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"Dutch Boy"

BENTONE 18 and 34

Gelling Agents
for
Organic Liquids



A Product Development of
NATIONAL LEAD COMPANY

51-53

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"Dutch Boy"

BENTONE 18 and 34

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BENTONE 18 and BENTONE 34 are organic compounds of montmorillonite* supplied as finely divided cream-coloured powders. The organic portion is linked to the montmorillonite through a stable chemical bond.

BENTONE 18 and 34 will thicken and gel a very wide variety of organic liquids. They will prove very useful wherever increased body or viscosity control is required. The thickening action imparted by the Bentones is relatively permanent, and unaffected by changes in room temperature. Gels formed from the Bentones are of the short, thixotropic type, not often produced in organic liquids by other gelling agents.

The expanded gel-lattice structure formed by the Bentones in organic media provides reinforcing characteristics that contribute to the strength of many resinous compositions. The Bentones also promote resistance to bleeding in usages where this is a problem.

Fields of Application

Due to the ability of "DUTCH BOY" BENTONE 18 and BENTONE 34 to gel organic media, they are used in the following products:

Paints	Rubbing Compounds
Varnishes	Drawing Compounds
Lacquers	Adhesives
Inks	Putty
Vinyl Dispersions	Caulking
Paint and Varnish Removers	Other Mastic Compounds
Waxes	Hydraulic Fluids

The usefulness of "DUTCH BOY" BENTONE 18 and BENTONE 34 in the fields listed above, suggests the further application of the Bentones in many other products.

* Montmorillonite is a hydrous aluminum silicate mineral having an expanding lattice.

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Table of Properties

	Bentone 18	Bentone 34
Composition	Organic derivative of a hydrous aluminum silicate mineral with an expanding lattice	Organic derivative of a hydrous aluminum silicate mineral with an expanding lattice
Color	Light cream color	Very light cream color
Form	Finely divided powder	Finely divided powder
Specific Gravity	1.88	1.80
Apparent Density	3.5 lbs./gal.	3.5 lbs./gal.
Fineness	Less than 5% retained on No. 200 sieve**	Less than 5% retained on No. 200 sieve**

General Application

The Bentones are very efficient gelling agents. They must be incorporated into organic liquids and resins properly, however, to secure full benefit from them. The following directions are offered for best results.

"DUTCH BOY" BENTONE 34

BENTONE 34 will thicken and gel straight non polar solvents, such as benzene, toluene, mineral spirits, and gasoline. It will also act on liquids of intermediate polarity, such as chlorinated solvents, vegetable oils, plasticizers, and resins. To obtain maximum effect in these systems, BENTONE 34 should be ground into the liquid on a paint or colloid mill. No heat or special pre-gelling medium is required.

"DUTCH BOY" BENTONE 18

BENTONE 18 will thicken and gel solvent mixtures which include both polar and non-polar solvents. Examples of such polar solvents are the Cellosolves, low molecular weight alcohols, ketones, and esters. In polar and non-polar solvent mixtures, grinding is generally not required. Dispersing BENTONE 18 in the non-polar or semi-polar solvent, and adding the polar solvent as the last step will give immediate thickening action. About 3 to 12% polar solvent concentration will give the most efficient gel formation. BENTONE 18 will not gel effectively in a straight solvent of only one type.

** When properly dispersed both BENTONE 18 and BENTONE 34 exhibit plate-like structure with an ultimate size of [illegible] microns in maximum dimension and approximately [illegible] microns in minimum dimension.

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