

Dialox

EFFICIENCY

Biocidal efficiency

- Dialox's disinfecting power has been proven in the laboratory and in the hospital.

Laboratory testing of germicidal property

- Dialox was tested in-vitro according to different norms in Europe.

Bactericidal strength according to the EN norm 1040 and AFNOR norms NF T 72 150, 72 170 and 72 190 Contact time 5 min, Temperature 20°C, requested reduction: 5 log₁₀

| Strain | Origin | AFNOR test method | Interfering matter | Effective Dialox concentration |
|-------------------------|------------|-------------------|---------------------------------|--------------------------------|
| Pseudomonas aeruginosa | CIP 103467 | EN 1040 | none | 0.4 % |
| Staphylococcus aureus | CIP 4.83 | EN 1040 | none | 0.4 % |
| Pseudomonas aeruginosa | CIP A22 | NF T 72 150 | none | 0.6 % |
| Escherichia coli | CIP 54 127 | NF T 72 150 | none | 0.6 % |
| Staphylococcus aureus | CIP 53 154 | NF T 72 150 | none | 0.6 % |
| Enterococcus faecium | CIP 5 855 | NF T 72 150 | none | 0.6 % |
| Mycobacterium smegmatis | CIP 7 326 | NF T 72 150 | none | 2.85 % |
| Pseudomonas aeruginosa | CIP A22 | NF T 72 170 | Albumin 1%, yeast extract 1% | 0.6 % |
| Escherichia coli | CIP 54 127 | NF T 72 170 | blood 1% | 0.6 % |
| Staphylococcus aureus | CIP 53 154 | NF T 72 190 | germ-holder | 1.5 % |
| Enterococcus faecium | CIP 5 855 | NF T 72 170 | hard water | 0.6 % |

Fungicidal strength according to the norms EN 1275, NF T 72 201 and EN 1275

Contact time 15 min, Temperature 20°C, requested reduction: 4 log₁₀

| Strain | Origin | AFNOR test method | Contact time | Effective Dialox concentration |
|------------------------|------------|-------------------|--------------|--------------------------------|
| Candida albicans | CIP 487 | EN 1275 | 15 | 1 % |
| Candida albicans | IP 1180 79 | NF T 72 201 | 15 | 0,4 % |
| Penicillium verrucosum | IP 1231 80 | NF T 72 300 | 15 | 3 % |

Sporicidal strength according to the AFNOR norms NF T 72 231 / 72 301

Contact time 5 – 60 min, requested reduction: 5 log₁₀

| Strain | Origin | AFNOR test method | Contact time in minutes | Effective Dialox concentration |
|---------------------------------------|-----------|-------------------|-------------------------|--------------------------------|
| Bacillus subtilis var. Niger (spores) | CIP 7 718 | NF T 72 301 | 15 (37°C) | 2,94 % |

The sporicidal activity of Dialox has also been tested according to the protocol of the Deutsche Gesellschaft für Hygiene und Mikrobiologie (DGHM).

| Strain | Origin | Test Protocol | Contact time in Minutes | Effective Dialox concentration |
|----------------------------|-----------|---------------|-------------------------|--------------------------------|
| Bacillus subtilis (spores) | ATCC 6633 | DGHM | 10 | 0.25 |

Virucidal strength according to the AFNOR norm NF T 72 180

Contact time 15 – 60 min, requested reduction: 4 log₁₀

| Strain | Method | AFNOR reference | Contact time in minutes | Effective Dialox concentration |
|----------------------------|------------|-----------------|-------------------------|--------------------------------|
| Enterovirus Polio 1 | filtration | NF T 72 180 | 15 (37°C) | 2,94 % |
| Orthopoxvirus de la vaccin | filtration | NF T 72 180 | 15 (37°C) | 2,94 % |

Virucidal strength with respect to AIDS virus

At a concentration of 0.5 %, Dialox destroys the HIV (Human Immunodeficiency Virus) in 10 minutes.

Virucidal activity on Hepatitis B and C viruses

- According to the current state of knowledge, the difficulty in obtaining an experimental in vitro model led to the development of techniques demonstrating the efficacy of Dialox. With the specified conditions, Dialox destroys the structure of hepatitis B and C viruses. Dialox also inhibits the ability of the viruses to reproduce.

Hepatitis B virus:

- Dialox destroys the viral structure. This action was verified on the antigens at the surface and core of the virus.
- Dialox alters the replicative functions of the hepatitis B virus. This efficacy was verified on the DNA polymerase enzyme.

Hepatitis C virus:

Dialox destroys the structure of the hepatitis C virus. To demonstrate this, the integrity of the viral genome was verified after exposure to increasing concentrations of Dialox.

TOXICOLOGY

Clinical toxicology

- Dialox toxicity tests performed on animals are summarised below.

| Type of toxicity | Animal test | Dose tested | Result observed |
|---------------------------|-------------|-------------|---------------------|
| Acute oral | rat | 2 ml/kg | no mortality |
| • Primary skin irritation | rabbit | pure Dialox | moderately irritant |
| Eye irritation | rabbit | pure Dialox | irritant |

In-vitro test

- Tests conducted at the Paris Institut National de Transfusion Sanguine of healthy donor blood indicated that doses of less than 0,5 % of Dialox in a physiological solution are harmless and do not modify the following:
 - red blood corpuscles (blood count unchanged)
 - haemoglobin
 - platelets
 - leukocytes
 - plasma proteins

Detection of residue

- The presence or absence of these residues can be checked using residual peroxide test-strips from ETS SteriCheck or others.

PACKAGING, STORAGE and TRANSPORT

Packaging

5L containers.

Storage

- Dialox should be stored indoors at room temperature (+ 5°C – + 30°C)
- Stability: 2 years in its original sealed package.

Transport

Dialox is not classified as dangerous for transport regulations.

MATERIAL COMPATIBILITY

This list is not exhaustive and represents the current state of knowledge.

- Fully compatible materials: (Infinite contact time with pure Dialox):
 - Stainless steel
 - Polyethylene
 - Polypropylene
 - PVC
 - Viton (EPDM, PVDF)
 - Polymethylpentene
 - Teflon
 - Ion-exchange resins

- Compatible materials: (Infinite contact time with Dialox diluted to 3 %):
 - Polycarbonate
 - Polysulfone
 - Polyurethane
 - Non-aromatic polyamide
 - Silicone

- Materials that are compatible if Dialox contact time at use dilution is less than 30 minutes and if immediately followed with rinse :
 - Polyacetal
 - Aromatic polyamide
 - Certain rubbers

- Non-compatible or non-recommended materials:
 - Iron
 - Mild steel
 - Non-ferrous metals