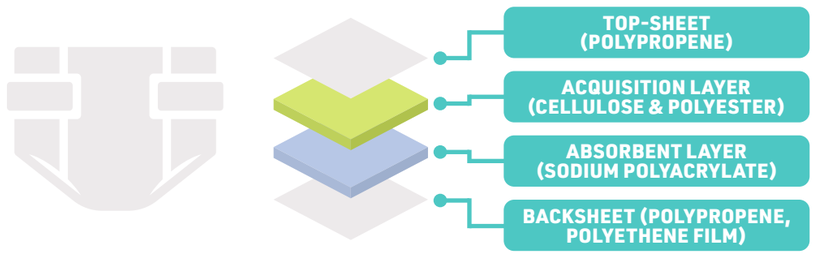
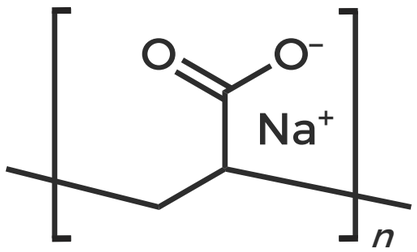
THE CHEMISTRY OF DISPOSABLE NAPPIES

HOW DO NAPPIES ABSORB URINE?



Disposable nappies are composed of a number of layers. The baby's urine is channeled to a layer which contains a super-absorbent polymer, sodium polyacrylate. This polymer forms a gel as it absorbs liquid, collecting the baby's urine and preventing wetness.



SODIUM POLYACRYLATE (SPA)

1 GRAM SPA... ● **...ABSORBS 30 GRAMS OF URINE!**

Sodium polyacrylate absorbs thirty times its own weight in urine. The cotton in the nappy also absorbs urine. Babies up to one year of age produce 2 millilitres of urine per kilogram of their body weight per hour – approximately 15 grams of urine per hour for the average six-month-old.

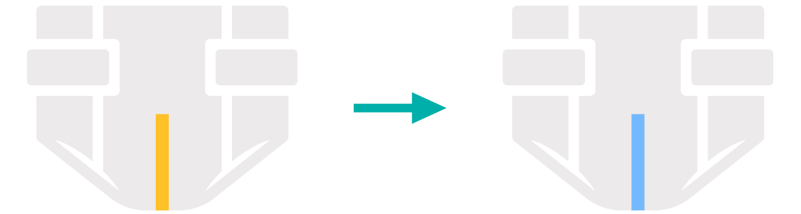
HOW MANY NAPPIES PER CHILD?

5,000 NAPPIES
(IN TOTAL, ON AVERAGE)

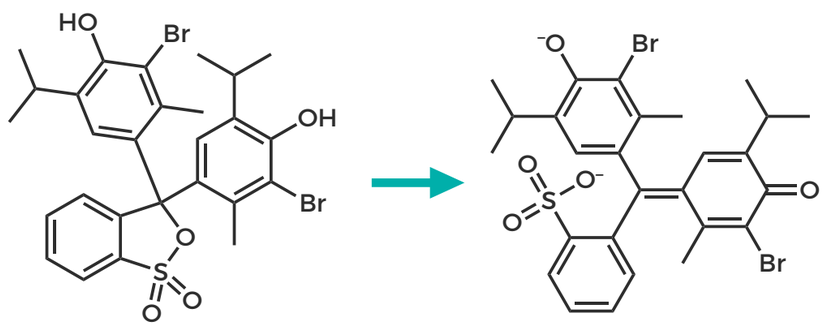
The average child requires around 5,000 nappy changes in total. It's estimated that a disposable nappy takes 450 years to decompose in landfill.

HOW DO WETNESS INDICATORS WORK?

Some nappies include wetness indicators to show when a baby's nappy is wet and needs changing. This can be accomplished in different ways, such as the use of chemicals that detect moisture or a change in acidity.



DRY – YELLOW → **WET – BLUE**



BROMOPHENOL BLUE

YELLOW (pH<6) **BLUE (pH>7.6)**

One method of wetness detection uses a pH indicator called bromophenol blue. Bromophenol blue is yellow when the nappy is dry, but the alkaline pH of urine causes its colour to change to blue.