

SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



Glutaral / Benzodecinium Bromide Formulation

| | | | |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 04/14/2025 |
| 5.0 | 06/18/2025 | 11517928-00005 | Date of first issue: 03/06/2025 |

SECTION 1. IDENTIFICATION

Product name : Glutaral / Benzodecinium Bromide Formulation
Product code : Fetant Gluben

Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION





GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin corrosion : Category 1
Serious eye damage : Category 1
Respiratory sensitization : Category 1
Skin sensitization : Category 1

Other hazards

Vapors may form explosive mixture with air.

GHS label elements

| | | |
|-------------------|---|--|
| Hazard pictograms | : |     |
| Signal Word | : | Danger |
| Hazard Statements | : | H226 Flammable liquid and vapor. H302 + H332 Harmful if swallowed or if inhaled. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. |

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| | | H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. |
| Supplemental Hazard State-ments | : | Corrosive to the respiratory tract. |
| Precautionary Statements | : | Prevention: P210 Keep away from heat, sparks, open flame and hot surfaces. No smoking. P233 Keep container tightly closed. P241 Use explosion-proof electrical, ventilating and lighting equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P261 Avoid breathing mist or vapors. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing must not be allowed out of the workplace. P280 Wear protective gloves, protective clothing, eye protection and face protection. P285 In case of inadequate ventilation wear respiratory protection. Response: P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER. P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER. P333 + P313 If skin irritation or rash occurs: Get medical attention. P342 + P311 If experiencing respiratory symptoms: Call a doctor. Storage: P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. Disposal: P501 Dispose of contents and container to an approved waste disposal plant. |

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| Chemical name | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|-----------------------|-------------------|-----------------------|--------------|
| Propan-2-ol | 67-63-0* | $\geq 10 - \leq 30$ | TSC |
| Glutaraldehyde | 111-30-8* | $\geq 7 - \leq 13$ | TSC |
| Benzodecinium bromide | 7281-04-1* | $\geq 7 - \leq 13$ | TSC |

* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention immediately.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention immediately.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.
- If swallowed : If swallowed, DO NOT induce vomiting.
If vomiting occurs have person lean forward.
Call a physician or poison control center immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Causes digestive tract burns.
Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).
Harmful if swallowed or if inhaled.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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| Protection of first-aiders | : | May cause respiratory irritation. Causes severe burns. Corrosive to the respiratory tract. First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| Notes to physician | : | Treat symptomatically and supportively. |

SECTION 5. FIRE-FIGHTING MEASURES

| | | |
|--|---|---|
| Suitable extinguishing media | : | Water spray Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical |
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during fire fighting | : | Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : | Carbon oxides Nitrogen oxides (NO _x) Bromine compounds |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8). |
| Environmental precautions | : | Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. |

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Methods and materials for containment and cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapors/mists with a water spray jet.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

| | |
|-----------------------------|--|
| Technical measures | : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation | : If sufficient ventilation is unavailable, use with local exhaust ventilation. Use explosion-proof electrical, ventilating and lighting equipment. |
| Advice on safe handling | : Do not get on skin or clothing. Do not breathe mist or vapors. Do not swallow. Do not get in eyes. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment Non-sparking tools should be used. Keep container tightly closed. Already sensitized individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitizers. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment. |
| Conditions for safe storage | : Keep in properly labeled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. |

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Materials to avoid : Keep away from heat and sources of ignition.
Do not store with the following product types:
Strong oxidizing agents
Self-reactive substances and mixtures
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases
Very acutely toxic substances and mixtures

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|-----------------------|-----------|-------------------------------|--|-----------|
| Propan-2-ol | 67-63-0 | TWA | 200 ppm | ACGIH |
| | | STEL | 400 ppm | ACGIH |
| | | ST | 500 ppm 1,225 mg/m ³ | NIOSH REL |
| | | TWA | 400 ppm 980 mg/m ³ | NIOSH REL |
| | | TWA | 400 ppm 980 mg/m ³ | OSHA Z-1 |
| Glutaraldehyde | 111-30-8 | TWA | < 1 µg/m ³ (OEB 5) | Internal |
| | | C | 0.2 ppm 0.8 mg/m ³ | NIOSH REL |
| | | C | 0.05 ppm | ACGIH |
| Benzodecinium bromide | 7281-04-1 | TWA | >= 100 < 1000 µg/m ³ (OEB 2) | Internal |

Biological occupational exposure limits

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|-------------|---------|--------------------|---------------------|----------------------------------|---------------------------|-----------|
| Propan-2-ol | 67-63-0 | Acetone | Urine | End of shift at end of work-week | 40 mg/l | ACGIH BEI |

Engineering measures : The information below is intended for larger pilot/commercial-scale operations and manufacturing. For smaller scale, clinical, or pharmacy settings, site-specific internal risk

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assessment practices should be conducted to determine appropriate exposure control measures. The health hazard risks of handling this material are dependent on multiple factors, including but not limited to physical form and quantity handled. If applicable, use process enclosures, local exhaust ventilation (e.g., Biosafety Cabinet, Ventilated Balance Enclosures), or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

Use closed processing systems or containment technologies to control at source (e.g., glove boxes/isolators) and to prevent leakage of compounds into the workplace.

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

No open handling permitted.

Totally enclosed processes and materials transport systems are required.

Operations require the use of appropriate containment technology designed to prevent leakage of compounds into the workplace.

Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

Eye protection : Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.

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Hygiene measures : Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing. If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|-------------------------------|
| Appearance | : liquid |
| Color | : colorless, to, light yellow |
| Odor | : No data available |
| Odor Threshold | : No data available |
| pH | : 4.31 |
| Melting point/freezing point | : No data available |
| Initial boiling point and boiling range | : No data available |
| Flash point | : 120.2 °F / 49.0 °C |
| Evaporation rate | : No data available |
| Flammability (solid, gas) | : Not applicable |
| Flammability (liquids) | : No data available |
| Upper explosion limit / Upper flammability limit | : No data available |
| Lower explosion limit / Lower flammability limit | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density | : No data available |

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| | | |
|--|---|--|
| Relative density | : | No data available |
| Density | : | No data available |
| Solubility(ies) | : | |
| Water solubility | : | No data available |
| Partition coefficient: n-octanol/water | : | Not applicable |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | : | |
| Viscosity, kinematic | : | No data available |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight | : | No data available |
| Particle characteristics | : | |
| Particle size | : | Not applicable |

SECTION 10. STABILITY AND REACTIVITY

| | | |
|------------------------------------|---|---|
| Reactivity | : | Not classified as a reactivity hazard. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents. |
| Conditions to avoid | : | Heat, flames and sparks. |
| Incompatible materials | : | Oxidizing agents |
| Hazardous decomposition products | : | No hazardous decomposition products are known. |

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Harmful if swallowed or if inhaled.

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Product:

| | | |
|---------------------------|---|--|
| Acute oral toxicity | : | Acute toxicity estimate: 480.73 mg/kg Method: Calculation method |
| Acute inhalation toxicity | : | Acute toxicity estimate: 2.33 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method |
| Acute dermal toxicity | : | Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method |

Components:

Propan-2-ol:

| | | |
|---------------------------|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 5,000 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): > 25 mg/l Exposure time: 6 h Test atmosphere: vapor |
| Acute dermal toxicity | : | LD50 (Rabbit): > 5,000 mg/kg |

Glutaraldehyde:

| | | |
|---------------------------|---|--|
| Acute oral toxicity | : | LD50 (Rat, female): 77 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat, female): 0.28 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: Corrosive to the respiratory tract. |
| Acute dermal toxicity | : | LD50 (Rabbit): > 2,000 mg/kg |

Benzodecinium bromide:

| | | |
|---------------------------|---|---|
| Acute oral toxicity | : | LD50 (Rat): 230 mg/kg |
| Acute inhalation toxicity | : | Assessment: Corrosive to the respiratory tract. |
| Acute dermal toxicity | : | LD50 (Rabbit): > 2,000 - 5,000 mg/kg Remarks: Based on data from similar materials |

Skin corrosion/irritation

Causes severe burns.

Components:

Propan-2-ol:

| | | |
|---------|---|--------------------|
| Species | : | Rabbit |
| Result | : | No skin irritation |

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Glutaraldehyde:

| | |
|---------|---|
| Species | : Rabbit |
| Method | : OECD Test Guideline 404 |
| Result | : Corrosive after 3 minutes to 1 hour of exposure |

Benzodecinium bromide:

| | |
|---------|---|
| Species | : Rabbit |
| Result | : Corrosive after 4 hours or less of exposure |
| Remarks | : Based on data from similar materials |

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Propan-2-ol:

| | |
|---------|--|
| Species | : Rabbit |
| Result | : Irritation to eyes, reversing within 21 days |

Glutaraldehyde:

| | |
|---------|-----------------------------------|
| Species | : Rabbit |
| Result | : Irreversible effects on the eye |
| Method | : Draize Test |

Benzodecinium bromide:

| | |
|---------|--|
| Species | : Rabbit |
| Result | : Irreversible effects on the eye |
| Remarks | : Based on data from similar materials |

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:

Propan-2-ol:

| | |
|--------------------|---------------------------|
| Test Type | : Buehler Test |
| Routes of exposure | : Skin contact |
| Species | : Guinea pig |
| Method | : OECD Test Guideline 406 |
| Result | : negative |

Glutaraldehyde:

| | |
|--------------------|---------------------------------|
| Test Type | : Local lymph node assay (LLNA) |
| Routes of exposure | : Skin contact |

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| | |
|--------------------|---|
| Species | : Mouse |
| Result | : positive |
| Assessment | : Probability or evidence of high skin sensitization rate in humans |
| Routes of exposure | : Inhalation |
| Species | : Humans |
| Result | : positive |
| Assessment | : May cause sensitization by inhalation. |

Benzodecinium bromide:

| | |
|--------------------|--|
| Test Type | : Buehler Test |
| Routes of exposure | : Skin contact |
| Species | : Guinea pig |
| Method | : OECD Test Guideline 406 |
| Result | : negative |
| Remarks | : Based on data from similar materials |

Germ cell mutagenicity

Not classified based on available information.

Components:

Propan-2-ol:

| | |
|-----------------------|--|
| Genotoxicity in vitro | : Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative |
| Genotoxicity in vivo | : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative |

Glutaraldehyde:

| | |
|-----------------------|--|
| Genotoxicity in vitro | : Test Type: Bacterial reverse mutation assay (AMES) Result: positive Test Type: In vitro mammalian cell gene mutation test Result: positive Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: positive |
| Genotoxicity in vivo | : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) |

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Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Test Type: Unscheduled DNA synthesis (UDS) test with
mammalian liver cells in vivo
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 486
Result: negative

Benzodecinium bromide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:

Propan-2-ol:

Species : Rat
Application Route : inhalation (vapor)
Exposure time : 104 weeks
Method : OECD Test Guideline 451
Result : negative

Glutaraldehyde:

Species : Rat
Application Route : Ingestion
Exposure time : 2 Years

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Result : negative

Species : Rat
Application Route : inhalation (vapor)
Exposure time : 2 Years
Result : negative

Benzodecinium bromide:

Species : Rat
Application Route : Ingestion
Exposure time : 2 Years
Method : OECD Test Guideline 453
Result : negative
Remarks : Based on data from similar materials

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

Propan-2-ol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: negative

Glutaraldehyde:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414

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|| Result: negative

Benzodecinium bromide:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

STOT-single exposure

May cause respiratory irritation.
Corrosive to the respiratory tract.

Components:

Propan-2-ol:

|| Assessment : May cause drowsiness or dizziness.

Glutaraldehyde:

|| Assessment : May cause respiratory irritation.

STOT-repeated exposure

Not classified based on available information.

Components:

Glutaraldehyde:

|| Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Components:

Propan-2-ol:

|| Species : Rat
|| NOAEL : 12.5 mg/l
|| Application Route : inhalation (vapor)
|| Exposure time : 104 Weeks

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Glutaraldehyde:

| | |
|-------------------|---------------------------|
| Species | : Rat, male |
| NOAEL | : 15 mg/kg |
| Application Route | : Ingestion |
| Exposure time | : 13 Weeks |
| Method | : OECD Test Guideline 408 |

| | |
|-------------------|----------------------|
| Species | : Rat, male |
| NOAEL | : 0.0005 mg/l |
| Application Route | : inhalation (vapor) |
| Exposure time | : 13 Weeks |

| | |
|-------------------|---------------------------|
| Species | : Rat |
| NOAEL | : >= 150 mg/kg |
| Application Route | : Skin contact |
| Exposure time | : 13 Weeks |
| Method | : OECD Test Guideline 411 |

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Propan-2-ol:

| | |
|---|--|
| Toxicity to fish | : LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h |
| Toxicity to microorganisms | : EC50 (Pseudomonas putida): > 1,050 mg/l Exposure time: 16 h |

Glutaraldehyde:

| | |
|---|---|
| Toxicity to fish | : LC50 (Oncorhynchus mykiss (rainbow trout)): 10 mg/l Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Crassostrea virginica (eastern oyster)): 0.78 mg/l Exposure time: 96 h |
| Toxicity to algae/aquatic plants | : ErC50 (Desmodesmus subspicatus (green algae)): 0.6 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 0.025 mg/l Exposure time: 72 h |
| Toxicity to fish (Chronic tox- | : NOEC (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l |

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tion

| | | | |
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icity)
Exposure time: 97 d
Method: OECD Test Guideline 210

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.13 mg/l
aquatic invertebrates (Chronic toxicity)
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC10 (Pseudomonas putida): 4.4 mg/l
Exposure time: 17 h
Method: DIN 38 412 Part 8

Benzodecinium bromide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 0.1 - 1 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 0.01 - 0.1 mg/l
aquatic invertebrates
Exposure time: 48 h
Method: Directive 67/548/EEC, Annex V, C.2.
Remarks: Based on data from similar materials

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.01
plants
- 0.1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): >
0.001 - 0.01 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox- : NOEC (Pimephales promelas (fathead minnow)): > 0.01 - 0.1
icity)
mg/l
Exposure time: 28 d
Remarks: Based on data from similar materials

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): > 0.01 - 0.1 mg/l
aquatic invertebrates (Chronic toxicity)
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50: > 10 - 100 mg/l
Exposure time: 30 min
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

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Persistence and degradability

Components:

Propan-2-ol:

| | |
|------------------|--|
| Biodegradability | : Result: rapidly degradable |
| BOD/COD | : BOD: 1,19 (BOD5) COD: 2,23 BOD/COD: 53 % |

Glutaraldehyde:

| | |
|------------------|--|
| Biodegradability | : Result: Readily biodegradable. Method: OECD Test Guideline 301A |
|------------------|--|

Benzodecinium bromide:

| | |
|------------------|---|
| Biodegradability | : Result: Readily biodegradable. Remarks: Based on data from similar materials |
|------------------|---|

Bioaccumulative potential

Components:

Propan-2-ol:

| | |
|--|-----------------|
| Partition coefficient: n-octanol/water | : log Pow: 0.05 |
|--|-----------------|

Glutaraldehyde:

| | |
|--|--|
| Partition coefficient: n-octanol/water | : log Pow: < 4 Remarks: Expert judgment |
|--|--|

Benzodecinium bromide:

| | |
|--|--|
| Partition coefficient: n-octanol/water | : log Pow: < 4 Remarks: Expert judgment |
|--|--|

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

| | |
|------------------------|---|
| Waste from residues | : Dispose of in accordance with local regulations. Do not dispose of waste into sewer. |
| Contaminated packaging | : Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers retain residue and can be dangerous. |

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Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.

If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

| | |
|---------------------------|--|
| UN number | : UN 2920 |
| Proper shipping name | : CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Propan-2-ol) |
| Class | : 8 |
| Subsidiary risk | : 3 |
| Packing group | : II |
| Labels | : 8 (3) |
| Environmentally hazardous | : yes |

IATA-DGR

| | |
|--|--|
| UN/ID No. | : UN 2920 |
| Proper shipping name | : Corrosive liquid, flammable, n.o.s. (Glutaraldehyde, Propan-2-ol) |
| Class | : 8 |
| Subsidiary risk | : 3 |
| Packing group | : II |
| Labels | : Corrosive, Flammable Liquids |
| Packing instruction (cargo aircraft) | : 855 |
| Packing instruction (passenger aircraft) | : 851 |

IMDG-Code

| | |
|----------------------|---|
| UN number | : UN 2920 |
| Proper shipping name | : CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Propan-2-ol, Benzodecinium bromide) |
| Class | : 8 |
| Subsidiary risk | : 3 |
| Packing group | : II |
| Labels | : 8 (3) |
| EmS Code | : F-E, S-C |
| Marine pollutant | : yes |

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Domestic regulation

49 CFR

| | |
|----------------------|---|
| UN/ID/NA number | : UN 2920 |
| Proper shipping name | : Corrosive liquids, flammable, n.o.s. (Glutaraldehyde, Propan-2-ol) |
| Class | : 8 |

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| | | |
|------------------|---|---|
| Subsidiary risk | : | 3 |
| Packing group | : | II |
| Labels | : | CORROSIVE, FLAMMABLE LIQUID |
| ERG Code | : | 132 |
| Marine pollutant | : | yes(Benzodecinium bromide, Glutaraldehyde) |
| Remarks | : | THE COMBUSTIBLE LIQUID EXCEPTION MAY BE USED FOR PACKAGES <119 GAL. |

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

| | | |
|-----------------------------|---|---|
| SARA 311/312 Hazards | : | Flammable (gases, aerosols, liquids, or solids) |
| | | Acute toxicity (any route of exposure) |
| | | Respiratory or skin sensitization |
| | | Skin corrosion or irritation |
| | | Serious eye damage or eye irritation |

| | | |
|-----------------|---|--|
| SARA 313 | : | The following components are subject to reporting levels established by SARA Title III, Section 313: |
|-----------------|---|--|

| | | |
|-------------|---------|----------------|
| Propan-2-ol | 67-63-0 | >= 10 - < 20 % |
|-------------|---------|----------------|

US State Regulations

Pennsylvania Right To Know

| | |
|-----------------------|-----------|
| Water | 7732-18-5 |
| Propan-2-ol | 67-63-0 |
| Benzodecinium bromide | 7281-04-1 |
| Glutaraldehyde | 111-30-8 |

California List of Hazardous Substances

| | |
|----------------|----------|
| Propan-2-ol | 67-63-0 |
| Glutaraldehyde | 111-30-8 |

California Permissible Exposure Limits for Chemical Contaminants

| | |
|----------------|----------|
| Propan-2-ol | 67-63-0 |
| Glutaraldehyde | 111-30-8 |

The ingredients of this product are reported in the following inventories:

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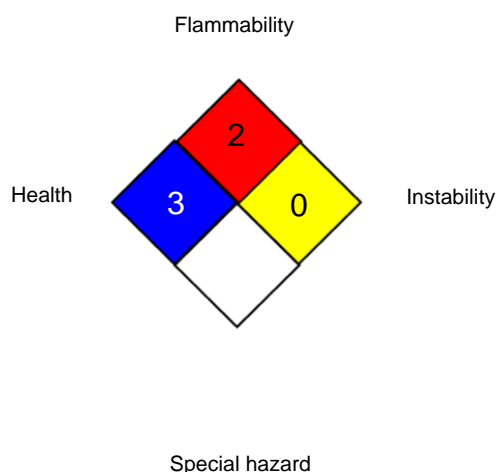
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| | | |
|-------|---|----------------|
| AICS | : | not determined |
| DSL | : | not determined |
| IECSC | : | not determined |

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

| | | |
|-----------------|---|---|
| HEALTH | * | 3 |
| FLAMMABILITY | | 2 |
| PHYSICAL HAZARD | | 0 |

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

| | | |
|-----------------|---|---|
| ACGIH | : | USA. ACGIH Threshold Limit Values (TLV) |
| ACGIH BEI | : | ACGIH - Biological Exposure Indices (BEI) |
| NIOSH REL | : | USA. NIOSH Recommended Exposure Limits |
| OSHA Z-1 | : | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| ACGIH / TWA | : | 8-hour, time-weighted average |
| ACGIH / STEL | : | Short-term exposure limit |
| ACGIH / C | : | Ceiling limit |
| NIOSH REL / TWA | : | Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek |
| NIOSH REL / ST | : | STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday |
| NIOSH REL / C | : | Ceiling value not be exceeded at any time. |
| OSHA Z-1 / TWA | : | 8-hour time weighted average |

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Sub-

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stances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 06/18/2025

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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