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.

HOW MANY NAPPIES PER CHILD?

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.

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.

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.