Virucidal efficacy of Non-Alcoholic Disinfectant for Hands and Surfaces

Viruses are small infectious agents replicating only inside of living cells of their hosts. They can infect all types of life forms like humans, animals, plants and microorganisms. Usually they have a narrow host range.
There are 2 main groups based on their structure: **enveloped and non-enveloped viruses**. Enveloped viruses have a lipid envelope which is relatively sensitive to desiccation, heat and detergents. They are easier to be inactivated by biocidal active substances than non-enveloped viruses.

Examples for **enveloped viruses** are listed below:

- Herpesviruses (e.g. Epstein-Barr virus, Herpes simplex, Bovine alphaherpesvirus 1 (causing Bovine Rhinotracheitis), suid herpesvirus 1 (causing pseudorabies=Aujeszky's disease))
- Poxviruses (e.g. smallpox, vaccinia virus)
- Hepadnaviruses (e.g. Hepatitis B virus)
- Asfarviridae (e.g. African Swine fewer)
- Flavivirus (e.g. Hepatitis C, yellow fever virus, Zika virus, Dengue virus)
- Alphavirus (e.g. eastern equine encephalitis virus)
- Togavirus (e.g. Alphavirus)
- **Coronavirus (e.g. SARS virus, MERS virus, novel coronavirus (2019-nCoV – Wuhan coronavirus outbreak))**
- Hepatitis D virus
- Orthomyxovirus (e.g. Influenca virus A (H1N1-swine flu, H3N2-Hong Kong flu, H9N2-Avian influenza, H3N8, H5N1, H5N2...), Influenca virus B, Influenca virus C, Influenca virus D)
- Paramyxovirus (e.g. mumps virus, human parainfluenza virus, measles virus, canine distemper virus, rinderpest virus)
- Rhabdovirus (e.g. rabies virus)
- Bunyavirus (e.g. Hantavirus, California encephalitis virus, Congo hemorrhagic fever virus)
- Filovirus (e.g. Ebola virus, Marburg virus)
- Retrovirus (e.g. Human Immunodeficiency Virus (HIV), Mouse mammary tumor virus)
- Arteriviridae (e.g. Porcine Respiratory and Reproductive Syndrome Virus (PRRSV))

A biocide is defined in the European legislation as a chemical substance or microorganism intended to destroy, deter, render harmless, or exert a controlling effect on any harmful organism. The biocidal active substances are mostly chemical compounds, but can also be microorganisms (e.g. bacteria).

Biocides are commonly used in medicine, agriculture, forestry, and food industry. Biocidal substances and products are also employed as anti-fouling agents or disinfectants under other circumstances: chlorine, for example, is used as a short-life biocide in industrial water

treatment but as a disinfectant in swimming pools. Many biocides are synthetic, but there are naturally occurring biocides classified as natural biocides, derived from, e.g., bacteria and plants.

In Europe the biocidal products are divided into different product types (PT), based on their intended use. These product types, 22 in total under the BPR, are grouped into four main groups, namely disinfectants, preservatives, pest control, and other biocidal products. For example, the main group "Disinfectants" **contains products to be used for human hygiene (PT 1)** and veterinary hygiene (PT 3), main group "Preservatives" contains wood preservatives (PT 8), the main group "Pest control" contains rodenticides (PT 14) and repellents and attractants (PT 19), while the main group "Other biocidal products" contains antifouling products (PT 21). It should be noted that one active substance can be used in several product types, such as for example sulfuryl fluoride, which is approved for use as a wood preservative (PT 8) as well as an insecticide (PT 18).

The biocidal active substances in our products are effective against enveloped viruses

Arquad MCB-50, Arquad MCB-80
(BKC = C12-16-alkyldimethylbenzylammonium chloride - CAS number 68424-85-1)