

STICK IT ON!

Adhesives touch our lives every day. They are never more than an arm's length away, even though we may not realise it. They are everywhere... in the furniture, in your footwear, in your bag, in the artefacts, even in this magazine!

Making Hide or Skin or Fish glue

The hides and other scraps are washed to remove dirt and are soaked for softening, making Stock. The Stock is passed through a series of water and lime baths to help break them down. The hides are rinsed with weak acids to remove the lime.

The stock is cooked at high temperatures or pressures, 160°F (70°C), to break down the collagen. Three or four clean water treatments are performed at increasing temperatures. The resulting liquid, "glue liquor", is extracted and reheated to thicken.

Chemicals, alum or acid followed by egg albumin cause impurities to precipitate or separate out of the glue. Filtration methods, mechanical, paper, or bone char filters, may also be used to clean the glue.

Vacuum evaporators are used to help concentrate the runny glue, which is then dried into either sheets or blocks. These are pumped into bottles or jars for sale.

Different additives, sulfurous acid, phosphoric acid or alum, are mixed with the glue liquor to make brown, clear, or white glue. Zinc oxide is added to produce white "school glue."



Some of the common types of Adhesives:

Animal glues- made from the protein extracted from bones, hide, hoofs and horns of animals by boiling.

Fish glue- protein-based glue made from the skins and bones of fish.

Casein glue- made from a protein isolated from milk.

Starch- a carbohydrate extracted from vegetable plants such as corn, rice, wheat, and potatoes.

Cellulose adhesive- made from a natural polymer found in trees and woody plants.

Rubber-based solvent cements- adhesives made by combining one or more rubbers or elastomers in a solvent.

Epoxies- adhesive systems made by a complex chemical reaction.

Hot melt adhesives- thermoplastic polymers that are tough and solid at room temperature, but are very liquid at elevated temperatures.

Other adhesives that represent higher technology and/or complicated chemical processes include: **RTV Silicone adhesive, Anaerobic adhesives and Cyanoacrylates.**

- Early hunters may have seen improvement in their aim by joining feathers to arrows with beeswax, a primitive form of adhesive.
- The Tower of Babel was probably built with the aid of mortar and tar or pitch.
- Carvings in Thebes (circa 1300 BC) show a glue pot and brush to bond veneer to a plank of sycamore.
- The Egyptians also used glue to produce Papyrus. Greek and Roman artists used glues extensively; mosaic floors and tiled walls and baths are still intact after thousands of years!
- The world's largest glue manufacturer is a dairy called Borden Company.