



- **NON** - TOXIC
- **NO** ALCOHOL
- **NO** BLEACH
- **NO** RESIDUE
- **NON** - CARCINOGENIC
- **NON** - SCENTED
- **NON** - CORROSIVE
- **100%** BIODEGRADABLE

DESTROYS **99.9%** Under 30 Secs
KILLS COVID-19

- VIRUSES
- BACTERIA
- MOLD
- FUNGUS
- ALGAE



HOSPITALITY INDUSTRY

Product name: BIOTECplus Total Disinfection

Product class: Disinfectant- Sanitizer

DESCRIPTION - QUATERNARY DISINFECTANT CLEANER is a concentrated, cost-effective germicide based on a blend of quaternaries and surfactants. It cleans, disinfects, and deodorizes with a neutral pH in dilution.

Product Composition and usage

Name	CAS#	TLV/PEL	%weight
N-Alkyl Dimethyl Benzyl Ammonium Chloride	85409-22-9	N/A	1
N-Alkyl Dimethyl Ethyl Benzyl Ammonium Chloride	8001-54-5	N/A	1
Water	7732-18-5	N/A	98

This article identifies the flora of pathogens existing in hotel and other commercial establishments offering lodging and guest service, and the reference to diverse ways BIOTECplus can alleviate the existing problems

Microbial contamination within hotels can be placed into three groups:

- (1) Bacterial
- (2) Viral
- (3) Fungal



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Pathogens	Areas of contamination	Causes of contamination
<p>VIRUSES</p> <ul style="list-style-type: none"> ✚ Influenza (flu) ✚ Covid19 ✚ Hepatitis A ✚ Norovirus ✚ Rotavirus <p>BACTERIA</p> <ul style="list-style-type: none"> ✚ Diphtheria ✚ E. coli ✚ Staphylococcus ✚ MRSA ✚ Streptococcus ✚ Hemophilus-influenzae (H. flu, Hib) <p>FUNGAL</p> <ul style="list-style-type: none"> ✚ Trichophyton interdigitale 	<ul style="list-style-type: none"> ✚ Rooms ✚ Kitchen Areas ✚ Dining Areas ✚ Laundry ✚ Waste rooms ✚ Gyms ✚ Spas ✚ carpets 	<ul style="list-style-type: none"> ✚ Poor Maintenance practices by staff(housekeeping) ✚ Irregular maintenance of systems(facilities management) ✚ Incorrect usage of cleaning chemicals ✚ Infected persons at site ✚ Inadequate hygiene measures available for guests4

Table 1.0 represents the types of pathogens existing at hospitality and commercial establishments





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ROOMS

The principal routes for spread of infections include contact with infected persons or contact with articles of bedding or clothing that have been contaminated by an infected source. Numerous infections are spread by respiratory secretions, while other serious diseases are spread by the fecal-oral route, in which contaminated fecal matter is ingested

Bed Sheets and contact surfaces, it is well documented that the urinary tract infections can be acquired from bed linen and MRSA can also be transmitted through sheets if the user has an open cut or wound. MRSA present on handheld devices can be transferred by simply rubbing their eyes

The bathroom: the bathroom can be considered one of the highest risk areas given that pathogens from infected persons can be shed in high numbers and then spread via aerosols when the toilet is flushed, the pathogen can become resident on the countertop, faucet and flush handle. Obviously, the cleaners brush going from the toilet to the sink is a more direct route. Once deposited then it is possible to transfer pathogens by oral routes via a toothbrush placed on the counter before using or indirectly via failing to wash hands and continuing to the housekeeping route.

HVAC

Air conditioning units: Airborne infections, especially molds such as Aspergillus, are of concern given the spores can readily be breathed in thereby potentially causing aspergillus or more commonly named Farmer's Lung. The air ducting and filters for central air conditioning units house a tremendous amount of mold and air borne pathogens especially in equatorial climates where the air is humid.

KITCHEN

the kitchen is considered to be one the most susceptible areas of any establishment to germ proliferation. The perfect breeding grounds for a wide variety of disease-causing bacteria such as Salmonella, E. coli, Campylobacter, Shigella, and Listeria.

According to the Centers for Disease Control and Prevention (CDC), there are over 48 million people in the United States alone who suffer illnesses triggered by food contamination every single year.



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- **Refrigerator**

Bacteria can thrive in cold environments. Fruits and vegetables carry many pathogens from the moment they are harvested to their final place of use. Meats inherently carry very harmful pathogens and are notorious for significant food-based illness globally. Cold rooms for storing meats harbor many harmful bacteria and easily allow for cross contamination of foods. Kitchen utensils and hands of staff will accumulate pathogens from both infected persons as well as the environment

Ice machines, the water used is dechlorinated to avoid flavor taints so there is nothing to stop bacteria multiplying. The carbon filters become a home for biofilms thereby potentially a breeding ground for all types of pathogens including Salmonella and Shiga Toxin Producing Escherichia coli, amongst others. Therefore, if not regularly sanitized and if carbon filters are not changed every 4-6 months, then ice machines can be a potential source of pathogens.

- **Cooking Utensils**

Almost every tool used for cooking is the subject for continuous widespread transfer of pathogens. Some of the notable examples are spatulas, tongs, can openers, knives and Kitchen Sponges

Constant wiping through the greasy dishes makes it the leading candidate for the dirtiest thing found in the kitchen. Similarly, sponges can host germs far greater than the bathroom toilet!

Be sure to always use sanitizers on your kitchen sponges and replace them every two to three weeks.

- **Cloth Towels**

Just like sponges, cloth towels are also extremely prone to contamination. With all of those random hands using the same towel over and over again, accumulation of harmful germs like salmonella can populate very quickly. Pathogens such as these survive even when the sheets are washed and rinsed.

- **Kitchen Sink**

Substances stuck to the sink attract many viruses, some of which can cause muscle aches and fever (i.e., listeria). The faucet handle, due to frequent contact with pre-washed hands is a major contributor to microbial growth.

Remember! Keeping these things clean and disinfected are the most viable solutions to minimize the existence of horrible bacteria that may pose a threat to the health of each person





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• Hands

it's common for people to not wash their hands with the frequency or quality needed to reduce bacterial contamination.

WASTE ROOMS

These rooms particularly carry many germs as all refuse is deposited in a single area. It should be noted that air borne pathogens are also very active with garbage shoots and general aerosol mechanisms being utilized. Pathogens can be easily transferred if proper disinfection is not carried out each time.

SPA

Spas are generally utilized as place for relaxing, but did you know that you can contract a potentially harmful bacteria by just sitting in them. Legionella is naturally found in water, especially warm water. Hot tubs (or spas) that are not cleaned and disinfected enough can become contaminated with Legionella. A person can get infected with Legionella when they breathe in steam or mist from a contaminated hot tub. Pseudomonas and E.coli are two other major and potentially harmful pathogens that proliferate easily in hotel spas.

GYM

Gym germs don't magically appear out of nowhere. Equipment and surfaces get contaminated in several ways. This includes sneezing, touching, and coughing. However, in gyms, bacteria is mostly spread through skin-to-skin contact and bodily fluids such as sweat, blood, and saliva.

People with existing infections and open sores or wounds such as cuts transmit germs as well. Contaminated objects that members bring into your gym also spread germs. These items include keys, cell phones, watches, water bottles, gym bags, and others.

Bacteria that caused skin infections such as MRSA or ringworm were the most common, accounting for a whopping 41% of all bacteria found.

Weight Benches, Leg Press Machines, Yoga Mats, Free Weights, Exercise Bikes are some of the most common areas for bacterial proliferation of which include, athlete's foot, Staphylococcus Aureus, Ringworm, and the common cold



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Control Measures

Where BIOTECplus fits in with your protocols

Control measures include maintaining the cleanliness of equipment with **BIOTECplus**. The control of fungus and bacteria using carpet cleaning machines equipped with BIOTECplus. Electrostatic foggers applying BIOTECplus through HVAC systems, ducting and on all surfaces. Spray and leave !

Benefits of BIOTECplus

BIOTECplus is tested safe and effective against extreme pathogens existing in beverage manufacturing facilities. The product allows fast turnovers in each department(max 15 min), taking the place of numerous individual cleaners and thus saving costs to the manufacturer, while not altering the taste of the end product. The NON-toxic, Biodegradable, Biomedically standardized disinfectant and sanitizer is safe for human contact, is non-abrasive, non-corrosive and certified for food contact surfaces.

BIOTECplus is tested at the Microchem laboratory, Texas USA
 ISO 17025 Accredited and GLP Compliant Laboratory
 Microchem maintains compliance with EPA and FDA Good Laboratory Practices
 BIOTECplus is manufactured using EPA certified active ingredients

Study Title	Test Method
Antibacterial Activity and Efficacy of BIOTECplus Test Substance for use in Hospitality and Food Contact Surfaces	Modified AOAC Official Method 960.09 Germicidal and Detergent Sanitizing Action of Disinfectants Study Identification Number
Pseudomonas aeruginosa (bacteria)	NG11206
Staphylococcus aureus (MRSA- bacteria)	NG11206
Escherichia coli (bacteria)	NG11409
Trichophyton interdigitale (fungus)	NG11332
Human Coronavirus, Strain	ASTM E1053, Standard Test Method to Assess Virucidal Activity of Chemicals Study Identification Number NG14878



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Test Facility

Microchem Laboratory
1304 W. Industrial Blvd
Round Rock, TX 78681
(512) 310-8378

***See MSDS and certificates for verification**

Microchem maintains ISO 17025 accreditation through ANSI National Accreditation Board (ANAB). Accreditation provides our clients with additional confidence in the laboratory's quality system and technical competence. In addition to ISO 17025 accreditation, Microchem maintains compliance with EPA and FDA Good laboratory practices (GLPs)

Microchem's current scope of accreditation includes the following standards

- AAMI TIR12- Disinfection Validation- designing, Testing and Labelling Reusable Medical Devices for Reprocessing in Healthcare Facilities: A Guide for Medical device Manufacturers.
- AAMI TIR30- Cleaning Validation- A compendium of processes, materials, test methods, and Acceptance Criteria for Cleaning Reusable Medical Devices
- ISO 11930- Evaluation of the Antimicrobial Protection (Preservation) of Cosmetic Products

This article was created by the manufacturer's YBMS Biotec Ltd. in conjunction with tests carried out using BIOTECplus against respective pathogens existing in the Hospitality industry.

www.ybmsbiotec.com



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