WHY CAB-O-SPERSE DISPERSIONS IN COATINGS?
CAB-O-SPERSE dispersions provide the following benefits to industrial coatings formulations:

1. Performance enhancement
   - Increased film hardness and abrasion resistance
   - Enhanced corrosion resistance and barrier properties
   - High clarity
   - Rheology control: pumpability, sprayability and film sag resistance
   - Reduced time to tack free films

2. Ease of processing
3. Ultra-high purity

The CAB-O-SPERSE dispersion advantage
Adding CAB-O-SPERSE dispersions to polymer latex yields stable dispersions with very low energy input.

ENHANCED DURABILITY
Up to 3x greater hardness
CAB-O-SPERSE dispersions increase hardness up to 3x in waterborne acrylic coatings.

Greater abrasion resistance
CAB-O-SPERSE dispersions improve abrasion resistance of a sample waterborne acrylic coating by up to 20%.

Improved corrosion resistance
CAB-O-SPERSE dispersions provide good corrosion resistance by delivering strong barrier properties.

HIGH TRANSPARENCY
Greater particle size stability...
CAB-O-SPERSE dispersions are more stable relative to dry powder fumed silica mill bases, and therefore will not agglomerate over time.

Data obtained by light scattering measurements with constant solids loading

...Leads to improved clarity
The stability provided by CAB-O-SPERSE dispersions lead to superior optical properties like high clarity (low haze) even at high loadings >10% wt. relative to coatings formulated with silica from powder mill bases.

Silica particle distribution is maintained during drying and film formation.

CABOT

cabotsperse® dispersions for industrial coatings

application guide

fumed metal oxides

fumed metal oxides
**RELATIVE PERFORMANCE IN INDUSTRIAL COATINGS**

**Suggested products:**

**General guidelines:**
- Large particles facilitate formulation stability
- Small particles promote transparency

**Legend:**
- Silica
  - NH₃: Anionic
  - KOH: Anionic
  - Proprietary: Cationic
- Alumina: N/A

**Coating formulation contents**: % wt.
- Acrylic polymer latex (40% wt.): 80.0%
- Water diluent: 8.3%
- Sodium nitrite (25% in water) flash rust inhibitor: 1.2%
- Defoamer: 0.4%
- Surfactant / wetting agent: 0.4%
- Wetting agent: 0.1%
- Dipropylene glycol methyl ether cosolvent: 2.4%
- Propylene glycol normal butyl ether cosolvent: 4.8%
- Dipropylene glycol normal butyl ether cosolvent: 2.4%

**SUM**: 100%

**CAB-O-SPERSE PRODUCTS AND PROPERTIES**

**CAB-O-SPERSE dispersions can be added to attain the desired final particle loading in waterborne formulations. Below is a sample acrylic industrial coating formulation.**

**Coating formulation contents**

<table>
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**SUM**: 100%

**Formulation guidance:**
- CAB-O-SPERSE dispersions do not require any additional grinding or dispersing before incorporation into waterborne polymer systems
- Fumed metal oxide particles delivered by CAB-O-SPERSE dispersion should be 1%-10% in dry coating
- To minimize potential shock, CAB-O-SPERSE product should be selected to match pH of formulation
- Specific to the proxy formulation above, premix everything but the latex and then post-add it to the latex under agitation