



SILVER FERN CHEMICAL, INC.

SAFETY DATA SHEET

Denatonium Benzoate

40% by weight in Propylene Glycol

1 - IDENTIFICATION

Denatonium Benzoate, 40% by weight in Propylene Glycol

Product Code: 20DB40PG

Chemical Family: Glycol, Quaternary Aromatic Amine Salt

Recommended use: Aversive agent, bittering agent

Company: Silver Fern Chemical, Inc.

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Revision Date: 08/13/2019

2 - HAZARDS IDENTIFICATION

Classification of Chemical:

Clear colorless liquid

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200)(Hazcom 2012)

OSHA Hazards

Harmful if swallowed. May be harmful by inhalation. May be irritating to eyes.

Hazard classification:

Acute Toxicity – Category 5

Label elements:

Hazard pictogram:



Signal word:

Warning

Hazard statements:

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H302+H332	Harmful if swallowed or if inhaled
H316	Causes mild skin irritation
H319	Causes serious eye irritation

Precautionary statements:

P264	Wash contact area thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330	Rinse mouth
P261	Avoid breathing mist/vapors/spray
P271	Use only outdoors or in a well-ventilated area
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P280	Wear protective gloves/protective clothing/eye protection/face protection
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: get medical advice/attention
P501	Dispose of contents/containers in accordance with local regulations

3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>CAS #</u>	<u>Concentration</u>
Denatonium Benzoate	3734-33-6	40 %
Propylene Glycol	57-55-6	40 %
Water	7732-18-5	20 %

4 - FIRST AID MEASURES

Description of first aid measures:

Inhalation: Remove from exposure, get fresh air. If problems remain or occur later, get medical attention. Self-Contained Breathing Apparatus should be worn if exposed to large quantities.

Skin Contact: Wash off skin thoroughly with water. Remove contaminated clothing and wash before reuse. Obtain medical attention if skin is irritated or any symptoms develop.

Eye Contact: For eye contact, flush eyes with water for 15 minutes. Get medical attention if irritation persists.

Ingestions: Wash out mouth thoroughly with water and give plenty of water to drink. DO NOT induce vomiting unless told by a medical professional. Obtain medical attention.

Symptoms and effects, both acute and delayed:

See Section 11

5 - FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable extinguishing media: Carbon dioxide, dry-chemical or universal type foam

Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire

Special hazards arising from the substance: No data available.

Hazardous combustion products: FIRE: Nitrogen oxides, carbon monoxide and carbon dioxide.

Special protective equipment and precautions for firefighters: Use Carbon Dioxide Extinguisher (suitable for class B and C fires) or Multi-Purpose Dry Chemical Extinguisher (suitable for class A, B and C fires)

6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Any/all persons dealing with the spill should wear appropriate personal protective equipment. Keep others away from spill/leak. Restrict access to area until the spill has been cleaned up.

Methods and material for containment and cleaning up: Use proper personal protective equipment. Isolate and secure the area and follow the appropriate emergency guidelines. If local high concentration of airborne mist occurs, dilute spill with plenty of water and ventilate to disperse mist-laden air. Sweep up spill and reclaim or place in a covered waste disposal container. Report spill to proper authorities.

7 – HANDLING AND STORAGE

Precautions for safe handling: Obtain special instructions before use. Wear proper personal protective equipment. Use only in well ventilated areas. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame.

Conditions for safe storage: Store in cool, dry, ventilated area away from any heat source. Storage area should be clearly identified and free of obstruction. Keep containers tightly closed and in an upright position when not in use.

Incompatible materials: Oxidizing agents, chromic anhydride, lead perchlorate, perchloric acids

Other precautions: None

Section 7 notes: Change contaminated clothing. Wash hands well after working with substance.

8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits: Limits for the components of Denatonium Benzoate, 40% in Propylene Glycol have not been established by OSHA and ACGIH.

Exposure controls:

Ventilation and engineering measures: Use ventilation if possible, e.g., fans or exhaust systems to keep vapor level below recommended exposure limits.

Respiratory protection: If good ventilation is not available, wear a respiratory device approved by NIOSH/MSHA for protection against organic vapors, mist and dust. If handling large quantities, use a certified SCBA apparatus.

Eye protection: Wear safety glasses with un-perforated side shields.

Skin protection: Wear chemical resistant gloves for long and repeated contact. Contaminated clothing and shoes should be cleaned before re-using.

Other protective equipment: Safety shower/eye wash

General hygiene considerations: Acceptable industrial hygiene practices should be maintained.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless liquid
Odor: Slightly sweet odor
Odor threshold: No data available
pH: 6.9 – 7.3
Freezing point: No data available
Boiling point: No data available
Vapor pressure (mmHg): <0.1 @ 20°C
Vapor density: No data available
Evaporation rate: < 1 (Butyl acetate =1)
Flash point: No data available
Upper/lower flammability limit: Lower: 2.4% Upper: 14.4% (propylene glycol)
Solubility in water: soluble
Other solubilities: No data available
Percent volatile: 60%
Log P (octanol – water): No data available
Relative density: No data available
Autoignition temperature: No data available
Viscosity (cSt @ 25°C): No data available
Gibbs energy: No data available
Spectral Properties: No data available

Section 9 notes: The above chemical properties are a compilation of data from the NTP, Chemdraw and Arcadia Corp.

10 - STABILITY AND REACTIVITY

Reactivity: No data available

Stability: Stable

Conditions to avoid: Oxidizing agents

Incompatible materials: Oxidizing agents, chromic anhydride, lead perchlorate, perchloric acids

Hazardous decomposition products or by-products: FIRE: Nitrogen oxides, carbon monoxide and carbon dioxide. HCN in reducing atmospheres.

Possibility of hazardous reactions: Hazardous polymerization does not occur

11 - TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry – inhalation: yes

Routes of entry – skin & eye: yes

Routes of entry – skin absorption: yes

Routes of entry – ingestion: yes

Potential Health Effects:

Signs and symptoms of short term (acute) exposure:

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation

Ingestion: May be harmful if swallowed

Skin contact: May be harmful if absorbed through skin. May cause skin irritation

Eyes: May cause eye irritation

Mutagenicity: No data available

Carcinogenicity: The components of this product are not listed on OSHA, NIOSH, IARC or NTP lists as cancer-causing

Reproductive effects: No data available

Teratogenicity: No data available

Sensitization to material: No data available

Specific target organ effects: No data available

Medical conditions aggravated by overexposure: No data available

Toxicological data: The calculated ATE values for this mixture are:

ATE oral = No data available

ATE dermal = No data available

ATE inhalation = No data available

Human toxicity: None found

12 - ECOLOGICAL INFORMATION

Ecotoxicity: Acute toxicity:

Denatonium Benzoate:

Toxicity to fish: LC₅₀/96 hr/Rainbow Trout = >1000 mg/l

Toxicity to crustacean: EC₅₀/96 hr/Shrimp = 400 mg/l

Toxicity to algae: EC₅₀/72 hr = No data available

Propylene Glycol:

Toxicity to fish: LC₅₀/96 hr/Rainbow Trout = >10,000 mg/l

Toxicity to crustacean: No data available

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulation potential: No data available

Mobility in soil: No data available

13 - DISPOSAL CONSIDERATIONS

Waste disposal method: Dispose of in accordance with federal, state and local regulations

14 - TRANSPORTATION INFORMATION

DOT CLASSIFICATION: Not regulated for US domestic ground transportation.

15 - REGULATORY INFORMATION

U.S. Federal Regulations

TSCA (Toxic Substance Control Act): 8(b) inventory: propylene glycol, denatonium benzoate

EINECS: The contents of this product are on the European Inventory of Existing Commercial Chemical Substances:
223-095-2; 200-338-0

Worldwide Chemical Inventory Status: USA, TSCA, CANADA and DSL

California Proposition 65: None of the components in Denatonium Benzoate, 40% in Propylene Glycol are in the current P-65 chemicals list

HMIS Hazard Classification

HEALTH: 1

FLAMMABILITY: 1

PHYSICAL HAZARD: 0

PROTECTION: G

16 - OTHER INFORMATION

Preparation information: Updated 08/13/2019.

Legend: ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstract Service

CFR: Code of Federal Regulations

DOT: Department of Transportation

DSL: Domestic Substance List (Canada)

EC: Effective Concentration Material

EINECS: European Inventory of Existing Commercial chemical Substances

EPA: Environmental Protection Agency

HMIS: Hazardous Material Identification System

IARC: International Agency for Research on Cancer

LC: Lethal Concentration

LD: Lethal Dose

NIOSH: National Institute of Occupational Safety and Health

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

RTECS: Registry of Toxic Effects of Chemical Substances

SCBA: Self Contained Breathing Apparatus

SDS: Safety Data Sheet/Material Safety Data Sheet

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