THE CHEMISTRY OF SUPERGLUE

Superglue is vital for quick repair jobs, but was actually discovered by accident – twice! It owes its strong adhesive nature to the particular chemicals it's composed of. In this graphic, we take a look at them, and how they react to keep things solidly stuck together.

THE HISTORY OF SUPERGLUE

1942

Cyanoacrylates discovered during WWII search for gun sight plastics. Stick to everything, so discarded.

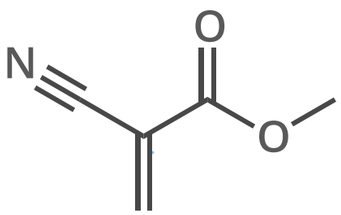
1951

Cyanoacrylates are rediscovered during research looking for polymers for jet canopies.

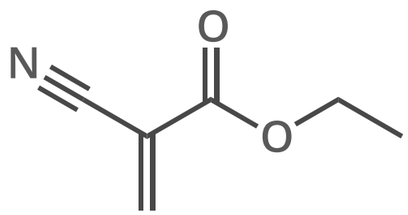
1958

Their potential finally realised, the cyanoacrylates are developed into a glue which eventually becomes available commercially in 1958. Numerous other manufacturers follow suit.

THE CYANOACRYLATES



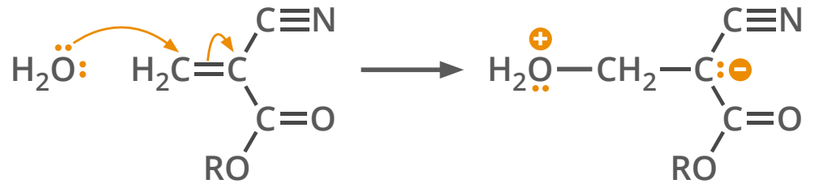
METHYL CYANOACRYLATE



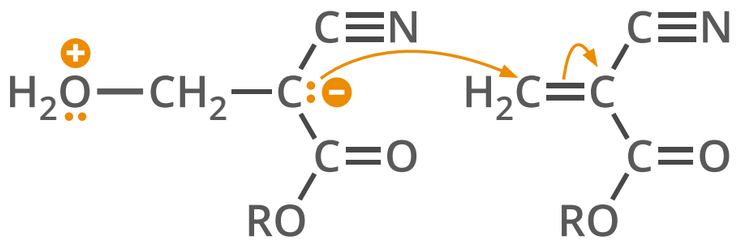
ETHYL CYANOACRYLATE

The most commonly used cyanoacrylate in superglue today is ethyl cyanoacrylate, but others, such as methyl cyanoacrylate, can also be used. Medical grade cyanoacrylates such as 2-octyl cyanoacrylate can be used to close up wounds.

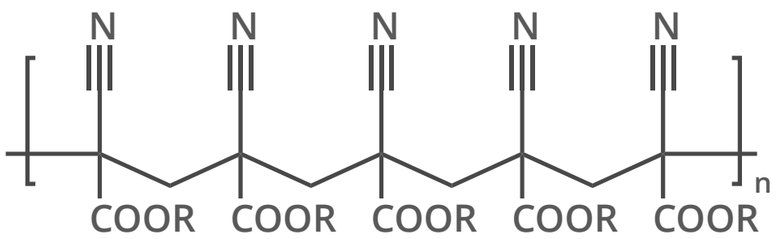
HOW SUPERGLUE WORKS



Cyanoacrylates 'cure' in the presence of water. Only a small amount of water is required to kick off the reaction – even the water vapour in the air is enough.



The reaction produces an anion which can add to more of the original cyanoacrylate, a process that repeats to form the adhesive polymer chains.



EXAMPLE SECTION OF THE CYANOACRYLATE POLYMER STRUCTURE