MSDS Number: **B0384** * * * * * *Effective Date:* ***11/16/99*** * * * * * *Supercedes:* ***12/08/96***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

J.T.Baker®

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. And Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

BARIUM PEROXIDE ANHYDROUS

1. Product Identification

Synonyms: Barium dioxide; barium peroxide, barium superoxide, barium binoxide
CAS No.: 1304-29-6
Molecular Weight: 169.34
Chemical Formula: BaO2
Product Codes: 0992

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Barium Peroxide	1304-29-6	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS MUSCLES (INCLUDING THE HEART), AND CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Life)
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Oxidizer)
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Yellow (Reactive)

Potential Health Effects

Inhalation:
May cause irritation to the nose, throat, and respiratory tract. Symptoms may include sore throat, coughing, and shortness of breath. Systemic poisoning may occur in sensitive individuals with symptoms similar to those of ingestion. Heavy exposure to dusts may produce a benign pneumoconiosis (baritosis). Systemic poisoning may occur with symptoms similar to those of ingestion. Heavy exposure to dusts can produce benign pneumoconiosis (baritosis).

Ingestion:
May cause tightness of the muscles of the face and neck, vomiting, diarrhea, abdominal pain, muscular tremors, anxiety, weakness, labored breathing, cardiac irregularity, convulsions, and death from cardiac and respiratory failure. Estimated lethal dose lies between 1 to 15 grams.

Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:
Causes irritation, redness, and pain.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin and nervous system disorders or impaired respiratory or cardiac function may be more susceptible to the effects of this substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Get medical attention immediately. Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.
Skin Contact:
Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Wash clothes before reuse. Get medical attention if irritation develops or persists.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

Note to Physician:
Monitor patients with significant ingestion for respiratory, cardiovascular, and blood pressure status. Watch for cardiac arrhythmias, respiratory failure due to flaccid paralysis of respiratory muscles, pulmonary edema, vocal cord paralysis, severe hypertension, and late effect kidney failure. Acute barium poisoning results in hypokalemia. The administration of fluids containing dilute concentrations of potassium salts may be indicated.

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5. Fire Fighting Measures

Fire:
Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.
Explosion:
Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated.
Fire Extinguishing Media:
Use flooding amounts of water. Do not use dry chemical, carbon dioxide or Halon.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Do not release runoff from fire control methods to sewers or waterways. Water spray may be used to keep fire exposed containers cool.

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6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that

does not generate dust.

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7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Separate from incompatibilities. Separate from combustibles, organic or other readily oxidizable materials. Avoid storage on wood floors. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For Soluble Barium Compounds:
OSHA Permissible Exposure Limit (PEL):
0.5 mg (Ba)/m3
ACGIH Threshold Limit Value (TLV):
0.5 mg (Ba)/m3 A4 - not classifiable as a human carcinogen
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full facepiece respirator with dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:
Gray-white powder.
Odor:
Odorless.
Solubility:
Practically insoluble and decomposes in water.
Density:
4.96 @ 20C (68F)
pH:
No information found.
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
800C (1472F) Decomposes.
Melting Point:
450C (842F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Slowly decomposes in air.
Hazardous Decomposition Products:
Emits oxygen and barium oxide when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Hydrogen sulfide, water, peroxy formic acid, magnesium plus zinc plus barium nitrate, powdered aluminum and magnesium, organic matter, and hydroxylamine. Reacts with water, acids and carbon dioxide in the presence of water to form hydrogen peroxide and large amounts of heat.
Conditions to Avoid:
Heat, dusting, contact with combustibles and incompatibles. Moisture and air.

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11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Barium Peroxide (1304-29-6)	No	No	None

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12. Ecological Information

Environmental Fate:
This material may bioaccumulate to some extent.
Environmental Toxicity:
No information found.

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13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: BARIUM PEROXIDE
Hazard Class: 5.1, 6.1
UN/NA: UN1449
Packing Group: II
Information reported for product/size: 500G

International (Water, I.M.O.)

Proper Shipping Name: BARIUM PEROXIDE
Hazard Class: 5.1, 6.1

UN/NA: UN1449
Packing Group: II
Information reported for product/size: 500G

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15. Regulatory Information

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  --------\Chemical Inventory Status - Part 1\------------------------
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  Ingredient                                      TSCA  EC   Japan
Australia
  ----------------------------------------------  ----  ---  -----  --
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  Barium Peroxide (1304-29-6)                      Yes  Yes   Yes
Yes

  --------\Chemical Inventory Status - Part 2\------------------------
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                                                          --Canada--
  Ingredient                                      Korea  DSL   NDSL
Phil.
  ----------------------------------------------  -----  ---   ----  -
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  Barium Peroxide (1304-29-6)                      Yes   Yes   No
Yes

  --------\Federal, State & International Regulations - Part 1\--------
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                                          -SARA 302-    ------SARA
313------
  Ingredient                              RQ    TPQ     List
Chemical Catg.
  ----------------------------------------  ---   -----   ----  ------
--------
  Barium Peroxide (1304-29-6)             No    No      No    Barium
compo

  --------\Federal, State & International Regulations - Part 2\--------
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                                                        -RCRA-    -
TSCA-
  Ingredient                              CERCLA     261.33     8(d)
  ----------------------------------------  ------     ------    -----
-
  Barium Peroxide (1304-29-6)             No         No         No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: No   Fire: No  Pressure: No
Reactivity: No          (Pure / Solid)
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Australian Hazchem Code: 2X

Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0** Other: **Oxidizer**
Label Hazard Warning:
DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS MUSCLES (INCLUDING THE HEART), AND CENTRAL NERVOUS SYSTEM.
Label Precautions:
Keep from contact with clothing and other combustible materials.
Avoid breathing dust.
Avoid contact with eyes, skin and clothing.
Store in a tightly closed container.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Flush skin with soap or mild detergent and water for at least 15 minutes. Wash contaminated clothing before reuse. In all cases, get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 4, 8, 9, 14.
Disclaimer:
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