

EPS[®] 2512

DATA SHEET

STYRENATED ACRYLIC EMULSION

Description

EPS 2512 is a styrenated acrylic emulsion offering alkyd-like gloss, corrosion and chemical resistance, as well as excellent early water and humidity resistance. EPS 2512 provides the capability to formulate coatings well below 100 grams/liter VOC.

- ✓ Alkyd-like gloss and depth of image (DOI)
- ✓ Excellent corrosion and light chemical resistance
- ✓ Excellent early water resistance and blush resistance
- ✓ Excellent early adhesion to a variety of ferrous and non-ferrous substrates, including CRS, aluminum, and galvanized substrates.
- ✓ Excellent shear stability, and can be used without detriment in pigment grinding phase of formulas
- ✓ Outstanding Dirt Pick Up resistance
- ✓ Alkyl Phenol Ethoxylate (APE) – free

Specifications

Weight Solids: 45.0 ± 0.7%
 Weight/Gallon: 8.65 lbs. ± 0.10
 pH: 7.0 - 8.0

Suggested Coalescing Solvent(s)

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

DPnB 6%
 Butyl Cellosolve (EB) 10%

Typical Properties

Volume Solids: 42.9 ± 0.7%
 MFFT: 18°C
 Volatile(s): Water

Suggested Formulations

EPS 2512 WHT ST1 - 100 g/L White High Gloss Enamel
 EPS 2512 BLK ST1 - 100 g/L Black High Gloss Enamel

05-08-2014

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

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FORMULATING GUIDELINES

The following guidelines are offered to assist the paint formulator in achieving the high performance properties offered by EPS 2512. Questions? – Please call EPS Technical Service at 800.601.8111.

Co-Solvents:

Various solvents have been found effective in properly coalescing EPS 2512. Lab results have found that the use of DPnB at a level of only 6% will provide low temperature coalescence (LTC) at 40°F while providing optimal performance. Other solvents found to be adequate (albeit at slightly higher usage levels) include Butyl Cellosolve, Hexyl Cellosolve, and Texanol. Additionally, the use of EPS[®] 9147 can reduce the amount of solvent necessary to achieve proper coalescence.

Dispersants:

While it's mechanical stability allows EPS 2512 to be used in the grind phase of formulas, the use of additional dispersant is recommended when dispersing pigments. Tamol 681 and Tamol 2001 (Dow) have been most commonly used in laboratory testing, and are recommended for dispersing pigments in formulas using EPS 2512. Care should be taken in choosing the proper dispersant (and level), as certain dispersants have been found to adversely affect optimal adhesion characteristics.

Defoamers:

A variety of foaming agents were found effective in formulations using EPS 2512. Among those most effective were Octafoam S-675 (Hi-Mar Specialties), Airex 901W (Tego Chemie), and BYK 024 (BYK).

Amines:

Ammonium Hydroxide (pH adjustment) and AMP-95 (grind stability, wet edge, open time) are most commonly used as amines in formulating with EPS 2512. However, lab testing has shown that Vantex-T (Taminco) is also a suitable replacement for either of these, regardless of purpose. Vantex-T has shown considerably less odor than Ammonium Hydroxide, as well as less VOC contribution than AMP-95. For actual values, or further information regarding Vantex-T, see Taminco's website at www.vantex-t.com.

Flash Rust Inhibitors:

The use of a flash rust inhibitor in DTM paints is strongly recommended. EPS suggests the use of Sodium Nitrite, at a maximum level of one solid pound per 100 gallons of finished material.

Thickeners:

The choice of thickeners will depend heavily on needed properties such as viscosity, sag resistance, and flow / leveling when applied. In order to attain these properties, it has been determined that a combination of rheology modifiers may be needed when formulating with EPS 2512. Among those found most adequate for viscosity control are Acrysol RM-825 (Dow), DSX 1550 (BASF), and Polyphobe TR-116 (Dow). Among those found desirable for sag resistance and flow control are Rheolate 420 (Elementis), Optiflo L100 (BYK), Acrysol RM-2020, and Polyphobe TR-117 (Dow).

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SUGGESTED FORMULATION

FORMULA: EPS 2512 WHT ST1 (12/22/09)

100 G/L WHITE HIGH GLOSS ENAMEL

<u>Pounds</u>	<u>Gallons</u>	<u>Raw Material</u>	<u>Supplier</u>	<u>Instructions</u>
60.0	7.20	Water		Add in order with good agitation.
12.0	1.35	Tamol 681	Dow	
4.0	0.46	Surfynol PSA-336	Air Products	
4.0	0.48	Octafoam S-675	Hi-Mar Specialties	
1.0	0.13	AMP-95	Dow	
225.0	6.59	TiPure R-706	Du Pont	Add with good agitation
570.0	65.90	EPS 2512	EPS	Letdown in order.
2.0	0.27	Ammonium Hydroxide		Add grind at this point.
2.0	0.22	Nuosept 498	Ashland	
99.2	11.91	Water		Premix and add with good agitation.
10.0	1.20	4% Sodium Nitrite solution		
25.7	3.36	DPnB	Lyondell	
6.0	0.66	Acrysol RM-2020	Dow	Add with good agitation.
<u>3.0</u>	<u>0.33</u>	Acrysol RM-8W	Dow	Add with good agitation.
1023.9	100.00	Totals		

Formulation Parameters

Weight Solids	48.57	%
Volume Solids	36.53	%
Weight / Gallon	10.24	lb/gal
Pigment Volume Conc.	18.90	%
Pigment / Binder	0.88	
VOC	89	g/l
	0.74	lb/gal

Typical Paint Properties

Viscosity (Stormer)	85 - 95 KU
pH	8.5 - 9.0
20°/60° Gloss (.003 Bird bar)	75 / 91

Suggested Application Methods

Spray, Brush, Roll

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SUGGESTED FORMULATION

FORMULA: EPS 2512 BLK ST1 (04/22/09)

100 G/L BLACK HIGH GLOSS ENAMEL

<u>Pounds</u>	<u>Gallons</u>	<u>Raw Material</u>	<u>Supplier</u>	<u>Instructions</u>
600.0	69.36	EPS 2512	EPS	Add in order with good agitation.
40.0	3.94	Novocolor IP 8593 Black	CCA	
170.0	20.41	Water		Add in order with good agitation.
10.0	1.20	4% Sodium Nitrite solution		
19.0	2.48	DPnB	Lyondell	
3.0	0.36	Octafaom S-675	Hi-Mar Specialties	
4.0	0.48	BYK 346	BYK	
2.0	0.27	Ammonium Hydroxide		
4.0	0.45	Rheolate 1	Elementis	
8.0	0.93	Propylene Glycol		Premix and add with good agitation.
<u>1.0</u>	<u>0.11</u>	DSX 1550	BASF	
861.0	99.99	Totals		

Formulation Parameters

Weight Solids	34.37	%
Volume Solids	31.92	%
Weight / Gallon	8.61	lb/gal
Pigment Volume Conc.	3.37	%
Pigment / Binder	0.06	
VOC	98	g/l
	0.82	lb/gal

Typical Paint Properties

Viscosity (Stormer)	65 - 70	KU
(#3 Zahn cup)	25 - 30	sec
pH	8.5 - 9.0	
20°/60° Gloss (.003 Bird bar)	76 / 91	

Suggested Application Methods

Brush, Roll, Spray, Dip (reduced)

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