

TwinOxide / 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 mesenteroides 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 agora 1
 Salmonella anatum Group E1
 Salmonella choleraesuis ATCC 13076 1
 Salmonella choleraesuis 8
 Salmonella enterica (PT30) BAA-1045
 Salmonella enterica S Enteritidis 13
 Salmonella enterica S. Javiana 13
 Salmonella enterica S. Montevideo 13
 Salmonella javiana 1
 Salmonella Newport 4
 Salmonella paratyphoid (typhoid fever)
 Salmonella typhimurium c1331171
 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 xylosum 45
 Streptococcus mutans 45
 Tuberculosis 3
 Tsukamurella incheonensis 45
 Vancomycin-resistant faecalis (VRE) 3
 Vibrio cholera 53
 Vibrio strain Da-2 37
 Vibrio strain Sr-3 37
 Yersinia enterocolitica Yersinia pestis 30
 Yersinia ruckerii ATCC

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 aurulatus 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 parvathecicus 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 viswanathii 28
 Chaetomium globosum 7
 Cladosporium cladosporioides 7
 Cryptococcus curvatus A 45
 Cryptosporidium parvum 47
 Debaryomyces hansenii 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 spp. 5
 Penicillium herquei 28
 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
 Verrucaridin 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
 Bacillus subtilis ATCC 19659 31
 Bacillus subtilis 5230 12
 Bacillus thuringiensis 18
 Clostridium sporogenes ATCC 19404
 Geobacillus stearothermophilus ATCC 12980 11
 Geobacillus stearothermophilus ATCC 7953 31
 Geobacillus stearothermophilus VPHP 11

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 cayentanensis oocysts 41
 Giardia 34

Microsporidia:

Encephalitozoon intestinalis 41

Chemical Decontamination:

Cylindrospermopsin (CYN) 25
 Dihydropyridinamide 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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