Pat-Add DA 817

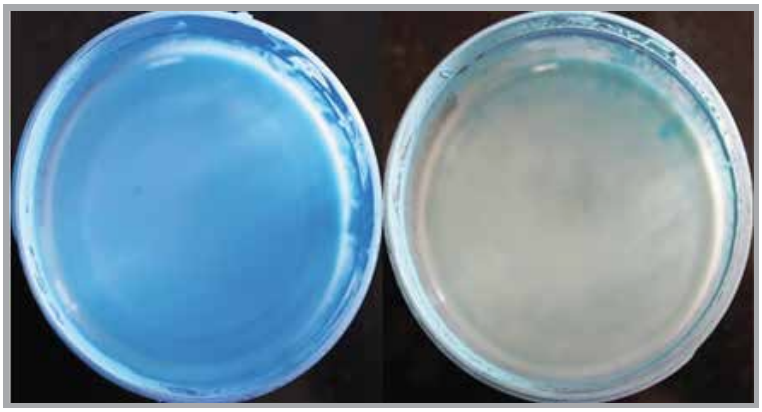
Wetting and Dispersing Agent

PATCHAM

Pat-Add DA 817 is a wetting, dispersing and anti-sedimentation additive recommended for industrial paints.The strong “electrostatic” repulsion created by the adsorbed charged polymeric dispersant chains onto pigment surfaces supports maximum stability at lowest degree of flocculation. Pat-Add DA 817 works in both waterborne and solvent borne systems.

Features of Pat-Add DA 817

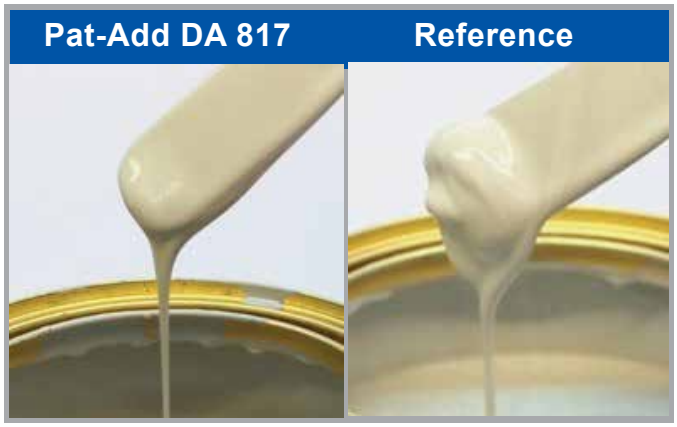
- Effective dispersant for acidic pigments, including silica and carbon black
- Enables high pigment loading
- 100% active VOC free



Pat-Add DA 817 Reference

Pigment blue 15:3 and TiO2 Co-grinding

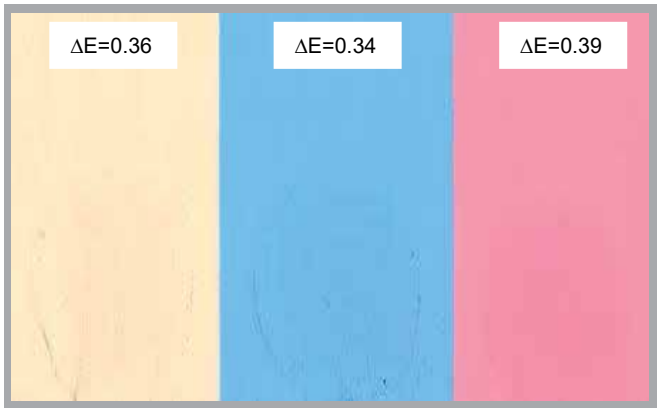
- Can work in both WB and SB systems
- Stage of Addition: Mill base
- Additive dosage as supplied on pigment: Inorganic pigments: 5-10%
  Titanium dioxides: 1.5-3%
  Fillers: 1-1.5%



WB Epoxy concrete coating: 35% extender loading

- Increase long term stability of highly pigmented systems

1% Color Development in SB Epoxy system (Direct grinding)



Pat-Add DA 895

Electroneutral wetting and dispersing agent for pigment dispersion

PATCHAM

Pat-Add DA 895 is a high polarity polymeric electroneutral wetting and dispersing additive for preparing pigment dispersion in unsaturated polyesters for composites and gelcoats.

Features of Pat-Add DA 895

- Efficient stabilization for both acidic and alkaline pigments
- Reduced viscosity of the system permits higher pigment loading
- Strong adsorption onto the pigment reduces risk of flotation and flocculation
- Outstanding stability in UPR colorants

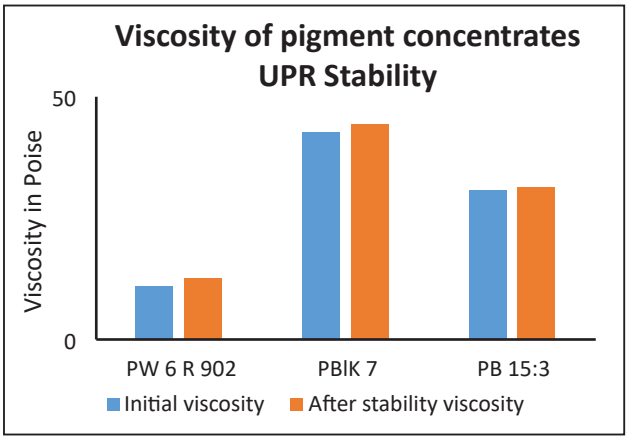
Flow behavior RMPC in Styrene free UPR

PW 6	PBlk 7	PB 15:3
9.13 Poise	47.73 Poise	33.08 Poise

Viscosity at 25°C/77°F

UPR Colored Precast

PW 6	PBlK 7	PB 15:3
Pigmentation = 10%	Pigmentation = 1%	Pigmentation = 1%



Tinting of UPR Colorants to White Gel Coats

2% RMPC Phthalo Blue 15:3

Initial — After 24 hrs

2% RMPC PBlk 7

Initial — After 24 hrs

- Highly recommended for styrene and styrene free UPR System
- Stage of addition : Millbase
- Dosage : Based on solids on pigment
  Inorganic pigment : 1 - 10%
  Organic pigment : 10 - 25%
  Carbon black : 15 - 50%

Pat-Add DA 932

HMV Wetting and Dispersing Agent

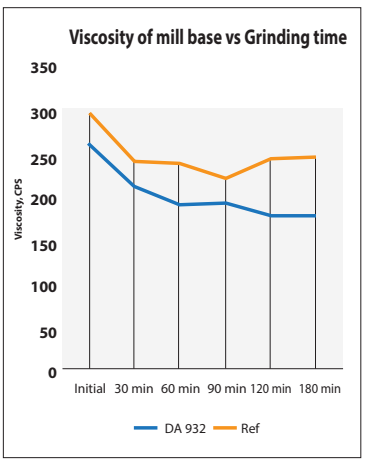
PATCHAM

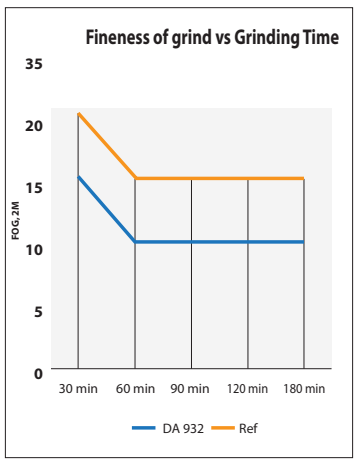
High Molar Volume technology polymeric wetting and dispersing agent. Its polymeric chain of higher volume mass results in a thicker adsorbed layer around the pigment particle thereby increasing their resistance to attractive forces; Improved resistance to flocculation.

Features of Pat-Add DA 932

- Faster pigment wetting to support dispersion and grinding process
- Reduces viscosity and time for the grinding process
- High color intensity for carbon black and organic pigments
- Prevents possible co-flocculation of different pigments through steric stabilization by HMV Technology
- Compatible in various resin systems especially for resins combination with CAB, NC and melamine

Dispersion of Carbon Black FW 200 in 2K PU System





- Solvent borne Universal Colorants - Resin minimal, Resin free pigment concentrates with inorganic, transparent/opaque organic pigments and all types of carbon blacks
- Direct grinding topcoats for Automotive OEM, Refinish and Industrial paints
- Stage of Addition : Millbase
- Dosage SOP
  Inorganic Pigments : 10-15%
  Organic Pigments : 40-60%
  Black Pigments : 40-130%

Pat-Add DA 948

Wetting & Dispersing Additive for Solventborne & Solventfree system

PATCHAM

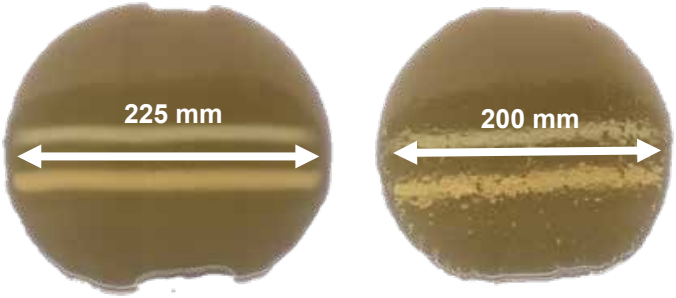
High Molar Volume Technology: 100% polymeric dispersing agent for solvent-free Epoxy Floor coating, pigment concentrates.

Features of Pat-Add DA 948

- Strong reduction in mill base viscosity
- Low foam stabilization and better spreading ability
- Meets FDA requirements of Indirect food additives:
  Adhesives and components of coatings like 21 CFR § 175.300 (Resinous and polymeric coatings)
- Solution for flotation and flocculation issues (In can and application)

Pat-Add DA 948 Reference

Spread Index



Pat-Add DA 948 Reference

- Good compatibility with various resins like solvent free/solvent borne Epoxy,
- Polyurethane, Acrylic/Polyesters polyols.

Stage of Addition: Millbase

Dosage: 0.5-1.5% on total formulation

Colorants in DOP for PVC Plastisol with Pat-Add DA 948

Pigment	SP.Black 4	PB 15:4	PR 112	PY 83
Pigment loading	30% Loading	30% Loading	30% Loading	20% Loading
Viscosity in poise	11.24	4.3	8.7	8.6
%SOP	33	25	20	20

Pat-Add DA 1666

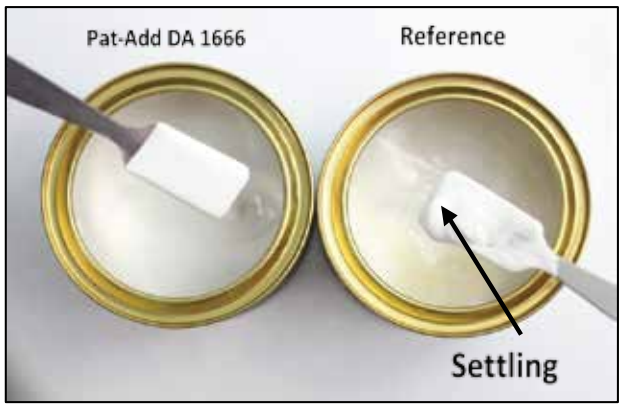
Wetting & Dispersing Additive for Solventborne Coatings

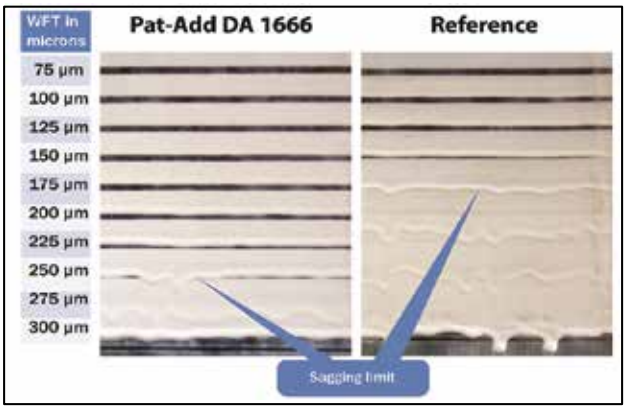
PATCHAM

Pat-Add DA 1666 is a unique pigment wetting and dispersing additive for solventborne applications.

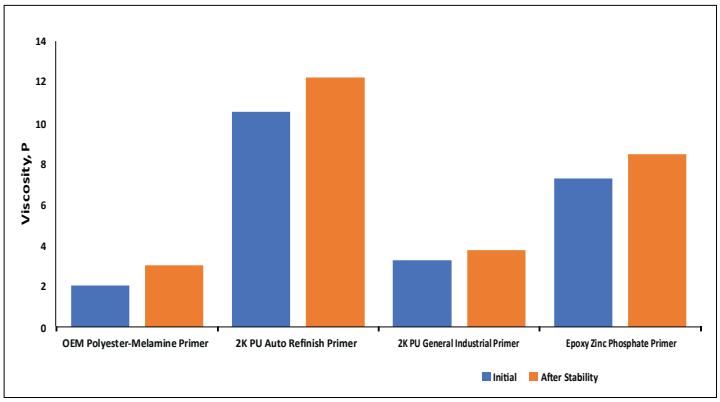
Features of Pat-Add DA 1666

- Electro neutral functionality of polymeric dispersant results in good wetting with various types of pigment surfaces irrespective of the surface charges and treatments
- Polyamide-polyester backbone is compatible with various binders
- Formation of hydrogen and π- bond to the molecules of binder creates a 3-dimensional structure that keeps pigment particles dispersed thereby preventing settling or reagglomeration
- Optimum millbase viscosity enables a higher loading of pigments and extenders
- Imparts balance between flow and anti-sag property





Storage Stability of Primers with Pat-Add DA 1666



- Solventborne Automotive Refinish, OEM, Protective, Decorative and Industrial Coatings primers and intermediate coats
- Stage of Addition: Millbase
- Dosage:
  0.3-0.8% on total formulation