

SAFETY DATA SHEET: Indium Tin Oxide Powder

Version: 2.1

Revision Date: 07/06/2020

Section 1: Identification

1.1) Product identifier:

Product Name : Indium Tin Oxide blue Powder
Synonyms : ITO Blue
Product Number : PO5500, PO5510
CAS Number : 50926-11-9

1.2) Company information:

Address: MSE Supplies, LLC
4400 E Broadway Blvd, Suite 600
Tucson, AZ 85711, USA
Telephone: +1 520-789-6673
Email: info@mse Supplies.com
Emergency Telephone : +1-703-527-3887

1.3) Relevant identified uses of the substance or mixture and uses advised against:

Identifies uses: Laboratory chemicals, Synthesis of substances

Section 2: Hazard(s) Identification

2.1) Classification of the substance or mixture GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Not a hazardous substance or mixture.

2.2) GHS Label elements, including precautionary statements:

Not a hazardous substance or mixture.

2.3) Hazards not otherwise classified (HNOC) or covered by GHS:

None.

Section 3: Composition/Information on Ingredients

3.1) Substances:

Mixture: In₂O₃ and SnO₂

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Component	Classification	Concentration
Diindium Trioxide CAS# 1312-43-2 EC# 215-193-9		$\geq 85\% \leq 100\%$
Tin (IV) Oxide CAS# 18282-10-5 EC# 242-159-0		$\geq 15\% < 20\%$

Section 4: First-Aid Measures

4.1) Description of first aid measures:

General advice

Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2) Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3) Indication of any immediate medical attention and special treatment needed:

No data available

Section 5: Fire-Fighting Measures

5.1) Suitable extinguishing media:

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Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2) Special hazards arising from the substance or mixture:

Tin/tin oxides, Indium/indium oxides

5.3) Advise for firefighters:

Wear self-contained breathing apparatus for firefighting if necessary.

5.4) Further information:

No data available

Section 6: Accidental Release Measures

6.1) Personal precautions, protective equipment, and emergency procedures:

Avoid dust formation. Avoid breathing vapors, mist or gas.

For personal protection see section 8.

6.2) Environmental precautions:

No special environmental precautions required.

6.3) Methods and materials for containment and cleaning up:

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4) Reference to other sections:

For disposal see section 13.

Section 7: Handling and Storage

7.1) Precautions for safe handling:

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

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For precautions see section 2.2.

7.2) Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

Storage class (TRGS 510): 13: Non Combustible Solids

7.3) Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8: Exposure Controls/Personal Protection

8.1) Control parameters:

Components with workplace control parameters

Component	CAS-Number	Value	Control Parameters	Basis
Diindium trioxide	1312-43-2	TWA	0.1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Pulmonary edema, Pneumonitis Dental erosion, Malaise		
		TWA	0.1 mg/m ³	USA. NIOSH Recommended Exposure Limits
Tin(IV) Oxide	18282-10-5	TWA	2 mg/m ³	USA. NIOSH Recommended Exposure Limits
		Also see specific listing for Tin(II) oxide (as Sn).		
		TWA	2 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		Pneumoconiosis (or Stannosis)		
		Adopted values or notations enclosed are those for which changes are proposed in the NIC		

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		See Notice of Intended Changes (NIC) varies		
		PEL	2 mg/m ³	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		TWA	2 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

8.2) Exposure controls:

Appropriate engineering controls:

General industrial hygiene practice.

Personal protective equipment

Eye/face protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection:

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure:

No special environmental precautions required.

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Section 9: Physical and Chemical Properties

9.2) Information on basic physical and chemical properties:

a) Appearance (physical state, color, etc.)	Blue powder
b) Upper/lower flammability or explosive limits	No data available
c) Odor	No data available
d) Odor threshold	No data available
e) Vapor pressure	No data available
f) Vapor density	No data available
g) pH	No data available
h) Density	3.2 g/cm ³
i) Melting point/freezing point	No data available
j) Solubility(ies)	No data available
k) Initial boiling point and boiling range	No data available
l) Flash point	No data available
m) Evaporation rate	No data available
n) Flammability (solid, gas)	No data available
o) Partition coefficient: n-octanol/water	No data available
q) Auto-ignition temperature	No data available
r) Decomposition temperature	No data available
s) Viscosity	No data available
t) Explosive properties	No data available
u) Oxidizing properties	No data available

9.2) Other Safety information:

No data available

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Section 10: Stability and Reactivity

10.1) Reactivity:

No data available

10.2) Chemical Stability:

Stable under recommended storage conditions.

10.3) Possibility of hazardous reactions:

No data available

10.4) Conditions to avoid:

No data available

10.5) Incompatible materials:

Strong oxidizing agents, Potassium, Strong acids, Aluminum, Sodium/sodium oxides, Magnesium

10.6) Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions. - Tin/tin oxides, Indium/indium oxides

Other decomposition products - No data available

In the event of fire: see section 5.

Section 11: Toxicological Information

11.1) Information on toxicological effects:

Acute toxicity:

No data available

Skin corrosion/irritation:

No data available

Serious eye damage/ eye irritation:

No data available

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Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

No data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity:

No data available

Specific target organ toxicity – single exposure:

No data available

Specific target organ toxicity – repeated exposure:

No data available

Aspiration hazard:

No data available

Additional information:

RTECS: Not available

Inorganic tin salts are poorly absorbed into the body. When parenterally administered tin salts are highly toxic. Tin oxide inhaled as a dust or fume leads to a benign pneumoconiosis with no sign of interference with pulmonary function. Deposited dust appears nodular with the particles being mostly extracellular. No necrosis, foreign-body giant-cell reaction, or collagen formation has been seen. Tin salts that have gained access to the blood stream are highly toxic and produce neurologic damage and paralysis. With most common tin salts, the toxicity profile is complicated by hydrolysis in body fluids producing unphysiologic pH values. The reported symptoms of hyperemia, vascular changes with bleeding in the central nervous system, liver, heart, and other organs may be due to tin itself or to the unphysiological pH changes. Ingestion produces vomiting due to the gastric

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irritation from the activity and astringency of tin compounds. Injection of inorganic tin salts produces diarrhea, muscle paralysis, and twitching., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12: Ecological Information

12.1) Toxicity:

No data available

12.2) Persistence and degradability:

No data available

12.3) Bioaccumulative potential:

No data available

12.4) Mobility in soil:

No data available

12.5) Results of PBT and vPvB assessment:

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6) Other adverse effects:

No data available

Section 13: Disposal Considerations

13.1) Waste treatment methods:

Product:

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging:

Dispose of as unused product.

Section 14: Transport Information

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DOT (US):

Not dangerous goods

IMDG:

Not dangerous goods

IATA:

Not dangerous goods

Section 15: Regulatory Information

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Chronic Health Hazard

Massachusetts Right To Know Components:

Tin(IV) Oxide	CAS #	Revision Date
	18282-10-5	2007-03-01

Pennsylvania Right To Know Components:

Tin(IV) Oxide	CAS #	Revision Date
	18282-10-5	2007-03-01
Diindium Trioxide	CAS #	Revision Date
	1312-43-2	2007-03-01

New Jersey Right To Know Components:

Tin(IV) Oxide	CAS #	Revision Date
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Diindium Trioxide	CAS #	Revision Date
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California Prop. 65 Components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

Further information

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. MSE Supplies LLC and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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