MSDS Number: **I2680** * * * * * *Effective Date:* *01/30/09* * * * *
** Supercedes:* *07/27/07*

MSDS Material Safety Data Sheet

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

Mallinckrodt CHEMICALS | 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.

IODINE

1. Product Identification

Synonyms: Iodine crystals; iodine sublimed
CAS No.: 7553-56-2
Molecular Weight: 253.81
Chemical Formula: I2
Product Codes:
J.T. Baker: 2208, 2211
Mallinckrodt: 0969, 0975, 0984, 0990, 1004, 1008, 2785, 4467

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Iodine	7553-56-2	100%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! CORROSIVE. CAUSES SEVERE IRRITATION OR BURNS TO EVERY AREA

OF CONTACT. MAY BE FATAL IF SWALLOWED OR INHALED. VAPORS CAUSE SEVERE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. AFFECTS THE CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.

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

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Oxidizer)
Contact Rating: 3 - Severe (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Corrosive. Vapors severely irritate and can burn the mucous membranes and respiratory tract. Excessive tears, rhinitis, tightness in the chest, sore throat, headache and delayed pulmonary edema can result. Inhalation of concentrated vapors may be fatal.

Ingestion:
Corrosive. Can cause severe burns of the mouth, throat and stomach. Causes abdominal pain, diarrhea, fever, vomiting, stupor and shock. Probable lethal dose is 2 to 4 gm of free iodine.

Skin Contact:
Corrosive. Liquid contact may cause blistering burns, irritation, and pain. Vapors may be severely irritating to the skin.

Eye Contact:
Corrosive! Vapors are severely irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure:
Chronic exposure to iodine may cause insomnia, conjunctivitis, inflammation of the nasal mucous, bronchitis, tremor, rapid heart beat, diarrhea and weight loss. Allergic sensitization may occur.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye problems, impaired respiratory function, or disease of the thyroid, lungs, or kidney may be more susceptible to the effects of the 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 immediately. Observe for the development of pulmonary edema.

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

Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse. Iodine stains can be removed by immediately washing skin with 5% sodium thiosulfate solution.

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

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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 and incompatibles may cause extremely violent combustion.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
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.

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6. Accidental Release Measures

Notify safety personnel of iodine spill or leaks. Ventilate area of leak or spill. Wear protective equipment as specified in Sect. 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Collect and containerize as much solid iodine as possible. Cover the spill area with an excess of reducing agent (sodium thiosulfate, bisulfate, or ferrous salts in 3M sulfuric acid) and then neutralize with soda ash. Collect slurry into approved containers.

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7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. 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:
-OSHA Permissible Exposure Limit (PEL):
0.1 ppm Ceiling
-ACGIH Threshold Limit Value (TLV):
0.01 ppm (TWA) inhalable fraction and vapor for Iodine and Iodides.
0.1 ppm (STEL) vapor and aerosol for Iodine.
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, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). This substance has unknown warning properties.
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 a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:
Bluish-black crystals; metallic luster
Odor:
Pungent odor.
Solubility:
Slight water solubility (0.03 g/100 g water @ 20C).
Specific Gravity:
4.98
pH:
5.4 (saturated solution)
% Volatiles by volume @ 21C (70F):
< 1
Boiling Point:
184C (363F) (sublimes)
Melting Point:
114C (237F)
Vapor Density (Air=1):
8.8
Vapor Pressure (mm Hg):
0.3 @ 20C (68F)
Evaporation Rate (BuAc=1):
No information found.

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Toxic gases and vapors may be released if involved in a fire.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Incompatible with ammonia, powdered metals, alkali metals, or strong reducing agents. Reaction can be violent or explosive with acetaldehyde and acetylene. Reacts with ammonium hydroxide to form shock-sensitive iodides on drying.
Conditions to Avoid:
Heat, sunlight, and poor ventilation.

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11. Toxicological Information

Oral rat LD50: 14 gm/kg; Human LDLo: 28 mg/kg; Investigated as a reproductive effector.

Results from Corrositex® Testing: > 60 minutes, non-corrosive.

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

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Iodine (7553-56-2)	No	No	None

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12. Ecological Information

Environmental Fate:
No information found.
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

Not regulated.

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15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Iodine (7553-56-2)	Yes	Yes		

No Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Iodine (7553-56-2)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Iodine (7553-56-2)	No	No	No	No

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

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Iodine (7553-56-2)	No	No	No

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

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: **3** Flammability: **0** Reactivity: **1** Other: **Oxidizer**
Label Hazard Warning:
POISON! DANGER! CORROSIVE. CAUSES SEVERE IRRITATION OR BURNS TO EVERY AREA OF CONTACT. MAY BE FATAL IF SWALLOWED OR INHALED. VAPORS CAUSE SEVERE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. AFFECTS THE CARDIOVASCULAR AND CENTRAL NERVOUS SYSTEMS. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.
Label Precautions:
Do not breathe vapor or mist.
Store in a tightly closed container.
Do not get in eyes, on skin, or on clothing.
Use only with adequate ventilation.
Wash thoroughly after handling.
Do not store near combustible materials.
Keep from contact with clothing and other combustible materials.
Remove and wash contaminated clothing promptly.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 8.
Disclaimer:
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