

DID YOU KNOW?

Fast Facts About Quat-Based Disinfectants

1. “Quat” is an abbreviation commonly used for any quaternary ammonium compound.
2. Quats are one of the key types of disinfectant ingredients used worldwide to help reduce the number of microorganisms on surfaces. (The others include alcohols, aldehydes, biguanides, halogens, heavy metals, ozone, peroxides, and phenolics.)
3. Quat-based disinfectant products are used on hard, non-porous surfaces. These include walls, floors, door knobs, elevator buttons, bathroom fixtures and the like. Quats are widely used in hospitals, schools, commercial buildings, foodservice and food chain applications, veterinary clinics and other locations in virtually every industry. Quat-based products are also available for household use.
4. The antimicrobial properties of quats have been recognized for nearly a century. Commercially-formulated products were first introduced in the 1930s and have been in use ever since.
5. Today, many quat-based disinfectants are “one step” products. This means they clean *and* disinfect.
6. The U.S. Environmental Protection Agency (EPA) registers quat-based disinfectants after assessing their efficacy and safety. The EPA registration number is found on either the front or back of the label.
7. There are more than 30 different quat compounds registered for use in formulating cleaning, sanitizing, and disinfecting products.
8. Quats are shown in the active ingredients list on the label as compounds ending in “ammonium chloride” or “ammonium saccharinate”. (Typically these include alkyl dimethyl benzyl ammonium chloride, didecyl dimethyl ammonium chloride, and/or dimethyl benzyl ammonium saccharinate.)
9. Quat-based products, depending on their formulations, kill a wide range of bacteria, viruses, molds, and fungi. For example, there are 30 formulations used in more than 1000 products registered by the EPA to kill norovirus, a virus commonly infecting school populations every year. For a list of products formulated to kill COVID-19 and other emerging pathogens see the EPA’s N list (<https://cfpub.epa.gov/wizards/disinfectants/>) and Q list (<https://www.epa.gov/pesticide-registration/disinfectants-emerging-viral-pathogens-evps-list-q#evps>).



For norovirus, see the EPA’s G list: <https://www.epa.gov/pesticide-registration/list-g-antimicrobial-products-registered-epa-claims-against-norovirus-feline#products>

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10. Quats kill infectious agents such as bacteria by penetrating the cell wall, causing the death of the microorganism.
11. Product formulators use one or more quats to create their own branded or private label end-use consumer and commercial products. These are available as sprays, wipes, and ready-to-use liquid formulations. Commercial products are also available as dilutable concentrates.
12. When quats are applied using spray bottles, the droplets are of relatively large size (a “coarse spray”) and settle quickly to the surface being disinfected. These compounds are stable in liquid form, so they do not give off harmful/hazardous vapors.²
13. Following the label instructions is important to assure efficacy. Quat-based disinfectant products must be applied so that the surface is thoroughly wet. The disinfectant liquid must remain in place for the full contact time indicated on the label (up to 10 minutes). Surfaces should be allowed to air dry. Most formulations are “no-rinse” products.
14. Many products we use daily contain biocidal quats, including personal care formulations such as shampoos, cosmetics, contact lens cleaners, and hand sanitizers. These quats help to reduce the growth of microorganisms in these products. The FDA regulates products used on humans and on animals.

When using a product, always read and follow label directions to assure proper and effective cleaning, sanitizing, and disinfection. Note the length of time that the product must be on the surface to assure sanitizing and disinfection efficacy.

¹US Environmental Protection Agency Office of Pesticide Programs. List G: EPA’s Registered Antimicrobial Products Effective Against Norovirus (Norwalk-like virus). Jan 9, 2009.

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