



Polymer Additives

QUESTION(S)

1. What is the difference between a "linear" plasticizer and a "branched" plasticizer?

Answer:

The main difference between linear and branched plasticizers is their chemical structure or carbon backbone. In a linear plasticizer the carbon atoms are mostly arranged in a straight chain while in a branched plasticizer the carbon atoms are arranged similar to the branches in a tree. Most commercially available general-purpose phthalate plasticizers are a mixture of the two structures. Generally a more linear plasticizer structure will improve plasticizer efficiency, improve low temperature properties and be less volatile. A more branched plasticizer tends to have improved soapy water and solvent extraction properties.

2. In the plastic industry, I've heard the terms "Primary antioxidants" and "Secondary antioxidants". What is the function of these antioxidants in plastics?

Answer:

A primary antioxidant is added to protect the polymer from degradation over long time periods or the plastic product's life time, secondary antioxidants usually are added to provide color stability during processing. Ashland Distribution sells both primary antioxidants (Ashland Antioxidant AO 576 and AO 610) and secondary antioxidants (Weston and Ultrinox phosphites from GE Specialty Chemicals).

3. I'm making plastic parts using an injection molding machine and the parts are sticking to the mold. I've heard of "internal mold releases" and "external mold releases", What are the differences?

Answer:

Internal mold releases are additives that are added to the resin/polymer system during processing to enhance the release of the part from the mold. External mold releases are materials that are sprayed or coated on the mold to affect the release of the plastic part. Ashland Distribution sells both kinds of mold release depending upon the resin/polymer system or the application.

4. I'm looking for a plasticizer for PVC film that has to be FDA approved and withstand low temperature for food wrap. Does Ashland have a recommendation?

Answer:

The plasticizer that works the best in this application is Dioctyl Adipate. Dioctyl Adipate has many U.S. Food and Drug Administration approvals for use in food wrap and has excellent low temperature flexibility that is needed in food wrap.