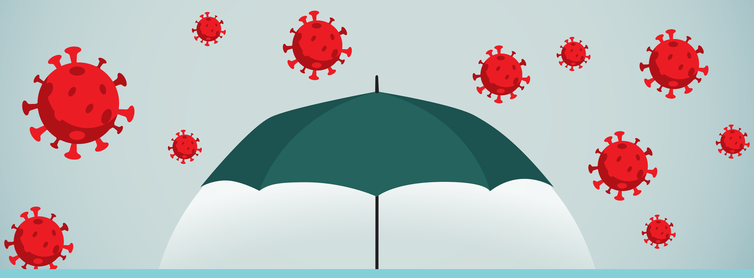
HOW AN ANTIMICROBIAL WORKS

UNDERSTANDING THE BASIC TECHNOLOGY OF THE ANTIMICROBIAL AND HOW IT REPELS BACTERIA & SOME VIRUSES



An **ANTIMICROBIAL FORMULA** can be applied to almost any surface to provide lasting protection against micro-organisms

An antimicrobial formula, or **Si-Quat** (Trimethoxy silyl propyl dimethyl octadecyl ammonium chloride), is composed of 3 parts.

The 1ST PART is a Silane Base

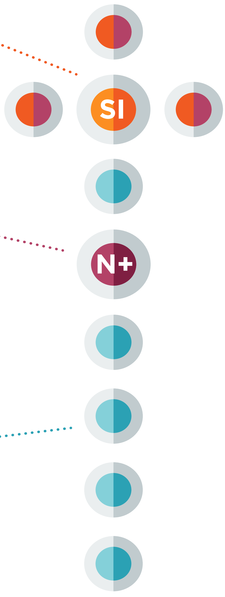
It serves as the antimicrobial anchor. The anchor is formed by hydrolysis reactions that can bond an antimicrobial to almost any surface. This allows for cross-linking with other molecules.

The 2ND PART is a centrallized, positively charged nitrogen

This plays a positive role in the active nature of an antimicrobe. The cell membranes of microbes are negatively charged. When they come near this positive charge, the microbes are drawn towards the active surface and killed.

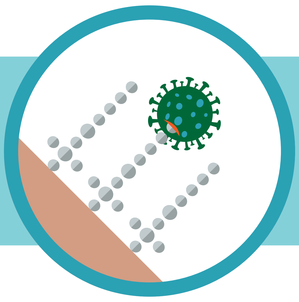
The 3RD SEGMENT acts as the edge which strikes the initial blow to offending microbes

This segment is a long molecular chain that acts like a sword. It pierces the cell membranes of all microbes that encounter it.



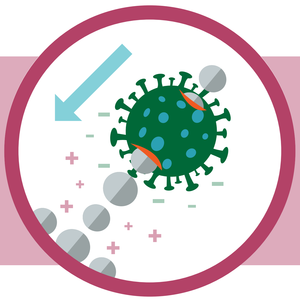
The **3 PARTS COMBINE** to give the formula a unique and effective mode of action

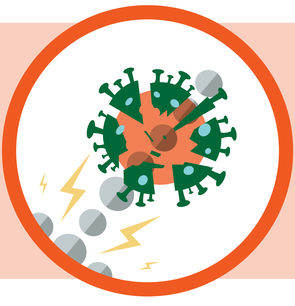
Once an antimicrobial is bonded to a surface, **it's ready for defense!**



FIRST:
The **microbe is punctured** by the long molecular chain (sword).

SECOND:
The positive/negative attraction of the **nitrogen draws the microbe further down onto the sword.**





THIRD:
The cell membrane of the microbe has contact with the positive charges in the anchor. **The membrane is electrocuted and blown apart** delivering a reliable kill.

This process transfers nothing from the cell of the microbe into the antimicrobial surface, so it's ready for the next attack. The formula will continue working at **FULL STRENGTH.**