

MIXING PROCEDURE FOR PLASTISOLS

1. Charge 80% of total liquids into mixing vessel. This amount will change based on the viscosity of the system and the type of mixing equipment used to produce the Plastisol.
2. Start the agitator.
3. Add solids in the following order:
 - a. Fillers
 - b. Blending resins
 - c. Dispersion resins

For best results, powders should be added at such a rate that at no time is there a layer of dry powder floating on top of the liquid. Dump powders into the vortex created by high speed mixers, or add powders slowly in the case of low speed mixers.

Periodically, during the mixing process, inspect the mixing vessel inside surface for powder build-up. If found, brush or scrape the powder from the surfaces, into the plastisol.

4. The temperature of the mix should be monitored and at no time should it be allowed to rise above 95°F. The temperature can be controlled by the utilization of a water-jacketed mixer if available, or by the addition of some of the 20% liquids originally held back.

Exposure of the Plastisol to elevated temperatures will result in higher viscosities and poor viscosity aging characteristics.

5. It is important to take the mix through a high shear stage in order to physically break down most of the agglomerates. This minimizes viscosity aging problems due to the solvating action of the plasticizer.
6. After no more lumps are observed in the mix, the remainder of the liquids should be added.

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7. Continue mixing to achieve homogeneity. The time required to achieve a good mix depends upon the ingredients, size of the batch, and configuration of the mixing equipment.
8. Although de-aeration may not be desirable in all cases (i.e., certain foam formulations), it may be a necessary step. De-aeration may occur naturally through aging, or mechanically through the use of de-aeration equipment.

Improper handling of the Plastisol, after de-aeration, may reintroduce air into the Plastisol. Care must be taken to avoid allowing the Plastisol to **“free fall”** during subsequent handling and processing.

9. Filtration of the Plastisol is recommended to remove any undispersed material or fibers from paper bags. Filtration can be accomplished by passing the Plastisol through any type of cloth or screen type filter. For improved productivity, filtration system should be pump based, rather than based on gravity alone.

Mesh sizing should be small enough to insure removal of particles larger than the part thickness or any component of the process (i.e., spray nozzle orifices), but large enough to minimize excessive loss of productivity or excessive removal of large particle raw materials (i.e., coarse blending resins, fillers, etc).

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