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VANDERBILT Technical Data

Latex Glossary

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Latex Glossary

Activity – The amount of functional material in a latex, dispersion or emulsion expressed as a percent of the total composition. Activity differs from "solids concentration" in that surfactants and auxiliary chemicals are not included.

Attritor – A mill designed for the wet grinding of powders to prepare dispersions. Grinding reduces the particles of the powders to a very small and uniform size (see Grinding Media, Stones).

Ball Mill – Sometimes called a pebble mill, a ball mill performs the same function as an attritor but in a different manner (see Grinding Media, Stones). Technically, the ball mill is the machine that rotates the ball mill jar.

Beater Addition – A process for making paper.

Centrifuging – A mechanical process for concentrating 30% field latex to 60% and higher. The operation relies on the difference in specific gravity between water (1.0) and the rubber polymer (0.91).

Chlorination – A treatment for latex articles to remove residual tack and reduce surface friction. This treatment facilitates the donning of latex gloves.

Coagulant – A chemical that is incompatible with the stabilization system of the latex. It destroys the ionic charges that surround the rubber particles and allows them to gel into a continuous film.

Coagulant Dipping – A manufacturing operation that employs a coagulant to deposit a rubber coating on a mold or former. Most latex gloves are manufactured in this manner.

Colloid – An intermediate state between a true solution and a suspension. Latex contains both suspended rubber particles and surfactants and other water-soluble chemicals.

Concentration – The amount of active and non-active ingredients in a latex, dispersion or emulsion, expressed as a percent of the total composition. It differs from "activity" in that all auxiliary and modifying materials, and impurities, are included.

Creaming – A chemical process for concentrating 30% field latex to 60% and higher. Like centrifuging, it depends on the difference in specific gravity between water (1.0) and the rubber polymer (0.91). Creaming agents are added to vessels containing field latex to hasten phase separation.

Dipping – The general term for the manufacture of latex articles by immersing formers in compounded latex. When the formers are withdrawn, they are covered with a continuous film of latex.

Dispersing Agent – A chemical that is used to keep solid particles in a dispersion from agglomerating or joining with other particles to form a cluster. They are usually electrolytes that separate the individual particles with like charges.

Dispersion – Solid particles suspended in water. A dispersion is the required medium for adding water-insoluble powders to latex.

Dry Parts – The amount of active ingredient in a dispersion, emulsion or solution that is added to 100 active parts of a latex.

Dunlop Process – A process for making latex foam articles.

Emulsifying Agent – A soap or an essential ingredient of a soap that is used to separate the droplets of an oil phase medium in water. A necessary ingredient for making an emulsion.

Emulsion – Droplets of oil, rubber and other water-immiscible materials suspended in water.

Enzyme Treatment – A process for treating natural rubber latex in order to reduce the allergenic effects of the protein.

Extrusion – A process for making latex thread.

Field Latex – Natural rubber latex as it is collected from the rubber tree.

Former – Sometimes called a “mold” or an “external mold”, a former is a shaped device used in the dipping process. A wet-gelled film of compound covers its surface after it has been immersed in latex.

Gel – Latex that has been uniformly coagulated, coalesced or destabilized while still in the colloidal state.

Gelling Agent – A chemical that uniformly destabilizes latex during the manufacture of useful articles.

Graft Latex – A term associated with a blend of natural rubber latex and polymethylmethacrylate.

Grinding Media – The flint stones or ceramic spheroids and ellipsoids used in attritors and ball mills for wet grinding. When they are agitated, solid particles caught between them are reduced in size.

Guayule – Latex harvested from the *Parthenium Argentatum* plant which is native to the southwest United States and Mexico. It is a potential alternative to *Hevea Brasiliensis* latex.

HA Latex – High ammonia latex.

Heat-Sensitized Dipping – A process for manufacturing latex articles by which gelled rubber films cover formers that have been preheated.

LA Latex – Low ammonia latex.

Latex – Tiny droplets of rubber polymer suspended in a water medium.

Leaching – A manufacturing process for removing surfactants and coagulants from rubber articles by immersing the gelled or dry (post leaching) films in a warm water bath.

Maturation – The slow colloidal crosslinking of a latex compound at room temperature.

Mold – A shaped device in the configuration of the finished article, upon whose surface a film of latex compound collects. The mold can be internal or external depending on which surface, inner or outer, the film is deposited (see Former).

Mud cracks – The valleys or striations in a latex film that are caused when the water is evaporated and the film shrinks.

Pebble Mill – See Ball Mill.

Phase Separation – The separation of a latex or an emulsion into distinct layers: one is comprised of water and water-soluble materials while the other predominantly consists of oil, rubber and water-immiscible materials.

Pinholes – Small holes in a latex film. Sometimes the films need to be stretched in order to observe the pinholes.

Precure – 1. The colloidal crosslinking in a latex compound that takes place during maturation. It is frequently measured by the chloroform test. 2. The random, undesirable and uncontrolled crosslinking that takes place in a latex compound at room temperature. It is evidenced by a rapid increase in viscosity.

Prevulcanization – A manufacturing process to initiate desirable, homogeneous and controlled colloidal crosslinking of a latex compound.

Protein – Nature's latex stabilizer.

Quick Break – The rapid coagulation of latex under pressure. A term frequently used for the relative development of tack in a latex adhesive.

Stabilizer – 1. A chemical, natural or synthetic, used to preserve the integrity of a latex by preventing it from coagulating. 2. In the manufacture of latex foam, it is the chemical or agent that prevents the gel structure from collapsing prior to the evaporation of the water.

Stones – A colloquialism for "grinding media" resulting from the original use of flint stones in pebble mills (see Grinding Media).

Straight Dipping – A manufacturing process for latex articles that does not use coagulants or heat sensitizers. Sometimes called Dip and Dry. Thin-walled condoms are manufactured by this method.

Surfactant – A class of chemicals added to a latex, dispersion or emulsion to modify the water medium, the suspended particles or the interface between the two. Within this general classification are stabilizers, dispersing agents, wetting agents, foam and surface tension modifiers, thickening and suspending agents, soaps and emulsifiers.

Suspending Agent – Sometimes called "thickener". A material, natural or synthetic, that increases the viscosity of the latex, dispersion or emulsion. The small solid or liquid particles are thereby suspended in the water medium.

Synergist – A material that does not perform a function by itself but improves the performance of the primary material. An antioxidant synergist is the best example. While not an antioxidant, the synergist improves its performance.

Talalay Process – A manufacturing process for latex foam.

Thickener – See Suspending Agent.

Viscosity – A measured resistance to flow. In simple terms it is a description of pourable liquids: molasses is a high viscosity material and water is a low viscosity material.

Wet Parts – Regardless of the activity or concentration, it is the total amount of a dispersion, emulsion or solution added to 100 active parts of latex.

Wetting agent – Sometimes called a “detergent”. A chemical that reduces the surface tension of water. In dispersions, it allows for the rapid incorporation of powders into water. In adhesives and coating compounds it is a rheology modifier and allows increased flow over or absorption into a substrate.

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