HySorb®: How modern superabsorber makes life easier

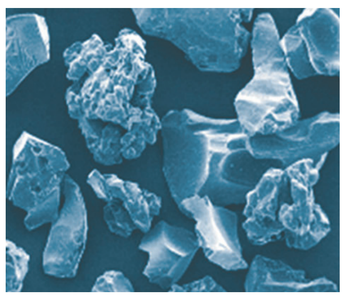
We create chemistry

What is superabsorber?

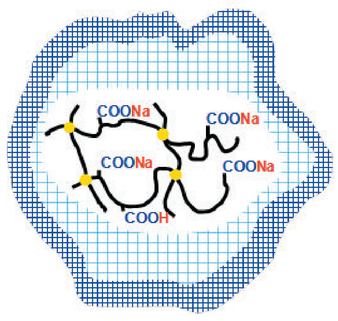
SAP stands for **S**uper**a**bsorbent **P**olymer

- Superabsorbers are a special granular plastic that can absorb and bind large amounts of aqueous liquids like urine.
- Superabsorbent polymers are used primarily for diapers and other hygiene products.
- They ensure that skin stays dry and healthy.

Superabsorber granules

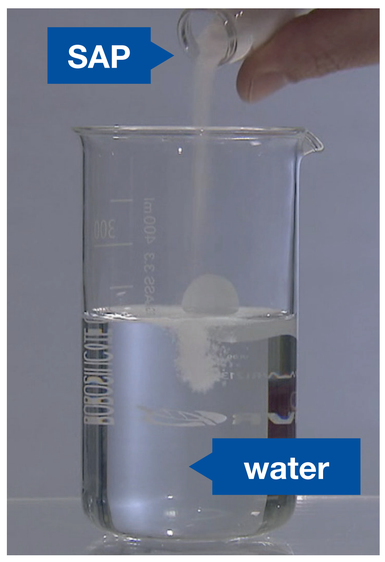


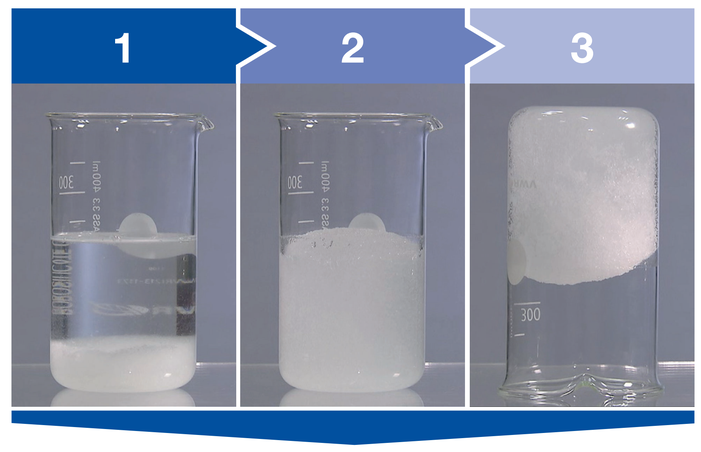
Superabsorber under an electron microscope



Structure of a superabsorbent polymer

A quick experiment

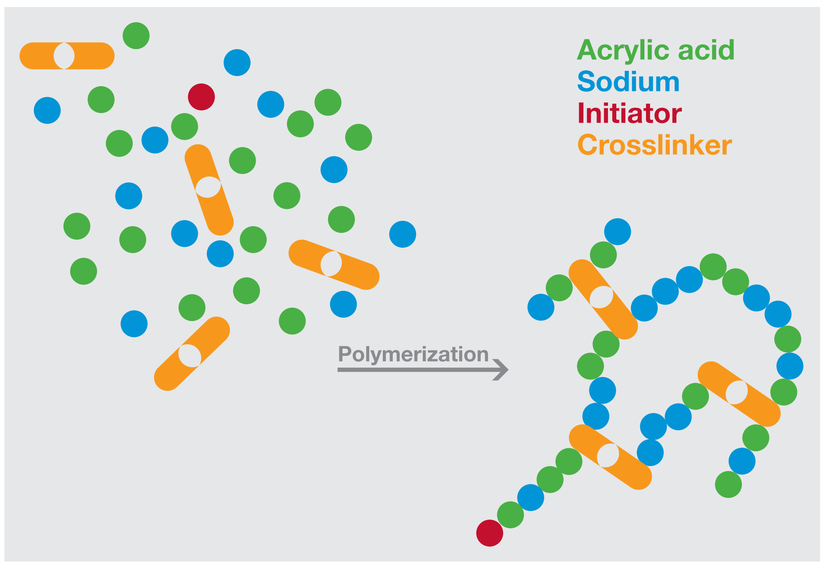




1 g of superabsorber can absorb up to 500 g of water

How does HySorb®, the BASF superabsorber work?

Superabsorber is produced by polymerization



1. Superabsorber is made by combining (polymerizing) single molecules of **sodium acrylate** and **acrylic acid** to form long molecular chains. The polymerization is activated by an **initiator** and a **crosslinker** connects the single molecules together to form a polymer network.
2. The **crosslinker** ensures that the granules remain insoluble when exposed to moisture, maintaining their absorbent properties and structure.
3. In the dry polymer granules the functional salt groups along the crosslinked chains are tightly packed together.
4. Upon contact with aqueous liquid the sodium ions become dissociated generating an osmotic pressure which drives more liquid into the Superabsorber binding it tightly within.

Superabsorber Performance: an integral part of modern diapers:

- High absorption capacity (CRC = “Centrifuge Retention Capacity“)
- Absorption capacity even against an external pressure (AAP = “Absorption against Pressure")
- Permeability: Optimal fluid distribution, which is the ability to transport liquid through a bed of swollen superabsorber.

HySorb® Superabsorber – our contribution to sustainable development

Development of diapers since 1980

Modern diaper technology made possible by efficient superabsorber performance

- Fast absorption of large amounts of urine helps keep skin dry and healthy
- Thinner diapers made possible by the reduction of fluff due to more efficient superabsorbers
- Odor control enables people with incontinence to lead a normal active social life
- Optimal interaction with other diaper components leads to a continuous improvement of diaper performance
- Superabsorber made with renewable raw materials helps to conserve natural resources