

MSDS Number: **Z6056** * * * * * *Effective Date: 02/16/06* * * * * *
Supercedes: 05/14/03



Material Safety Data Sheet

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



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.

Mercury Indicator

1. Product Identification

Synonyms: None

CAS No.: Not applicable to mixtures.

Molecular Weight: Not applicable to mixtures.

Chemical Formula: Proprietary Mixture

Product Codes: 4509

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
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Cuprous Iodide	7681-65-4	1 - 50%
Yes		
Sulfur	7704-34-9	1 - 50%
Yes		
Starch	9005-25-8	1 - 50%
Yes		

Silica, Amorphous 7631-86-9 1 - 50%
Yes
Specific CAS No. for Silica, Amorphous is 112945-52-5 (Amorphous fumed silica)

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. DUST MAY FORM FLAMMABLE OR EXPLOSIVE MIXTURE WITH AIR.

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

Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Amorphous fumed silica does not contain crystalline silica.

Inhalation:

May cause dryness and irritation to mucous membranes, nose, and throat. Symptoms may include coughing, sore throat, dyspnea, wheezing, and non-specific chest illnesses.

Ingestion:

Major hazard is that of the copper iodide component, of which only trace amounts are moderately toxic. Symptoms may include burning pain in the mouth, esophagus, and stomach. Symptoms of copper poisoning include hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste, and diarrhea.

Ingestion of very large amounts of sulfur may cause sore throat, nausea, headache,

and possibly unconsciousness in severe cases. May be converted into hydrogen sulfide in the intestine.

Skin Contact:

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

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Prolonged overexposure to sulfur dust can produce possible skin sensitization and permanent eye damage (clouding of the lens and chronic irritation). Prolonged inhalation can cause irritation of mucous membranes.

Chronic iodide overdoses have produced iodism. Headache, fever, sneezing, salivation, and skin rashes may occur. Prolonged or repeated exposure to dusts of copper salts may cause discoloration of the skin or hair, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes.

Aggravation of Pre-existing Conditions:

Sensitive individuals can experience skin irritation from repeated exposure to sulfur dust. Allergenic responses can occur.

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:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Flash point: 207C (405F) OC

Autoignition temperature: 232C (450F)

(Listed values are for sulfur.)

Slight fire hazard when exposed to heat or flame. As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Contact with strong oxidizers may cause fire.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

For fires involving sulfur, extinguish with dry chemical, sand, water spray, fog, or standard foam. If water is used, apply from as far a distance as possible. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Solid streams of water should not be used because of possibility of dispersing dust clouds of sulfur in air.

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.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, corrosion-proof, ventilated area away from moisture, sources of heat or ignition, combustibles and oxidizers. Protect against physical damage. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge. 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. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL) -

Cuprous Iodide: 1 mg/m³ (TWA) for copper dusts & mists as Cu

Amorphous Silica (nuisance dust): 15 mg/m³ (total dust, TWA),
5mg/m³ (respirable fraction, TWA)

Starch: 15 mg/m³ (total dust, TWA),
5 mg/m³ (respirable fraction, TWA)

- ACGIH Threshold Limit Value (TLV) -

Cuprous Iodide: 1 mg/m³ (TWA) for copper dusts & mists as Cu

Amorphous precipitated silica 10 mg/m³ (TWA)

Starch: 10 mg/m³ (TWA), A4-not classifiable as 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 and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) 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. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. 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 and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White to yellow solid.

Odor:

No information found.

Solubility:

Negligible.

Specific Gravity:

No information found.

pH:

No information found.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

No information found.

Melting Point:

No information found.

Vapor Density (Air=1):

Not applicable.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Burning may release hydrogen iodide or iodine vapors and oxides of sulfur and carbon.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

For Sulfur: chlorates, nitrates and other oxidizing agents. Halogens, carbides, zinc, tin, alkali metals, phosphorus, ammonia, ammonium nitrate, charcoal and many other substances.

For Cuprous Iodide: can explode when mixed with potassium or nitromethane. Copper salts promote the decomposition of hydrazine and sodium hypobromite; many form dangerous, explosive, acetylides.

For Amorphous Silica: hydrogen fluoride, fluorine, xenon hexafluoride, oxygen difluoride, and chlorine trifluoride. Substance can explode when wet and heated with magnesium.

Conditions to Avoid:

Heat, flame, ignition sources, dusting and incompatibles.

11. Toxicological Information

Toxicological Data:

For amorphous fumed silica: oral rat LD50: 3160 mg/kg. Investigated as a tumorigen and mutagen.

Carcinogenicity:

IARC category for silica, amorphous (7631-86-9) applies to silicas that may contain crystalline silica. The silica in this product is synthetic and does not contain crystalline silica.

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Cuprous Iodide (7681-65-4)	No	No	None
Sulfur (7704-34-9)	No	No	None
Starch (9005-25-8)	No	No	None
Silica, Amorphous (7631-86-9)	No	No	3

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. 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.

14. Transport Information

Not regulated.

15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
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Ingredient                                TSCA  EC   Japan
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Cuprous Iodide (7681-65-4)                Yes  Yes  Yes   Yes
Sulfur (7704-34-9)                        Yes  Yes  No    Yes
Starch (9005-25-8)                        Yes  Yes  No    Yes
Silica, Amorphous (7631-86-9)             Yes  Yes  Yes   Yes

-----\Chemical Inventory Status - Part 2\-----
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Ingredient                                Korea  --Canada--  Phil.
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Korea  DSL  NDSL
Cuprous Iodide (7681-65-4)                Yes  Yes  No    Yes
Sulfur (7704-34-9)                        Yes  Yes  No    Yes
Starch (9005-25-8)                        Yes  Yes  No    Yes
Silica, Amorphous (7631-86-9)             Yes  Yes  No    Yes

-----\Federal, State & International Regulations - Part 1\-----
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--SARA 302-      -----SARA 313-----
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Ingredient Catg.	RQ	TPQ	List	Chemical
Cuprous Iodide (7681-65-4)	No	No	No	Copper compo
Sulfur (7704-34-9)	No	No	No	No
Starch (9005-25-8)	No	No	No	No
Silica, Amorphous (7631-86-9)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Cuprous Iodide (7681-65-4)	No	No	No
Sulfur (7704-34-9)	No	No	No
Starch (9005-25-8)	No	No	No
Silica, Amorphous (7631-86-9)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
 Reactivity: No (Mixture / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: S7

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.

16. Other Information

NFPA Ratings: Health: **2** Flammability: **1** Reactivity: **0**

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. DUST MAY FORM FLAMMABLE OR EXPLOSIVE MIXTURE WITH AIR.

Label Precautions:

- Avoid contact with eyes, skin and clothing.
- Avoid breathing dust.
- Keep container closed.
- Use only with adequate ventilation.
- Wash thoroughly after handling.
- Keep away from heat, sparks and flame.

Avoid dust cloud in presence of an ignition source.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

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