SAFETY DATA SHEET

Preparation Date: 5/07/2015
Revision Date: 6/7/2018
Revision Number: G3

1. IDENTIFICATION

Product identifier

Product code: B1068
Product Name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF

Other means of identification

Synonyms: No information available
CAS #: Mixture
RTECS #: Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against: No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Category 1</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Label elements

Danger

Hazard statements
Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
May be harmful in contact with skin

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing must not be allowed out of the workplace
Wear protective gloves/protective clothing/eye protection/face protection
Wear respiratory protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/.../equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
In case of fire: Use CO2, dry chemical, or foam to extinguish.
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 or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Product code: B1068
Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>50</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>46</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>4</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>&lt;=0.05 (impurity)</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms
Severe skin and eye irritation or burns
Causes eye damage
May cause an allergic skin reaction
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause chemical burns to the respiratory tract
Causes digestive (gastrointestinal) tract irritation
May cause gastrointestinal (digestive) tract burns
Can burn mouth, throat, and stomach
Dyspnea (Shortness of breath and difficulty breathing)
May cause pulmonary edema
May affect the cardiovascular system
Central nervous system effects
May affect the liver
It may affect the kidneys

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Product code: B1068  Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam. Water spray.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide.
Specific hazards: Flammable. May be ignited by heat, sparks or flames. Container explosion may occur under fire conditions or when heated. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks).

Special Protective Actions for Firefighters
Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out. Dike fire-control water for later disposal; do not scatter the material.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Product code: B1068
Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:
Strong oxidizing agents
Nitrites
Anionic surfactants

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

Product code: B1068  Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>United States</th>
<th>Canada</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>1000 ppm TWA</td>
<td>1000 ppm STEL</td>
<td>1000 ppm STEL</td>
<td>None</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>1 ppm Ceiling 15 min 5 mg/m³ TWA</td>
<td>1 ppm Ceiling 15 min 5 mg/m³ TWA</td>
<td>1 ppm TWA</td>
<td>None</td>
</tr>
</tbody>
</table>

**Appropriate engineering controls**

**Engineering measures to reduce exposure:** Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Face-shield
- **Skin and body protection:** Chemical resistant apron, Long sleeved clothing, Gloves
- **Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.
Physical state: Liquid
Odor: Aromatic.
Molecular/Formula weight: No information available
Flash Point Tested according to: Closed cup
Upper Explosion Limit (%): No information available
Boiling point/range(°C/°F): No information available
Specific gravity: No information available
Evaporation rate: No information available
Odor threshold (ppm): The highest known value is 100 ppm (Ethyl alcohol 200 Proof)
Miscibility: No information available

Appearance: No information available.
Taste: Bitter.
Flammability: flammable
Autoignition Temperature (°C/°F): No information available
Melting point/range(°C/°F): No information available
Bulk density: No information available
pH: No information available
Vapor density: >1
Partition coefficient (n-octanol/water): No information available
Solubility: Easily soluble in cold water
Easily soluble in hot water
Partially soluble in diethyl ether
Soluble in Acetone
Soluble in Methanol

10. STABILITY AND REACTIVITY

Reactivity
Reactive with strong oxidizing agents

Chemical stability
Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization does not occur
Incompatible Materials: Strong oxidizing agents
Nitrates
Anionic surfactants

Hazardous decomposition products: No information available.

Other Information
Corrosivity: No information available

Product code: B1068
Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Eyes. Skin. Ingestion. Inhalation.

Acute Toxicity

Component Information

<table>
<thead>
<tr>
<th>Benzalkonium Chloride</th>
<th>8001-54-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat = 240 mg/kg Oral LD50 Rat</td>
<td></td>
</tr>
<tr>
<td>LD50/oral/mouse = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rabbit = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rat = 1420 mg/kg Dermal LD50</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/rat = No information available</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/mouse = No information available</td>
<td></td>
</tr>
<tr>
<td>Other LD50 or LC50 information = No information available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water</th>
<th>7732-18-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat = &gt; 90 mL/kg Oral LD50 Rat</td>
<td></td>
</tr>
<tr>
<td>LD50/oral/mouse = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rabbit = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rat = No information available</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/rat = No information available</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/mouse = No information available</td>
<td></td>
</tr>
<tr>
<td>Other LD50 or LC50 information = No information available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethyl Alcohol 200 proof</th>
<th>64-17-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat = 7060 mg/kg Oral LD50 Rat</td>
<td></td>
</tr>
<tr>
<td>LD50/oral/mouse = 3450 mg/kg Oral LD50 Mouse</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rabbit = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rat = No information available</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/rat = 124.7 mg/L Inhalation LC50 Rat 4 h</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/mouse = 39000 mg/m³ 4 h</td>
<td></td>
</tr>
<tr>
<td>Other LD50 or LC50 information = &gt;60000 ppm Inhalation LC50 Mouse 1 h</td>
<td></td>
</tr>
<tr>
<td>5900 mg/m³ Inhalation LC50 Rat 6 h</td>
<td></td>
</tr>
<tr>
<td>20000 ppm Inhalation LC50 Rat 10 h</td>
<td></td>
</tr>
<tr>
<td>5560 mg/kg Oral LD50 Guinea Pig</td>
<td></td>
</tr>
<tr>
<td>6300 mg/kg Oral LD50 Rabbit</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benzyl Chloride</th>
<th>100-44-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50/oral/rat = 625 mg/kg Oral LD50 Rat</td>
<td></td>
</tr>
<tr>
<td>LD50/oral/mouse = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rabbit = No information available</td>
<td></td>
</tr>
<tr>
<td>LD50/dermal/rat = No information available</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/rat = 150 ppm Inhalation LC50 Rat 2 h</td>
<td></td>
</tr>
<tr>
<td>LC50/inhalation/mouse = No information available</td>
<td></td>
</tr>
<tr>
<td>Other LD50 or LC50 information = No information available</td>
<td></td>
</tr>
</tbody>
</table>
Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes severe irritation and burns. May be harmful in contact with skin. May cause allergic skin reaction.

Eye Contact: Causes severe eye irritation and possible burns.

Inhalation May cause respiratory allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory tract and mucous membrane irritation with sore throat, coughing, shortness of breath, and delayed lung edema. May cause chemical burns to the respiratory tract. Inhalation of high concentrations of vapor may cause central nervous system effects (affect behavior).

Ingestion Harmful if swallowed. Causes gastrointestinal/digestive tract irritation and burns. May affect behavior (central nervous system depression, depression) and metabolism. May produce burning pains in the mouth, throat, and abdomen, profuse salivation, muscle weakness. May also affect the respiratory system and cardiovascular system, liver and kidneys.

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Skin: Sensitizer. May cause allergic skin reaction (allergic contact dermatitis). Inhalation: May cause allergic respiratory reaction (occupational asthma). Prolonged or repeated ingestion may affect the liver. Prolonged or repeated ingestion may affect the cardiovascular system.

Sensitization: May cause sensitization by inhalation and skin contact.

Mutagenic Effects: May affect genetic material
Experiments with bacteria and/or yeast have shown mutagenic effects
Sister Chromatid Exchange (hamster embryo)

Product code: B1068
Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
**Carcinogenic effects:** Not considered carcinogenic.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
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<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Group 1 - Monograph 100E [2012] in alcoholic beverages Monograph 96 [2010] in alcoholic beverages</td>
<td>A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
<td>Not listed</td>
<td>Present</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>Group 2A - Probably Carcinogenic to Humans - Monograph 71 [1999] combined exposures to alpha-Chlorinated toluenes and Benzoyl chloride</td>
<td>A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
<td>Not listed</td>
<td>Present</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**
May damage fertility. May damage the unborn child

**Reproductive Effects:**
Benzalkonium Chloride is an active ingredient in vaginal spermacides. When applied in the vagina of pregnant rats at much higher doses than those used in spermacides, it caused increased resorptions leading to fetal death, and reduced litter size and weight. No adverse reproductive effects have been reported after oral treatment of rats and guinea pigs and dermal administration to rats

For Ethyl alcohol:
Causes adverse reproductive effects

**Developmental Effects:**
For Ethyl alcohol:
May cause harm to the unborn child
May cause adverse developmental effects

**Teratogenic Effects:**
For Ethyl alcohol:
Causes birth defects (teratogenic effects)

**Specific Target Organ Toxicity**

**STOT - single exposure**
No information available.

**STOT - repeated exposure**
Causes damage to organs through prolonged or repeated exposure.

**Target Organs:**

**Product code:** B1068

**Product name:** BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Benzalkonium Chloride - 8001-54-5
Freshwater Fish Species Data: 0.223 - 0.46 mg/L LC50 Lepomis macrochirus 96 h static 1 0.823 - 1.61 mg/L LC50 Oncorhynchus mykiss 96 h static 1 2.4 mg/L LC50 Oryzias latipes 96 h semi-static 1 1.3 mg/L LC50 Poecilia reticulata 96 h semi-static 1

Ethyl Alcohol 200 proof - 64-17-5
Freshwater Fish Species Data: 12.0 - 16.0 mL/L LC50 Oncorhynchus mykiss 96 h static 1 100 mg/L LC50 Pimephales promelas 96 h static 1 13400 - 15100 mg/L LC50 Pimephales promelas 96 h flow-through 1

Water Flea Data: 9268 - 14221 mg/L LC50 Daphnia magna 48 h 2 mg/L EC50 Daphnia magna 48 h 10800 mg/L EC50 Daphnia magna 24 h

Benzyl Chloride - 100-44-7
Freshwater Fish Species Data: 4.4 - 5.6 mg/L LC50 Pimephales promelas 96 h static 1 4 mg/L LC50 Brachydanio rerio 96 h static 1

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products: Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
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<td>Benzalkonium Chloride</td>
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<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>None</td>
<td>None</td>
<td>P028</td>
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</table>

14. TRANSPORT INFORMATION

DOT

UN-No: UN2920
Proper Shipping Name: Corrosive liquids, flammable, n.o.s. (Benzalkonium Chloride solution)
Hazard Class: 8
Subsidiary Class: 3
Packing group: II
Emergency Response Guide Number: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: No Information available

Product code: B1068  Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.

Description: UN2920, Corrosive liquids, flammable, n.o.s. (benzalkonium chloride solution), 8, (3), PG II

TDG (Canada)
UN-No: UN2920
Proper Shipping Name: Corrosive liquid, flammable, n.o.s.
Hazard Class: 8
Subsidiary Risk: (3)
Packing Group: II
Marine Pollutant: No Information available
Description: UN2920, CORROSIVE LIQUID, FLAMMABLE, N.O.S. (benzalkonium chloride solution), 8(3), PG II

ADR
UN-No: UN2920
Proper Shipping Name: Corrosive liquid, flammable, n.o.s.
Hazard Class: 8
Packing Group: II
Subsidiary Risk: 3
Description: UN2920, Corrosive liquid, flammable, n.o.s. (benzalkonium chloride solution), 8(3), II

IMO / IMDG
UN-No: UN2920
Proper Shipping Name: Corrosive liquid, flammable, n.o.s.
Hazard Class: 8
Subsidiary Risk: 3
Packing Group: II
Marine Pollutant: No information available
EMS: F-E

RID
UN-No: UN2920
Proper Shipping Name: Corrosive liquid, flammable, n.o.s.
Hazard Class: 8
Subsidiary Risk: 3
Packing Group: II
Description: UN2920, Corrosive liquid, flammable, n.o.s. (benzalkonium chloride solution), 8(3), II

ICAO
UN-No: UN2920
Proper Shipping Name: Corrosive liquid, flammable, n.o.s.
Hazard Class: 8
Subsidiary Risk: 3
Packing Group: II
Description: UN2920, Corrosive liquid, flammable, n.o.s. (benzalkonium chloride solution), 8(3), PG II

IATA
UN-No: UN2920
Proper Shipping Name: Corrosive liquid, flammable, n.o.s.
Hazard Class: 8
Subsidiary Risk: 3
Packing Group: II
ERG Code: 8F
Special Provisions: No information available

Product code: B1068
Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
**UN2920, Corrosive liquid, flammable, n.o.s. (benzalkonium chloride solution), 8(3), PG II**

### 15. REGULATORY INFORMATION

#### International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>U.S. TSCA</th>
<th>KOREA KECL (PICCS)</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Not Listed</td>
<td>Present KE-00790</td>
<td>Present</td>
<td>Not present</td>
<td>Present</td>
<td>Present</td>
<td>Not present</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Present (ACTIVE)</td>
<td>KE-13217</td>
<td>Present (2)-202</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present 200-678-6</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>Present</td>
<td>Present KE-05729</td>
<td>Present</td>
<td>Present (3)-39, (3)-102</td>
<td>Present</td>
<td>Present</td>
<td>Present 202-853-6</td>
</tr>
</tbody>
</table>

#### U.S. Regulations

*Ethyl Alcohol 200 proof*
- **Massachusetts RTK:** Present
- **New Jersey RTK Hazardous Substance List:** 0844
- **Pennsylvania RTK:** Present
- **Minnesota - Hazardous Substance List:** Present
- **Louisiana Reportable Quantity List for Pollutants:** Present (listed as Volatile Organic Compounds)
- **California Directors List of Hazardous Substances:** Present
- **FDA - Food Additives Generally Recognized as Safe (GRAS):** 21 CFR 184.1293

*Benzy Alcohol Chloride*
- **Massachusetts RTK:** Present
- **New Jersey RTK Hazardous Substance List:** 0217
- **New Jersey (EHS) List:** 0217 500 lb TPQ
- **New Jersey - Discharge Prevention - List of Hazardous Substances:** Present
- **Pennsylvania RTK:** Environmental hazard
- **Pennsylvania RTK - Environmental Hazard List:** Present
- **Minnesota - Hazardous Substance List:** Present
- **New York Release Reporting - List of Hazardous Substances:**
  - 100 lb RQ
  - 1 lb RQ
- **Louisiana Reportable Quantity List for Pollutants:** 100 lb final RQ
  - 45.4 kg final RQ
- **California Directors List of Hazardous Substances:** Present


**Chemicals Known to the State of California to Cause Cancer:**

⚠️ **WARNING:** This product can expose you to chemicals including (see table below) which is (are) known to the State of California to cause cancer. For more information go to www.p65warnings.ca.gov.

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

⚠️ **WARNING:** This product can expose you to chemicals including (see table below) which is (are) known to the State of California to cause birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>carcinogen</td>
<td>developmental toxicity</td>
<td>development toxicity (Ethyl alcohol in alcoholic beverages)</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>
## CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 312 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>100 lb final RQ 45.4 kg final RQ</td>
<td>500 lb TPQ</td>
<td>None</td>
<td>None</td>
<td>1.0 % de minimis concentration</td>
</tr>
</tbody>
</table>

## U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td></td>
<td>03/11/199408/30/1998</td>
</tr>
</tbody>
</table>

## Canada

### WHMIS 2015 - GHS Classifications

#### WHMIS 2015 Hazard Classification Information:

<table>
<thead>
<tr>
<th>Component</th>
<th>WHMIS 2015 Hazard Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>Acute toxicity - Oral - Category 3: H301 Toxic if swallowed.; Health Hazard Not Otherwise Classified - Category 1: Causes severe damage to the respiratory tract; Skin corrosion/irritation - Category 1: H314 Causes severe skin burns and eye damage.; Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage.</td>
</tr>
<tr>
<td></td>
<td>Not a dangerous product according to HPR classification criteria</td>
</tr>
<tr>
<td>Water</td>
<td>Flammable liquids - Category 2: H225 Highly flammable liquid and vapour.; Serious Eye Damage/Eye Irritation - Category 2B: H320 Causes eye irritation.</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>Flammable liquids - Category 4: H227 Combustible liquid.; Corrosive to Metals - Category 1: H290 May be corrosive to metals. (potentially corrosive to metals; the supplier should be contacted for more information); Acute toxicity - Oral - Category 4: H302 Harmful if swallowed.; Acute toxicity - Inhalation - Category 2: H331 Fatal if inhaled.; Skin corrosion/irritation - Category 2: H315 Causes skin irritation.; Serious Eye Damage/Eye Irritation - Category 2: H319 Causes serious eye irritation.; Skin sensitizers - Category 1: H317 May cause allergic skin reaction.; Carcinogenicity - Category 2: H351 Suspected of causing cancer.</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>Acute toxicity - Oral - Category 3: H301 Toxic if swallowed.; Acute toxicity - Inhalation - Category 2: H330 Fatal if inhaled.; Skin corrosion/irritation - Category 2: H315 Causes skin irritation.; Serious Eye Damage/Eye Irritation - Category 2: H319 Causes serious eye irritation.; Skin sensitizers - Category 1: H317 May cause allergic skin reaction.; Carcinogenicity - Category 2: H351 Suspected of causing cancer.</td>
</tr>
</tbody>
</table>

#### WHMIS 1988 Hazard Class

- B3 Combustible liquid
- D1B Toxic materials
- E Corrosive material

**Product code:** B1068  
**Product name:** BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
Components

Benzalkonium Chloride
Water
Ethyl Alcohol 200 proof

WHMIS 1988

Benzalkonium Chloride
D1B,E
Uncontrolled product according to WHMIS classification criteria
B2,D2B

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

<table>
<thead>
<tr>
<th>Components</th>
<th>WHMIS Ingredient Disclosure List -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>0.1 %</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>1 %</td>
</tr>
</tbody>
</table>

Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CEPA Schedule I - Toxic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Not listed</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not listed</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Not listed</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>Present</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Not listed</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not listed</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Not listed</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

EU Classification

EU GHS - SV - CLP 1272/2008

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>EU GHS - SV - CLP (1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>Acute toxicity - Oral - Acute Tox. 4: H302 Harmful if swallowed. (Minimum classification); Acute toxicity - Dermal - Acute Tox. 4: H312 Harmful in contact with skin. (Minimum classification); Skin corrosion/irritation - Skin Corr. 1B: H314 Causes severe skin burns and eye damage.; Hazardous to aquatic environment - acute hazard - Aquatic Acute 1: H400 Very toxic to aquatic life.612-140-00-5</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td></td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>Flammable liquids - Flam. Liq. 2: H225 Highly flammable liquid and vapour.603-002-00-5</td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td></td>
</tr>
</tbody>
</table>

EU - CLP (1272/2008)

R-phrase(s)
R10 - Flammable.
R34 - Causes burns.
R50 - Very toxic to aquatic organisms.

Product code: B1068
Product name: BENZALKONIUM CHLORIDE, 50 PERCENT SOLUTION, NF
R21/22 - Harmful in contact with skin and if swallowed.

**S-phrase(s)**
S 2 - Keep out of the reach of children.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzalkonium Chloride</td>
<td>8001-54-5</td>
<td>No information</td>
<td></td>
<td>S: (2)-36/37/39-45-61</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>No information</td>
<td></td>
<td>S(2) S7 S16</td>
</tr>
<tr>
<td>Ethyl Alcohol 200 proof</td>
<td>64-17-5</td>
<td>F; R11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzyl Chloride</td>
<td>100-44-7</td>
<td>Xn; R22-48/22 T; R23 Xi; R37/38-41 Carc.Cat.2; R45</td>
<td>No information</td>
<td>S53 S45</td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**
T - Toxic
C - Corrosive.

---

### 16. OTHER INFORMATION

**Preparation Date:** 5/07/2015  
**Revision Date:** 6/7/2018  
**Prepared by:** Sonia Owen  

**Disclaimer:**
All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

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**End of Safety Data Sheet**