

Polymers

A lot of everyday items are made from polymers.



A polymer can be thought of as resembling numerous beads on a string. Each monomer, or bead, is linked (bonded) to the next to form chains composed of thousands of atoms in a row. It is the huge size of polymer chains that gives the molecules many of their special properties.

Formulations

A material containing a polymer with various additives, modifiers and colour pigments is a formulation.

These formulations have specific properties in order to fulfil the specific application needed.

Instant Snow Polymer

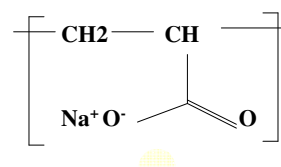
When water is added to this granular white powder, it instantly expands to 40 times its original volume, producing a snow-like material. Its sodium polyacrylate, the 'diaper' polymer!



Instant Snow Polymer is made by cross-linking molecules of the sodium polyacrylate polymer. When water is added, the individual clusters internally hydrate and expand, forming small, fluffy clusters that do not cling to surrounding clusters. This appears as a powdery snow. When more water is added, the water molecules hydrate the external surface of these clusters, and the clusters begin to adhere to one another. This appears as slush.

Materials

Instant Snow Powder
Distilled Water
Ziptop bags



Procedure

- ❖ Add one teaspoon of the polymer to a ziptop bag.
- ❖ Add 40-50 mL of distilled water to the bag and observe the results
- ❖ After drying, the material will return to its original condition and can be used again.