

Antacid Dispersion

Description

Antacid preparations may be powders, tablets or a liquid dispersion. They are used for relief of hyperacidity and the discomfort of stomach ulcers. They are usually mixtures of an insoluble alkali-metal compound of an oxide, hydroxide or a carbonate.

Objective

Our interest concerns the liquid dispersion form. Through the use of homogenization, it is possible to provide viscosity control, reduce settling and furnish the smooth texture required of an internal medication. Homogenization also emulsifies any essential flavoring compounds included in the formula.

Equipment and Process

Most antacid compounds are prepared at ambient temperature and require only a simple premix kettle equipped with a suitable agitator. Premix is pumped to a homogenizer with a single-stage wear resistant homogenizing valve. Pressures range from 2500-5000 psi, depending upon the particular formulation. From the homogenizer the product may be delivered to filling equipment.

A typical formulation might be:

24 parts kaolin	6 parts acacia as flavor
24 " aluminum hydroxide	11 " dextrose
16 " bismuth subcarbonate	- water sufficient to
16 " calcium carbonate	make 20-40% solids
3 " sodium chloride	

Other formulations may call for a single compound such as milk of magnesia prepared from magnesium oxide or dihydroxyaluminum, aminoacetate, water and a suitable flavor. Usually, the solid ingredients are finely ground. The homogenizer does not grind particles but disperses them to their primary particle size. Therefore, it is advantageous to start with as small a particle size as possible for solids. Others are precipitated in an extremely fine form such as the calcium carbonates or magnesium oxides.

Testing

Routine testing of each batch for desired viscosity is done. In the initial development, shelf aging or centrifuge tests may be used to determine sedimentation rates.