

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Samarium(II) Iodide

CAS #: 32248-43-4

Relevant identified uses of the substance: Scientific research and development

Supplier details:

Stanford Advanced Materials

E-mail: sales@samaterials.com

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Address: 23661 Birtcher Dr., Lake Forest, CA 92630 U.S.A.

SECTION 2. HAZARDS IDENTIFICATION

OSHA Haz Com: CFR 1910.1200: Acute Toxicity - Oral [Category 4]

Skin Corrosion/Irritation [Category 2]

Eye Damage/Irritation [Category 2A]

Specific Target Organ Toxicity (Single Exposure) [Category 2]

Specific Target Organ Toxicity (Single Exposure) [Category 3]

Specific Target Organ Toxicity (Repeated Exposure) [Category 1]

Flammable Liquids [Category 2]

Signal word: Danger!

Hazard Statement(s): Causes serious eye irritation

Causes skin irritation

Harmful if swallowed

Highly flammable liquid and vapor

May cause damage to organs: Nervous System

May cause respiratory irritation.

Causes damage to organs: Liver Nervous System Kidney through prolonged or repeated exposure.

Pictogram(s) or Symbol(s):Precautionary Statement(s):

[Prevention] Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Wear

protective gloves. Wear eye and face protection. Do not breathe fume, mist, vapors or spray. Wash all

exposed skin thoroughly after handling. Avoid breathing fume, mist, vapors or spray. Use only outdoors or

in a well-ventilated area. Keep away from heat, sparks, open flames or other hot surfaces. - No smoking.

Keep container tightly closed. Ground or bond container and receiving equipment. Use explosion-proof

electrical, ventilating, lighting, and equipment. Use only non-sparking tools. Take precautionary measures

against static discharge. Wear protective gloves, eye protection and face protection.

[Response] If swallowed: Immediately call a poison center or doctor. Rinse mouth. If on skin: Wash with plenty of

water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and

wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. If

exposed or concerned: Call a poison center or doctor. If inhaled: Remove person to fresh air and keep

comfortable for breathing. Call a poison center or doctor if you feel unwell. Get medical advice or attention

if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with

water

or shower. In case of fire: Use dry chemical, CO₂, water spray or alcohol-resistant foam to extinguish.

[Storage] Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated

place. Keep cool.

[Disposal] Dispose of contents and container in accordance with US EPA guidelines for the classification and

determination of hazardous waste listed in 40 CFR 261.3. (See Section 13)

Hazards not otherwise classified: [HNOC] May form explosive peroxides.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

Components: Samarium(II) Iodide (ca. 0.1mol/L in Tetrahydrofuran)

Percent:

CAS Number: 32248-43-4

Molecular Weight: 404.17

Chemical Formula: SmI₂

SECTION 4. FIRST AID MEASURES

Inhalation: Call a poison center or doctor if you feel unwell. Effects of exposure (inhalation) to substance may be

delayed. Inhalation of vapors or contact with substance will result in contamination and potential harmful

effects. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if

breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that

medical personnel are aware of the material(s) involved and take precautions to protect

themselves. Skin contact: Call a poison center or doctor if you feel unwell. Effects of exposure (skin contact) to

substance may be

delayed. Remove and wash contaminated clothing before re-use. Remove and isolate contaminated

clothing and shoes. In case of contact with substance, immediately flush skin with running water for at

least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of

the

material(s) involved and take precautions to protect themselves.

Eye contact: IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Contact with

material may irritate or burn eyes. Call emergency medical service. Move victim to fresh air. Check for

and

remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively.

Effects of

exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Ingestion: Harmful if swallowed. Do not induce vomiting with out medical advice. Effects of exposure (ingestion) to

substance may be delayed. Call a physician or Poison Control Center immediately. Do not use mouth-

tomouth

method if victim ingested the substance; give artificial respiration with the aid of a pocket mask

equipped with a one-way valve or other proper respiratory medical device. Loosen tight clothing such as a

collar, tie, belt or waistband. If a person vomits place them in the recovery position so that vomit will not

reenter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take

precautions to

protect themselves.

Symptoms/effects:

Acute: Redness.

Delayed: May have effects on the respiratory tract.

Immediate medical attention: **WARNING:** It might be hazardous to the person providing aid to give mouth-to-mouth respiration, because

the inhaled material is harmful. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s)

involved and take precautions to protect themselves.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Dry chemical, CO₂, water spray, or alcohol-resistant foam. Consult with

local fire authorities before

attempting large scale fire fighting operations.

Hazardous combustion products: These products include: Halogenated compounds

Other specific hazards: Closed containers may explode from heat of a fire.

Special precautions for fire-fighters:

Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. **CAUTION:** All these products

have a very low flash point: Use of water spray when fighting fire may be inefficient. Do not use straight streams. Runoff to sewer may create fire or

explosion hazard. Containers may explode when heated. Move containers from fire area if you can do

it without risk.

Special protective equipment for fire-fighters: Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations

ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically

recommended by the manufacturer. It may

provide little or no thermal protection.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with skin, eyes, and clothing. Keep people away from and upwind

of spill/leak. Use sparkproof

tools and explosion-proof equipment. Remove all sources of ignition. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation.

Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Personal protective equipment: Wear eye protection (splash goggles) and face protection (full length face shield). Lab coat. Vapor

respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile).

Emergency procedures: Isolate area until gas has dispersed. Do not clean-up or dispose except under

supervision of a specialist.

In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise

caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike

if

needed.

Methods and materials for containment and cleaning up:

ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). All

equipment used when handling the product must be

grounded. Stop leak if without risk. Ventilate the area. Absorb with an inert material and put the spilled

material in an appropriate waste disposal

container. Use clean non-sparking tools to collect absorbed material.

Environmental precautions:

Keep away from living quarters. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into

sewers, basements or confined areas; dike if needed.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling: Do NOT breath gas, fumes, vapor, or spray. Do not ingest. Avoid contact with skin and eyes. Keep away

from heat and sources of ignition. Use explosion-proof equipment. Use only non-sparking hand tool when

handling this product. Ground all equipment containing material. Take measures to prevent build up of

electrostatic charge. Good general ventilation should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face

protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.

Conditions for safe storage: Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from sources of ignition. Store and use away from heat, sparks, open flame, or any other ignition source. Keep away

from

incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods. Store under inert gas (e.g. Argon). Moisture sensitive.

Storage incompatibilities: Combustible substances, Store away from oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits: No data available

Appropriate engineering controls:

Good general ventilation should be sufficient to control airborne levels. Ventilation is normally required

when handling or using this product. Eyewash

fountains should be provided in areas where there is any possibility that workers could be exposed to

the substance. Follow safe industrial

engineering/laboratory practices when handling any chemical.

Personal protective equipment

Respiratory protection: Vapor respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

Hand protection: Wear protective gloves.

Eye protection: Splash goggles.

Skin and body protection: Lab coat.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C): Liquid

Form: Liquid

Color: Blue - Deep blue

Odor: Characteristic

Odor threshold: No data available

Melting point/freezing point: No data available

Boiling point/range: No data available

Decomposition temperature: No data available

Relative density: 0.92

Kinematic Viscosity: No data available

Partition coefficient: No data available

n-octanol/water (log Pow)

Flash point: -19°C (-2°F)

Flammability (solid, gas): No data available

pH: No data available

Vapor pressure: No data available

Vapor density: No data available

Dynamic Viscosity: No data available

Evaporation rate: No data available

(Butyl Acetate = 1)

Autoignition temperature: No data available

Flammability or explosive limits: No data available

Lower: No data available

Upper: No data available

Solubility(ies):

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not Available.

Chemical Stability: Moisture sensitive.

Possibility of Hazardous Reactions: In use, may form flammable/explosive vapor-air mixture.

Conditions to avoid: Exposure to moisture. Moisture sensitive.

Incompatible materials: Oxidizing agents

Hazardous Decomposition Products: No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

No data available

Skin corrosion/irritation:

No data available

Serious eye damage/irritation:

No data available

Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

No data available

Carcinogenicity:

No data available

IARC: No data available NTP: No data available OSHA: No data available

Reproductive toxicity:

No data available

Routes of Exposure: Inhalation, Eye contact, Ingestion, Skin contact.

Symptoms related to exposure:

Overexposure may result in serious illness or death. Skin contact may result in inflammation; characterized by itching, scaling, reddening, or occasionally blistering. Skin contact may result in redness, pain or dry skin. Eye contact may result in redness or pain. Inhalation causes irritation of the lungs and respiratory system.

Potential Health Effects:

Skin and eye contact may result in irritation. Inhalation causes irritation of the lungs and respiratory system.

Target organ(s):

May cause damage to organs: Nervous System

May cause respiratory irritation.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Fish: No data available

Crustacea: No data available

Algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential (BCF): No data available

Mobility in soil: No data available

Partition coefficient:n-octanol/water (log Pow)

No data available

Soil adsorption (Koc): No data available

Henry's Law:

constant (PaM³/mol)

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal of product: Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local

rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn

in a

chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide

assistance but does not replace these laws, nor does compliance in accordance with this section ensure

regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous

Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains,

water ways, or the soil.

Disposal of container: Dispose of as unused product. Do not re-use empty containers.

Other considerations: Observe all federal, state and local regulations when disposing of the

substance.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

UN number:

UN2056

Proper Shipping Name:

Tetrahydrofuran

Class or Division:

3 Flammable liquid

Packing Group:

II

IATA

UN number:

UN2056

Proper Shipping Name:

Tetrahydrofuran

Class or Division:

3 Flammable liquid

Packing Group:

II

IMDG

UN number:

UN2056

Proper Shipping Name:

Tetrahydrofuran Class or Division:

3 Flammable liquid

Packing Group:

II

EmS number: F-E, S-D

Reportable Quantity: 1000 Pounds (454 Kilograms)

SECTION 15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):

This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those

products not on the inventory list:

(i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in

40 CFR 720.0 et sec.

(ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on a SDS sheet.

US Federal Regulations

CERCLA Hazardous substance and Reportable Quantity:

SARA 313: Not Listed

SARA 302: Not Listed

State Regulations

State Right-to-Know

Massachusetts Not Listed

New Jersey Not Listed

Pennsylvania Not Listed

California Proposition 65: Not Listed

Other Information

NFPA Rating:

Health: 2

Flammability: 3

Instability: 0

HMIS Classification:

Health: 2

Flammability: 3

Physical: 0

International Inventories

International Inventories

WHMIS hazard class: B2: Flammable Liquid.

D2A: Materials causing other toxic effects. (Very Toxic)

D2B: Materials causing other toxic effects. (Toxic)

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.