



Owensboro Specialty Polymers, Inc.
Chemistry that Connects, People that Care

Daratak[®] Adhesive Emulsions-Adhesives Fact Sheet

Owensboro Specialty Polymers, Inc.
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OSP_TDS_DaratakFactSheet1_Rev.1

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Formulating Type III Interior Wood Glues

If an application requires an excellent general-purpose wood adhesive, then Daratak 17-300 will satisfy all of your bonding requirements.

Daratak 17-300 Properties for this application

1. High viscosity (3000-4000 cps) and high tack
2. High total Solids (54-56%)
3. High level of PVOH for superior wood adhesion
4. Freeze/Thaw stability
5. Compounding latitude-readily accepts additives to lend for use on wide range of applications.

Many additives are often added to Daratak 17-300 to modify performance. Usually polyvinyl alcohol is added to the wood adhesives (1.5-4.0 phr) to:

1. Increase viscosity
2. Lengthen open-assembly time (esp. with LMW types)
3. Improve adhesion to wood
4. Improve mechanical stability
5. Decrease tendency to cold creep (esp. with HMW types)
6. Improve solvent resistance (esp. with HMW types)
7. Increase water resistance (with fully hydrolyzed grades)

Starch is often added (along with microbiocides) to:

1. Decrease the cost of finished formulation
2. Lengthen the open-assembly time
3. Raise the viscosity
4. Decrease the tendency to cold creep

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5. Improve the sandability of the dried film
6. Improve the solvent resistance

Other fillers (aside from starch) include wood flours, CaCO_3 , kaolin clays and borax. If borax is used (as well as certain starches) our Daratak 61LT would be more suitable because it is borax compatible and Daratak 17-300 is not.

Special Problems

One problem that occurs frequently is the discoloration of the glue line after bonding wood. This is because under acidic conditions iron salts react with tannic acid in wood yielding dark colored complexes. Therefore, it is necessary to buffer the adhesive to a pH of 7.0 or add 1% oxalic acid or phosphoric acid, which will react with the iron salts to form colorless complexes.

Plasticizer addition can improve adhesion. However, these are usually minimized to levels below 5% because they can accelerate cold-creep and adversely affect the sandability of the glue line.

Questions

If cold temperature coalescence is a problem, solvents and coalescing aids can be added which will evaporate and not adversely affect the bond properties.