



Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

# MATERIAL SAFETY DATA SHEETS

## SECTION I PRODUCT AND COMPANY IDENTIFICATION

**Product:** Denatonium benzoate  
**This MSDS is valid for all grades and catalog #'s**

Synonyms: N-[2-[(2,6-Dimethylphenyl)amino]-2 oxoethyl]-N,N-diethylbenzenemethanaminium benzoate;  
Benzenemethanaminium, N-(2-[(2,6-dimethylphenyl)amino]-2-oxoethyl)-N,N-diethyl-, benzoate; Bitrex  
Formula: C<sub>28</sub>H<sub>34</sub>N<sub>2</sub>O<sub>3</sub>

Manufacturer: PHARMCO-AAPER  
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## SECTION II COMPOSITION / INFORMATION ON INGREDIENTS

% by weight	Material	CAS #	TLV/PE L	LC50/LD50
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100	Denatonium Benzoate	3734-33-6	Not available	ORAL (LD50): Acute: 584 mg/kg [Rat(registry of toxic Effects of Chemical Substances)]. 508 mg/kg [Rabbit(Registry of Toxic Effects of Chemical Substances)]. DERMAL (LD50): Acute: >2000 mg/kg [Rabbit]
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## SECTION III HAZARDS IDENTIFICATION

**Potential Acute Health Effects:** Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of ingestion, of inhalation.

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

## SECTION IV FIRST AID

Obtain medical attention for all cases of over-exposure.

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Hazardous Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Hazardous Inhalation:** Not available.

**Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Hazardous Ingestion:** Not available.

## SECTION V FIRE FIGHTING MEASURES

**Fire:**

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition temperature: Not available.

Flash point: Not available.

Flammable limits: Not available.

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).

**Fire Hazards:** Slightly flammable to flammable in presence of heat.

**Explosion Hazards:** Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Extinguishing Media:** SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Information:** As with most organic solids, fire is possible at elevated temperatures

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#### SECTION VI

##### SPILL/ACCIDENTAL RELEASE MEASURES

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

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#### SECTION VII

##### HANDLING AND STORAGE

**Precautions:** Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area.

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#### SECTION VIII

##### EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Safety glasses or Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

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#### SECTION IX

##### PHYSICAL AND CHEMICAL PROPERTIES

**Physical State/Appearance:** Solid. (Crystalline granules solid. Crystalline powder.)

MSDS 775, Rev 1.1, 07/08, MSZ

Denatonium Benzoate / Page 2 of 2

**Molecular Weight:** 446.59 g/mole

**Odor:** Odorless.

**Taste:** Bitter

**Color:** White

**pH (1% Solution in Water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** 163°C (325.4°F) - 170 C.

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

**Vapor Pressure (mm Hg):** Not available.

**Vapor Density (Air=1):** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Water/Oil Dist. Coefficient:** The product is more soluble in oil; log(oil/water) = 0.9

**Ionicity (in water):** Not available.

**Dispersion Properties:** See solubility in water.

**Solubility:** Partially soluble in cold water. Solubility in Water: 45 g/l

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#### SECTION X

##### STABILITY/REACTIVITY INFORMATION

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat, incompatible materials, dust generation.

**Incompatibilities:** Reactive with oxidizing agents.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Information:** Not available.

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#### SECTION XI

##### TOXICOLOGICAL INFORMATION

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:** Acute oral toxicity (LD<sub>50</sub>): 508 mg/kg [Rabbit (Registry of Toxic Effects of Chemical Substances)].

Acute dermal toxicity (LD<sub>50</sub>): >2000 mg/kg [Rabbit].

**Chronic Effects on Humans:** Not available.

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant). Slightly hazardous in case of ingestion, of inhalation.

**Special Information on Toxicity to Animals:** LD<sub>50</sub>/Conc 50% Kill: LD<sub>50</sub>[Rat] - Route: Oral; Dose: 640 to 841 mg/kg (Information from Johnson Matthey Group)

**Special Information on Chronic Effects/Toxicity on Humans:** Acute Potential Health Effects:

on other Toxic Skin: Causes skin irritation. It may be absorbed through the skin, but not in significant or harmful amounts. Eyes: Causes eye irritation. Inhalation: Causes respiratory tract irritation. May cause allergic reaction in susceptible people Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea. May affect behavior/central nervous system (sommolence, tremor, ataxia). May cause allergic reaction in susceptible people.

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#### SECTION XII

##### ECOLOGICAL INFORMATION

**Ecotoxicity:** Ecotoxicity in water (LC50): >1000 mg/l 96 hours [Fish (Trout)].

**BOD5 and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Information on Products of Biodegradation:** Not available.

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### SECTION XIII

#### DISPOSAL CONSIDERATIONS

**Waste Disposal:** Recycle to process, if possible. Consult your local or regional authorities.

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### SECTION XIV

#### TRANSPORTATION INFORMATION

**DOT Classification:** DOT Not a DOT controlled material (United States).

**UN:** Not applicable.

**Special Provisions for Transport:** Not applicable.

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### SECTION XV

#### REGULATORY INFORMATION

**Federal and State Regulations:** Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are: **NONE**

**WHMIS (Canada):** Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are: **NONE**

**Pennsylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances** on the list must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are: **NONE**

**Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances** on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: **NONE**

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)** requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: **NONE**

**Other Classifications:**

**WHMIS (Canada):** Not controlled under WHMIS (Canada).  
**DSCL (EEC):** R22- Harmful if swallowed. R36/38- Irritating to eyes and skin.

**Protective Equipment:** Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

**References:** Not available.

**Other Special Considerations:** Aversive agent and denaturant.

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The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.