

Dry Liquid Dispersions

The mixing superiority provided by the Processall Mixmill device has allowed the evolution of a machine that is capable of processing beyond mixing to include drying and dispersing

Dry Liquid Dispersions are processes where a viscous liquid is added to a carrier such as silica or other inert ingredients. The viscous liquids are difficult to weigh and completely add to various formulations. Making the Dry Liquid Dispersion yields a solid, somewhat like brown sugar in consistency, that allows for a more accurate and complete addition of the component to the formulation for further processing.

In general, the Dry Liquid Dispersion is useful in the Rubber or Plastic compounding industries. These industries have materials that fit the criteria requiring the use of this process. The customer must supply the inert carrier material so that it fits into their final product. Usually this inert carrier is a silica based product because of the high volume of internal pores in the particles. These pores, when full of liquid, help to hold the liquid and allow for the final product to have a more manageable consistency.

Typical Dry Liquid Dispersion loading are between 65-70% loading. This means that the inert carrier will hold approximately twice (2X) its charge weight of the liquid. Normally the liquid is injected through nozzles located in front and underneath of the mills in the mixer. However, the liquid can sometimes be added through ports with open pipe lances in the front or downfall locations. Care should be taken to ensure that the liquid is placed into the powder, not on the shaft or mixer walls.

The liquid addition should be as quick as possible with heating of the liquid being helpful sometimes. Use of No-Clog nozzles, which close upon cessation of the liquid flow, are useful. These poppet style valves allow for large capacity liquid flows and provide a flat sheet spray pattern. This flat sheet spray pattern helps spread the liquid while the mill blade set up does the actual dispersion. Testing of this process requires monitoring main drive power draw and watching the mix consistency. The batch can be lost quite fast into a non-recoverable paste from too much liquid or from long cycle times (<5 minutes). Mill blade set up is also crucial in this process so as to prevent too much shear and production of paste. Quick discharge is also a priority so the customer must understand what they will need to provide for collection and packaging of the product.

If you have any questions about dryer equipment and techniques, please feel free to contact one of our experts. Processall is a leading provider of chemical processing horizontal plow mixers, reactors, dryers, sterilizers and extractors



Contact us today

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