**WHY CAB-O-SPERSE DISPERSIONS IN PSAs?**

CAB-O-SPERSE dispersions provide the following benefits to waterborne pressure sensitive adhesives (PSAs):

1. **Ease of processing**
2. **PSA Performance Enhancement**
   - Increased cohesive shear strength
   - Preserved adhesive peel strength
   - Improved thermal stability
   - Tunable optical properties (clarity/haze)
3. **Ultra-high Purity**

**The advantage of CAB-O-SPERSE dispersions**

- Adding CAB-O-SPERSE dispersions to polymer latex yields stable dispersions with very low energy input.
- Silica particle distribution is maintained during drying and film formation.

**IMPROVING STRENGTH IN ACRYLIC SYSTEMS**

**Cohesive shear strength**

CAB-O-SPERSE dispersions:

- Increase shear strength vs. dry powder alternatives at equivalent loading
- Offset reductions in shear strength caused by organic tackifiers typically used to increase adhesion
- Deliver >20% improvement in shear strength at ≥2% wt. silica vs control

**Greater adhesive strength retention**

CAB-O-SPERSE dispersions deliver greater peel strength retention than comparable colloidal silica dispersions.

**VERSATILITY IN OTHER POLYMER SYSTEMS**

**Use in other adhesive systems**

CAB-O-SPERSE dispersions can improve the mechanical properties of many other waterborne polymers in addition to acrylics.

CAB-O-SPERSE dispersions increase tear strength of natural rubber (NR) and polychloroprene (PC) rubber films by up to 65%.

Polymers capable of hydrogen bonding can interact favorably with CAB-O-SPERSE silica and alumina dispersions and gain even more strength.
CAB-O-SPERSE® DISPERSIONS FOR PRESSURE SENSITIVE ADHESIVES

RELATIVE PERFORMANCE IN ADHESIVES

Suggested products:

General guidelines:
- Large particles facilitate formulation stability and yield greater surface roughness
- In anionic systems, cationic CAB-O-SPERSE products promote the best adhesion performance, and anionic CAB-O-SPERSE products promote the best balance of performance and formulation stability

Legend:
- Material
- Silica
- Silica NH₃
- Silica KOH
- Silica Proprietary
- Silica Anionic
- Silica Cationic
- Alumina
- Particle charge
- Anionic
- Cationic
- pH
- High
- Low
- Adhesive strength
- Note: Data are for constant solids loading

FORMULATION INFORMATION

Waterborne PSA formulation in %wt.:
- Water (25-35%)
- Polymer (40-55%)
- Tackifier or plasticizer (5-15%)
- Viscosifier (0-15%, optional)
- CAB-O-SPERSE metal oxide (2-10%, dry particle wt.)

For waterborne organic tackifiers consider rosin ester dispersions or resin dispersions, such as:
- Tacolyn™ 3179 H
- Tacolyn 5193

For removable PSAs, consider less tacky acrylics, such as:
- ROBOND™ PS-8120 HV

For more permanent waterborne acrylic systems consider:
- ROBOND PS-90
- Acronol® 220

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