 gallons, can result in heat stability problems.

Thickeners

DSX 2000 (BASF) and Rheolate 244 (Elementis) are good choices.

Defoamers

Tego Foamex 7447, Foamex 845 and BYK 024 have been found to work well as defoamers with this emulsion.

Additives

BYK 346 is recommended.

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