



**Emulation Technology, Inc.
Material Safety Data Sheet**

to comply with 29 CFR 1910.1200,

OSHA's Hazard Communication Standard Tin/Bismuth/Indium Alloys

Manufactured for Emulation Technology, Inc., by Johnson Mfg. Co.

Lead Free Alloy in Part #'s CQ08ENL, CQ123ENL, CQ16ENL, CQ2000ENL, CQ32ENL

Section I:

Johnson Manufacturing Company
114 Lost Grove Road
Princeton IA 52768

Emergency Telephone 1-(563)-289-5123
CHEMTREC after hours 1-(800)-424-9300
Revised 1/1/2011

Section II: Hazardous Ingredients/Identity information

Hazardous Component	CAS #	OSHA TWA	ACGIH TWA	Other limits	802	807
Tin	7440-31-5	2mg/M3	2mg/M3	NE	17%	30%
Bismuth	7440-69-9	NE	NE	NE	57	56
Indium	7440-74-6	0.1mg/M3	0.1mg/M3	NE	26	14

Only those ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200.

An ingredient marked with an asterisk(*) is also listed in 29CFR 1910.1200(D) #4 as a known or suspected cancer hazard.

+ denotes a chemical regulated as toxic by the Environmental Protection Agency (EPA) as outlined in 40CFR Part 372 (section 313)

Section III: Physical/Chemical Characteristics

Boiling Point: 2840 F
Vapor Pressure (mm Hg): 760 @ 3164F
Vapor Density: NE
Solubility in water: insoluble
Appearance and odor: silver grey solid, odorless

Specific Gravity: 7.0
Melting Point: < 200 F
Evaporation Rate
(butyl acetate=1): < 1

Section IV: Fire and Explosion Hazard Data

Flash Point: non flammable
Extinguishing media: all
Special fire fighting procedures: use self-contained breathing apparatus
Unusual Fire and Explosion Hazards: May release toxic metal & oxide fumes. High concentrations of dust may present explosion hazard. Water trapped below molten metal may explode thus spattering molten metal.

Flammable limits lel: NA uel: NA

Section V: Reactivity Data

Stability : STABLE
Incompatibility (materials to avoid): oxidizing materials, turpentine, acids, chlorides.
Hazardous Decomposition/Byproducts(incomplete combustion):toxic metal&metal oxide fumes
Hazardous Polymerization: WILL NOT OCCUR

Conditions to avoid : none
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Section VI: Health Hazard Data Routes of entry: Inhalation? yes Skin? no Ingestion? Yes

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Health Hazards (acute and chronic) Contact with dust & fumes may cause skin, eye and respiratory irritation. Ingestion and/or inhalation of material or fumes may result in "metal fume fever", flu like symptoms, insomnia, muscle weakness, nausea and abdominal pain. Gross inhalation or ingestion may be toxic and can result in death. Symptoms of toxicity may take hours or days to manifest. Chronic exposures, inhalation or ingestion, may result in kidney, red blood cell. Health effects may be cumulative over many exposures. Studies show that health risks vary by individual. Minimize exposure as a precaution.

Carcinogenicity: not determined NTP? no IARC Monographs? No

Signs and symptoms of exposure: Inhalation-Nose & throat irritation, headache, dizziness, difficulty breathing, coughing, flu like symptoms, metallic taste in mouth. Ingestion-nausea, vomiting, cramps. Skin-redness, burning, rash. Eye-redness, tearing, blurred vision.

Medical Conditions Aggravated by exposure: Blood, kidney, liver conditions

Emergency first aid procedures:

Skin: Flush with water immediately - Seek medical attention if burns are present.

Eyes: Flush with water for 15 minutes - Seek medical attention

Ingestion: Drink large amounts of water, induce vomiting if practical-see medical attention. Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air. Support respiration if required - Seek medical attention.

Section VII: Precautions for Safe Handling and Use

Steps to be taken if material is released or spilled: Vacuum, absorb or flush in to a chemical sewer. Do not use any method which will generate dust.

Waste Disposal Method: dispose of in accordance with all local state and federal regulations.

Other Precautions: Avoid skin & eye contact, inhalation & ingestion of material or fumes.

Wash thoroughly after use. Wash contaminated clothing before reuse. Avoid eating or smoking in lead use area. Keep away from children.

Section VIII: Control Measures

Respiratory Protection (type): Dust mask for particulates. Metal fume/HEPA respirator for fumes.

Ventilation Local Exhaust preferred Special: NE

Mechanical: OK Other: NE

Protective Gloves: impervious Eye Protection: Goggles or face shield

Other Protective Clothing or Equipment: as required to avoid contact.

Work/Hygienic Practices: Wash after use. Follow good industrial hygienic practices.

Section IX: Additional Information

DOT/IATA Hazard Classification: This product is not listed as a DOT or IATA hazardous material.

NFPA Classification (NFPA 325M,8th edition)(Health, Flammability, Reactivity): 2-0-0

Other: NE

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