

**Chlorine Dioxide** is registered with the United States Environmental Protection Agency (EPA) as a disinfectant, sanitizer and sterilizer which is defined as the ability “to destroy or eliminate all forms of microbial life including fungi, viruses, and all forms of bacteria and their spores”. Below are some of the more commonly seen organisms that Chlorine Dioxide has been proven to eliminate. To date, no organism tested against Chlorine Dioxide has proven to be resistant.

**Bacteria**

*Bacillus anthracis* Ames 30  
*Blakeslea trispora* 28  
*Bordetella bronchiseptica* 8  
*Brucella suis* 30  
*Burkholderia mallei* 36  
*Burkholderia pseudomallei* 36  
*Campylobacter jejuni* 39  
*Clostridium botulinum* (Botulism) 32  
*Clostridium difficile* 44  
*Clostridium perfringens* (Epsilon Toxin) 59  
*Corynebacterium bovis* 8  
*Coxiella burnetii* (Q-fever) 35  
*E. coli* ATCC 11229 3  
*E. coli* ATCC 51739 1  
*E. coli* K12 1  
*E. coli* O157:H7 13B88 1  
*E. coli* O157:H7 204P 1  
*E. coli* O157:H7 ATCC 43895 1  
*E. coli* O157:H7 EDL933 13  
*E. coli* O157:H7 G5303 1  
*E. coli* O157:H7 C7927 1  
*Erwinia carotovora* (soft rot) 21  
*Franscicella tularensis* 30  
*Fusarium sambucinum* (dry rot) 21  
*Fusarium solani* var. *coeruleum* (dry rot) 21  
*Helminthosporium solani* (silver scuff) 21  
*Klebsiella pneumonia* 3  
*Lactobacillus acidophilus* NRRL B1910 1  
*Lactobacillus brevis* 1  
*Lactobacillus buchneri* 1  
*Lactobacillus plantarum* 5  
*Legionella* 38  
*Legionella pneumophila* 42  
*Leuconostoc citreum* TPB85 1  
*Leuconostoc mesenterpides* 5  
*Listeria innocua* ATCC 33090 1  
*Listeria monocytogenes* F4248 1  
*Listeria monocytogenes* F5069 19  
*Listeria monocytogenes* LCDC-81-861 1  
*Listeria monocytogenes* LCDC-81-886 19  
*Listeria monocytogenes* Scott A 1  
Methicillin-resistant *Staphylococcus aureus* (MRSA) 3  
Multiple Drug Resistant *Salmonella typhimurium* (MDRS) 3  
*Mycobacterium bovis* 8  
*Mycobacterium fortuitum* 42  
*Pediococcus acidilactici* PH3 1  
*Pediococcus pentosaceus* 45  
*Pseudomonas aeruginosa* 3

*Psittacosis* (*Chlamydia psittaci*) 58  
*Salmonella* 1  
*Salmonella agona* 1  
*Salmonella anatum* Group E 1  
*Salmonella choleraesuis* ATCC 13076 1  
*Salmonella choleraesuis* 8  
*Salmonella enterica* (PT30) BAA-1045 1  
*Salmonella enterica* S. *Enteritidis* 13  
*Salmonella enterica* S. *Javiana* 13  
*Salmonella enterica* S. *Montevideo* 13  
*Salmonella javiana* 1  
*Salmonella newport* 4  
*Salmonella paratyphi* (Typhoid Fever) 52  
*Salmonella typhimurium* C133117 1  
*Salmonella anatum* Group E 1  
*Shigella* 38  
*Staphylococcal enterotoxin B* 56  
*Staphylococcus aureus* 23  
*Staphylococcus aureus* ATCC 25923 1  
*Staphylococcus epidermidis* 45  
*Staphylococcus faecalis* ATCC 344 1  
*Staphylococcus gallinarum* 45  
*Staphylococcus hominis* 45  
*Staphylococcus xylosus* 45  
*Streptococcus mutans* 45  
*Tuberculosis* 3  
*Tsukamurella inchonensis* 45  
Vancomycin-resistant *Enterococcus faecalis* (VRE) 3  
*Vibrio cholera* 53  
*Vibrio* strain Da-2 37  
*Vibrio* strain Sr-3 37  
*Yersinia enterocolitica* 40  
*Yersinia pestis* 30  
*Yersinia ruckerii* ATCC 29473 31

**Viruses:**

*Adenovirus* Type 40 6  
*Adenovirus* Human 62  
*Adenovirus* Canine 62  
*Arenaviridae* (*Arenavirus*) including *Gbagroube*, *Ippy*, *Kodoko*, *Lassa*, *Lujo*, *Luna*, *Lunk*, *Lymphocytic Choriomeningitis*, *Merino* *Walk*, *Menekre*, *Mobala*, *Mopeia*, *Tacaribe*, *Amapari*, *Chapare*, *Flexal*, *Guanarito*, *Junin*, *Latino*, *Machupo*, *Oliveros*, *Parana*, *Pichinde*, *Pirital*, *Sabia*, *Tamiami*, *Whitewater* *Arroyo* 54  
*Calicivirus* 42  
*Canine Distemper* *Virus* 62  
*Canine Parvovirus* 8, 62  
*Coronavirus* 3  
*Ebola* *Virus* 61

*Enterovirus* including D68, D71 60  
*Feline Calici* *Virus* 3  
*Filoviridae* (*Filovirus*) *Marburg* 54  
*Foot and Mouth* *Disease* 8  
*Hantavirus* 8  
*Hepatitis A* *Virus* 3  
*Hepatitis B* *Virus* 8  
*Hepatitis C* *Virus* 8  
*Herpes* *Virus* 62  
*Human coronavirus* 8  
*Human Immunodeficiency* *Virus* 3  
*Human Rotavirus* *Type* 2 (HRV) 15  
*Influenza* *A* 22  
*Influenza* *H1N1*, *H5N1* 49  
*Influenza* *H1N1*, *H1N2*, *H2N2*, *H3N1*, *H3N2*, *H3N8*, *H5N1*, *H5N2*, *H5N3*, *H5N8*, *H5N9*, *H7N1*, *H7N2*, *H7N3*, *H7N4*, *H7N7*, *H9N2*, and *H10N7* 50  
*Influenza* *H7N9* 51  
*Measles* *Virus* 62  
*Minute* *Virus* *of* *Mouse* (*Parvovirus*, *MVM-i*) 8  
*Minute* *Virus* *of* *Mouse* (*Parvovirus*, *MVM-p*) 8  
*Mouse* *Hepatitis* *Virus* (*MHV-A59*) 8  
*Mouse* *Hepatitis* *Virus* (*MHV-JHM*) 8  
*Mouse* *Parvovirus* *type* 1 (*MPV-1*) 8  
*Murine* *Parainfluenza* *Virus* *Type* 1 (*Sendai*) 8  
*Newcastle* *Disease* *Virus* 8  
*Norwalk* *Virus* 8  
*Poliovirus* 20  
*Rotavirus* 3  
*Severe* *Acute* *Respiratory* *Syndrome* (*SARS*) *Coronavirus* 43  
*Sialodacryoadenitis* *Virus* (*SDAV*) 8  
*Simian* *rotavirus* *SA-11* 15  
*Theiler’s* *Mouse* *Encephalomyelitis* *Virus* (*TMEV*) 8  
*Vaccinia* *Virus* 10  
*Variola* *vera* (*Smallpox*) 57

**Algae/Fungi/Mold/Yeast:**

*Alternaria alternata* 26  
*Aspergillus aeneus* 28  
*Aspergillus aurolatus* 28  
*Aspergillus brunneo-uniseriatus* 28  
*Aspergillus caespitosus* 28  
*Aspergillus cervinus* 28  
*Aspergillus clavatonanicus* 28  
*Aspergillus egyptiacus* 28  
*Aspergillus elongates* 28  
*Aspergillus fischeri* 28  
*Aspergillus fumigatus* 28  
*Aspergillus giganteus* 28

*Aspergillus longivesica* 28  
*Aspergillus niger* 12  
*Aspergillus ochraceus* 28  
*Aspergillus parvathecius* 28  
*Aspergillus sydowii* 28  
*Aspergillus uniguis* 28  
*Aspergillus ustus* 28  
*Aspergillus versicolor* 28  
*Botrytis* spp. 3  
*Botrytis cinerea* 47  
*Candida* spp. 5  
*Candida albicans* 28  
*Candida dubliniensis* 28  
*Candida edax* 45  
*Candida maltose* 28  
*Candida parapsilosis* 28  
*Candida sake* 28  
*Candida tropicalis* 28  
*Candida viswanathil* 28  
*Chaetomium globosum* 7  
*Cladosporium cladosporioides* 7  
*Cryptococcus curvatus* A 45  
*Cryptosporiosis perennans* 47  
*Debaryomyces etchellsii* 28  
*Eurotium* spp. 5  
*Fusarium solani* 3  
*Lodderomyces elongisporus* 28  
*Mucor circinelloides* 28  
*Mucor flavus* 28  
*Mucor indicus* 28  
*Mucor piriformis* 47  
*Mucor rademosus* 28  
*Mucor ramosissimus* 28  
*Mucor saturnus* 28  
*Penicillium chrysogenum* 7

*Penicillium digitatum* 3  
*Penicillium expansum* 47  
*Penicillium herquei* 28  
*Penicillium* spp. 5  
*Phormidium boneri* 3  
*Pichia pastoris* 3  
*Poitrasia circinans* 28  
*Rhizopus oryzae* 28  
*Roridin A* 33  
*Saccharomyces cerevisiae* 3  
*Stachybotrys bisbyi* 45  
*Stachybotrys chartarum* 7  
*T-mentag (athlete's foot fungus)* 3  
*Verrucarina* A 33

#### Bacterial Spores:

*Alicyclobacillus acidoterrestris* 17  
*Bacillus coagulans* 12  
*Bacillus anthracis* 10  
*Bacillus anthracis Ames* 30  
*Bacillus atrophaeus* 14  
*Bacillus atrophaeus ATCC 49337* 31  
*Bacillus megaterium* 12  
*Bacillus polymyxa* 12  
*Bacillus pumilus ATCC 27142* 12  
*Bacillus pumilus ATCC 27147* 11  
*Bacillus subtilis (globigii) ATCC 9372* 11  
*Bacillus subtilis ATCC 19659* 31  
*Bacillus subtilis 5230* 12  
*Bacillus thuringiensis* 18  
*Clostridium sporogenes ATCC 19404* 12  
*Geobacillus stearothermophilus ATCC 12980* 11  
*Geobacillus stearothermophilus ATCC 7953* 31

*Geobacillus stearothermophilus VPHP*  
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#### Beta Lactams:

*Amoxicillin* 29  
*Ampicillin* 29  
*Cefadroxil* 29  
*Cefazolin* 29  
*Cephalexin* 29  
*Imipenem* 29  
*Penicillin G* 29  
*Penicillin V* 29

#### Protozoa:

*Chironomid larvae* 27  
*Cryptosporidium* 34  
*Cryptosporidium parvum Oocysts* 9  
*Cyclospora cayetanensis oocysts* 41  
*Giardia* 34

#### Microsporidia:

*Encephalitozoon intestinalis* 41

#### Chemical Decontamination:

*Cylindrospermopsin (CYN)* 25  
*Dihydronicotinamide adenine dinucleotide* 24  
*Microcystin-LR (MC-LR)* 25  
*Mustard Gas* 46  
*Ricin Toxin* 10  
*Sarin* 46  
*Soman (GD)* 46  
*VX* 46

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