Daratak® PVAc Latex
Recommendations and Formulations
Polymer Recommendations and Formulations

Polyvinyl acetate emulsions are employed in a wide variety of adhesive uses. Compounding optimizes many inherent properties in these emulsions.

Paper and Board Adhesives

One of the major applications of polyvinyl acetate-based adhesives is in the manufacture of paper and paperboard products. Because of their inherent quick grab and rapid gain in bond strength properties, Daratak® polyvinyl acetate emulsions are particularly suitable for high-speed box-making adhesives. Selection of the proper Daratak emulsion for formulating in a paper or board adhesive depend on the end use.

Critical Requirements

- Quick Grab
- Rapid gain in bond strength
- Machineability
- Retack in certain applications

Emulsion Recommendations

<table>
<thead>
<tr>
<th>Emulsion</th>
<th>Description</th>
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<tbody>
<tr>
<td>Daratak 56L</td>
<td>Used where resistance to cold flow and high temperature requirements exist, such as bags which are used in a hot, humid environment. As a fast film former, it is used where quick fiber tear is desired.</td>
</tr>
<tr>
<td>Daratak 61LT</td>
<td>Used where borax-tolerance is required.</td>
</tr>
<tr>
<td>Daratak B</td>
<td>A very fast copolymer emulsion designed for use on difficult-to-adhere-to substrates.</td>
</tr>
</tbody>
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Wood-Bonding Adhesive

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Daratak polyvinyl acetate emulsions are used in wood-bonding adhesives because of their excellent affinity for wood.

**Critical Requirements**
- Good bite and wood fiber tear
- Adequate open time
- No separation
- Good mechanical handling
- Good bond aging
- No cold flow

**Emulsion Recommendations**
- **Daratak 56L**: Used where heat resistance and cold flow resistance are required.
- **Daratak 17-200**: A good, general purpose wood adhesive polymer used where open time is important.

**Wood Adhesive With a Long Open Time**

| Total Solids | 52-54% |

<table>
<thead>
<tr>
<th>Components</th>
<th>Pounds</th>
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</thead>
<tbody>
<tr>
<td>Santicizer 160 Plasticizer</td>
<td>2.00</td>
</tr>
<tr>
<td>Phenol</td>
<td>1.60</td>
</tr>
<tr>
<td>Daratak 56L</td>
<td>200.0</td>
</tr>
<tr>
<td>Polyvinyl Alcohol*</td>
<td>15% solution</td>
</tr>
<tr>
<td>Water</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

**Directions**
1. Add Santicizer 160 and phenol in mixer and stir until phenol is all dissolved.
2. Add Daratak 56L to mixture of plasticizer and phenol and stir until smooth.
3. Add polyvinyl alcohol solution and stir until a homogenous mixture is obtained.
4. Use water to adjust total solids and viscosity.

Prepare a stock solution of polyvinyl alcohol by slurrying 5.5 pounds of Elvanol 51-05 and 9.5 pounds of Elvanol 72-60 in 85 pounds of water at room temperature with good agitation. Heat for 20-25 minutes at 185-190º F. Add water for viscosity or solids control.

**Wood Adhesive**

Owensboro Specialty Polymers, Inc.
5529 Highway 2830
Owensboro, KY 42303

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Total Solids 57-59%
Viscosity 4,000-5,000 cps

Components Pounds
Daratak 17-200 800
Santicizer 160 Plasticizer 24
Phenol 8
Daxad® 30 32
Walnut Shell Flour 80

Directions
1. Add Daratak 17-200 to mixer.
2. Mix Santicizer 160 and Phenol and add to Daratak 17-200 stir until smooth.
3. Prepare a slurry of walnut shell flour by slurring in mixture of water and Daxad 30 at room temperature. Add slurry to the mixture of 1 and 2 and stir until a homogeneous mixture is obtained.

Wood Adhesive
Total Solids 55%
Viscosity 1,500-2,000 cps

Components Pounds
Daratak 17-200 100.00
Santicizer 160 Plasticizer 1.65

Directions
1. Mix Daratak 17-200 and Santicizer 160 and stir until a homogenous mixture is obtained.

Non-Porous Surface Adhesives
Daratak Polyvinyl acetate emulsions have been used in adhesives for bonding non-porous to porous substrates for some time. This can be accomplished by properly compounding a homopolymer to obtain specific adhesion to the non-porous stock or by utilizing one of our specialty copolymer emulsions.

Critical Requirements
Good Adhesion
Good bonding aging
Machineability
Temperature resistance
Water resistance

Emulsion Recommendations
Daratak B  Used to obtain adhesion to certain non-porous surfaces such as vinyl sheeting, aluminum foil, and PVdC coatings.
Daratak 61LT  Used to obtain adhesion to foil substrates.

Aluminum Foil Adhesive
Total Solids  56-58%

Components  Pounds
Daratak 61LT  100
Plasticizer #8  15
1,1,1-Trichloroethane  5
Water  q.s.

Directions
1. Add the Daratak 61LT and Plasticizer #8 together and mix thoroughly.
2. Blend in 1,1,1-trichloroethane and stir until homogeneous.
3. Add water to adjust the viscosity and total solids as desired.

Vinyl Sheeting Adhesive

Components  Pounds
Daratak B  100
Oleic Acid  5
1,1,1-Trichloroethane  5

Directions
1. Add the ingredients as listed, stirring well after each addition.

Fire Retardant* Vinyl Sheeting Adhesive
Total Solids  61-62%

Components  Pounds
Owensboro Specialty Polymers, Inc.  5529 Highway 2830
Owensboro, KY 42303

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Owensboro Specialty Polymers, Inc.

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Highway 2830

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Owensboro, KY 42303

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Benzoflex 50          3
HEC                  10-15
Water                q.s.

Directions
1. Add Benzoflex 50 to Daratak 61LT and mix until homogeneous.
2. Add desired amount of stock solution of HEC and mix until smooth.
3. Add water to desired viscosity.