

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/29/2007

1 Identification of substance:

Product details:

Product name: Indium tin oxide

Stock number: 42677

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Emergency Phone: (978) 521-6300
CHEMTREC: (800) 424-9300
Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.
After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Indium (III) oxide (CAS# 1312-43-2); 90%
Tin (IV) oxide (CAS# 18282-10-5), 10%

3 Hazards identification

Hazard description:



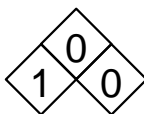
Xi Irritant

Information pertaining to particular dangers for man and environment

R 37 Irritating to respiratory system.

Classification system

NFPA Ratings (scale 0-4)



Health = 1
Fire = 0
Reactivity = 0

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	0
REACTIVITY	0

Health (acute effects) = 1
Flammability = 0
Reactivity = 0

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

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Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.**5 Fire fighting measures****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting: Pick up mechanically.**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

Information about protection against explosions and fires:

No special measures required.

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility: Not required.**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

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Components with limit values that require monitoring at the workplace:**Indium and compounds**

	mg/m3
ACGIH TLV	0.1(In)
Belgium TWA	0.1
Denmark TWA	0.1(In)
Finland TWA	0.1
Netherlands MAC-TGG	0.1
Norway TWA	0.1
Switzerland MAK-W	0.1
United Kingdom TWA	0.1(In); 0.3(In)-STEL
OSHA PEL TWA	0.1

Tin metal, tin oxide and inorganic tin compounds, except tin hydride, as Sn

	mg/m3
ACGIH TLV	2
Austria MAK	2
Belgium TWA	2
Denmark TWA	2
Finland TWA	2
Germany MAK	2
Hungary TWA	1; 2-STEL (skin)
Netherlands MAC-TGG	2
Norway TWA	1
Poland TWA	2
Switzerland MAK-W	2; 4-KZG-W
United Kingdom TWA	2; 4-STEL
USA PEL	2

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Chunks
Color:	White Yellow
Odor:	Odorless

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined

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Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Flammability (solid, gaseous)	Product is not flammable.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined
Solubility in / Miscibility with Water:	Insoluble

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Acids

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

No dangerous decomposition products known

11 Toxicological information**Acute toxicity:****Primary irritant effect:**

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Exposure to indium compounds may cause pain in the joints and bones, tooth decay, nervous and gastrointestinal disorders, heart pain and general debility. Experiments with animals also indicate that indium may cause reduced food and water consumption with weight loss, pulmonary edema, pneumonia, blood, liver and kidney damage, leg paralysis and damage to the brain, heart, adrenals and spleen.

Metallic tin and inorganic tin compounds may cause nausea, vomiting, diarrhea, irritation and pneumoconiosis.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

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12 Ecological information:

General notes:

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

Not a hazardous material for transportation.

DOT regulations:

Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class: None

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Transport/Additional information:

Not dangerous according to the above specifications.

15 Regulations

Product related hazard informations:

Observe the general safety regulations when handling chemicals

Hazard symbols:

Xi Irritant

Risk phrases:

37 Irritating to respiratory system.

Safety phrases:

60 This material and its container must be disposed of as hazardous waste.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.

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16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders

USA