



# MATERIAL SAFETY DATA SHEETS

## SECTION I

### PRODUCT AND COMPANY IDENTIFICATION

**Product: Benzethonium chloride**  
**This MSDS is valid for all grades and catalog #'s**

Synonyms: N,N-Dimethyl-N[2-[2-[4-(1,1,3,3-teramethylbutyl)phenoxy]ethoxy]ethyl]benzenemethanaminium chloride

Formula: C<sub>27</sub>H<sub>42</sub>CINO<sub>2</sub>

Manufacturer: PHARMCO-AAPER  
58 Vale Road  
Brookfield, Connecticut 06804, USA  
Phone (203) 740-3471  
Fax (203) 740-3481

1101 Isaac Shelby Drive  
Shelbyville, KY 40065  
Phone (502) 633-0650  
Fax (502) 633-0685

Emergency Contact:  
CHEMTREC 1-800-424-9300

## SECTION II

### COMPOSITION /INFORMATION ON INGREDIENTS

% by weight	Material	CAS #	TLV/PEL	LC50/LD50
-------------	----------	-------	---------	-----------

100	Benzethonium chloride	121-54-0	Not available	ORAL (LD50): Acute: 338 mg/kg [Mouse]. 368 mg/kg [Rat]
-----	-----------------------	----------	---------------	---

## SECTION III

### HAZARDS IDENTIFICATION

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

**Potential Chronic Health Effects:** Slightly hazardous in case of skin contact (sensitizer, Chronic Health permeator).  
CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance is toxic to mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

## 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>...), halogenated compounds.

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

**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:** When heated to decomposition it emits very toxic fumes of NO<sub>x</sub> and Hydrogen Chloride.

## 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.

---

## SECTION VII HANDLING AND STORAGE

**Precautions:** Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. 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, organic materials.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Sensitive to light. Store in light-resistant containers.

---

## 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:** 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.

---

## SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

**Physical State/Appearance:** Solid (crystalline powder)

**Molecular Weight:** 448.1 g/mole

**Odor:** Mild

**Taste:** Bitter

**Color:** White. Off-white

**pH (1% Solution in Water):** 5 [Acidic.]

**Boiling Point:** Not available.

**Melting Point:** 158°C (316.4°F)

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

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

---

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

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Water/Oil Dist. Coefficient:** Not available.

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

**Dispersion Properties:** See solubility in water, methanol, diethyl ether, acetone.

**Solubility:** Easily soluble in cold water, hot water. Soluble in methanol, acetone. Partially soluble in diethyl ether.

---

## SECTION X STABILITY/REACTIVITY INFORMATION

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat, light, incompatible materials

**Incompatibilities:** Reactive with oxidizing agents, organic materials.

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

**Special Information:** Sensitive to light. Reactive with soaps, anionic detergents, and nitrates

---

## SECTION XI TOXICOLOGICAL INFORMATION

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

**Toxicity to Animals:** Acute oral toxicity (LD50): 338 mg/kg [Mouse].

**Chronic Effects on Humans:** Causes damage to the following organs: mucous membranes.

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

**Special Information on Toxicity to Animals:** Not available.

**Special Information on Chronic Effects/Toxicity on Humans:** May affect genetic material (mutagenic). May cause cancer based on animal test data. Acute Potential Health Effects: Skin: Causes skin irritation. It may be absorbed by the skin. Eyes: Causes eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: Harmful if swallowed. May cause gastrointestinal tract irritation with vomiting, and diarrhea. May affect behavior (CNS depression, excitement, convulsions, seizures, coma), respiration (respiratory depression), blood, urinary system (hematuria), metabolism (weight loss). Chronic Potential Health Effects: Prolonged or repeated ingestion or skin contact may affect metabolism, the endocrine system (thymus), and cardiovascular system. Prolonged or repeated skin contact may cause dermatitis.

---

## SECTION XII ECOLOGICAL INFORMATION

**Ecotoxicity:** Ecotoxicity in water (LC50): 1.6 mg/l 96 hours [Pimephales promelas]. 1.4 mg/l 96 hours [Lipomas macrochirus]. 56 mg/l 96 hours [Oncorhynchus kisutch].

**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 as toxic as the product itself.

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

---

### SECTION XIII DISPOSAL CONSIDERATIONS

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

---

### SECTION XIV TRANSPORTATION INFORMATION

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

**UN:** Not applicable.

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

---

### 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**

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**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: **No products were found.**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: **No products were found.**

**Other Classifications:**

WHMIS (Canada): CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).

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. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**References:** Not available.

**Other Special Considerations:** Not available.

---

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.