

BKC- Benzo Konium Chloride - An Effective Disinfectant

(An Article and usage guidelines)

Préface :

Benzalkonium chloride (BZK, BKC, BAK, BAC), also known as alkyldimethylbenzylammonium chloride (ADBAC) is a type of cationic surfactant. It is an organic salt classified as a quaternary ammonium compound. ADBACs have three main categories of use: as a biocide, Disinfectant a cationic surfactant.

It is widely use as Spray disinfectants for hard surface sanitization. This compiled article from various sources highlight the importance of BKC as a disinfectant < its effectiveness against SAARS viruses and key characteristics. The articles also covers the important guideline of usage of disinfectants by ministry of Health & Family Govt of India.

Is BKC is effective against pandemic COVID -19?

The BKC is surfactant based disinfectant and able to dissolved lipid mechanism of any virus. BKC is effective against many viruses including SAARS corona virus and being used as virucide, bacteriacide and biocide. Moreover BKC was also reported highly effective on swine flu viruses. Below are the some fact against effectiveness of BKC as a disinfectant against covid-19. However There is not 100 % evidence that specific disinfectant is 100 % effective against existing pandemic (Covid -19) and an author doesn't claim that BKC is 100 % works as a disinfectant to combat covid-19.

As per the EPA (America) most of QAC / BKC are effective for surface disinfectants subject to porosity of surface. (According to list of effective disinfectants against Corona virus published on EPA website-)

QAC are the most common on the EPA's list of registered disinfectants against the coronavirus.

Also as per infection control guidelines published by the Directorate of Health Services, Ministry of Health and Family Welfare, Govt of India, the use of disinfectants containing 5% Benzalkonium Chloride is recommended to control the growth of the Swine Flu Virus.

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According to research: - Efficacy of Various Disinfectants against SARS Coronavirus, Benzo Konium Chloride is effective work as disinfectant. (H F Rabenau 1, G Kampf, J Cinatl, H W Doerr)

According to report publish in International society of infectious disease, Human coronavirus (HCoV 229E) is rapidly inactivated within 1 minute by 2% glutaraldehyde, multiple quaternary ammonium compounds, and multiple phenolics. (Zias A. Memish, MD, FRCPC, FACP TO INFECTION CONTROL IN THE HEALTHCARE SETTING SARS-ASSOCIATED CORONAVIRUS)

Benzalkonium chloride is effective to control the growth of HA-MRSA (Hospital Associated Methicillin Resistant Staphylococcus aureus) the higher the concentration, the fewer HA-MRSA growth. Application of benzalkonium chloride is highly effective. (An article: Benzalkonium chloride effectiveness as a disinfectant against hospital-associated methicillin-resistant Staphylococcus aureus (HA-MRSA)

Koyuki Atifa Rahmi¹, Priyo Budi Purwono² and Maftuchah Rochmanti^{3*}- Malesian Journal of Microbiology.

Benzalkonium chloride was also found to inactivate influenza, measles, canine distemper, rabies, fowl laryngotracheitis, vaccinia, Semliki Forest, feline pneumonitis, meningopneumonitis, and herpes simplex viruses after 10 min of exposure at 30 C or at room temperature.

Mechanism of action:-

Benzo Koinium Chloride (QACs) membrane active agents interacting with the cytoplasmic membrane of bacteria and the plasma membrane of yeast. Their hydrophobic activity also makes them effective against lipid-containing viruses. QACs also interact with intracellular targets and bind to DNA). They are also effective against non-lipid-containing viruses and spores, depending on the product formulation At low concentrations (0.5 to 5 mg/liter) they are algistatic, bacteriostatic, tuberculostatic, sporostatic, and fungistatic. At concentrations of 10 to 50 mg/liter, they are microbicidal for these same groups, depending upon the specific organism and formulation.

Characteristics

Quats (BKC is one of the Quats Compound) are effective bacterial and viral disinfectants, and have a strong detergent characteristic. This means they not only neutralize viral or bacterial potency, but also help wash the surfaces clean.

BKC can be also recommended for fogging application to disinfect contaminant area.

Benzalkonium chloride disinfectants are non-toxic, non-tainting & odour-free at typical use dilutions.

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An Important Note:

Ministry of Health & Family Welfare Directorate General of Health Services (EMR Division) strictly warn that spraying disinfectant over human body to disinfect them from COVID 19 is not recommended.

Désinfectants are chemicals that destroy disease causing pathogens or other harmful microorganisms. It refers to substances applied on inanimate objects owing to their strong chemical properties.

In view of the above, the following advisory is issued:

- Recommended for cleaning and disinfection only of frequently touched
- Areas/surfaces by those who are suspected or confirmed to have COVID-19.

Precautionary Measure:

While using disinfectants for cleaning – like wearing gloves during disinfection.

- Spraying of individuals or groups is NOT recommended under any circumstances. Spraying an individual or group with chemical disinfectants is physically and psychologically harmful.
- Even if a person is potentially exposed with the COVID-19 virus, spraying the external part of the body does not kill the virus that has entered your body. Also there is no scientific evidence to suggest that they are effective even in disinfecting the outer clothing/body in an effective manner.
- Spraying of chlorine on individuals can lead to irritation of eyes and skin and potentially gastrointestinal effects such as nausea and vomiting. Inhalation of sodium hypochlorite can lead to irritation of mucous membranes to the nose, throat and respiratory tract and may also cause bronchospasm.
- Additionally use of such measures may in fact lead to a false sense of disinfection & safety and actually hamper public observance to hand washing and social distancing measures.

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TRENDS BKC -5 % Solution :- (An Industrial products)

BKC -5 % solution is the powerful bio-degradable disinfectant containing 5 % Benzalkonium Chloride, an effective Fungicide, Germicide and Virucide is ideal for disinfecting & sanitizing Households, Hospitals, Clinics, Hotels, Restaurants, Schools and Colleges.

Available in 5 litre pack size, which provides disinfections against a wide spectrum of harmful bacteria, fungi and viruses.

TRENDS BKC -5 % Solution can also be used to sanitize floors, walls, bed frames, chairs, tables, doors, doorknobs, telephone instruments and food contact surfaces. In addition, it can also be sprayed or used for mopping and wiping. It can be also used for fogging purposes.

- ❖ It is a powerful and safe disinfectant cleaner.
- ❖ It's an effective Fungicide, Germicide and Virucide.
- ❖ Good for cleaning and sanitizing homes, hospitals, schools, restaurants and other institutions.
- ❖ Also good for sanitizing dairy farms, poultry farms, meat processing units.

Application & Usage:

TRENDS BKC-5 % has to be diluted in water to be used effectively. 15 -20 ml of TRENDS BKC-5% will make one liters of disinfecting / sanitizing solution. For efficient use dilute the product with water as required and gently wipe and mop the surface.

BKC is works most prominent as surface disinfectant and highly recommended.

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Référence :-

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