

MATERIAL SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision number: 1

Revision date: 28/03/2018

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product Details

Product Code : S211
Full Name : ITO-coated soda lime float glass photovoltaic substrates (8 pixel) substrates
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.
CAS No. : 65997-17-3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory supplies

1.3. Supplier details

Supplied by : Ossila Limited
Solpro Business Park
Windsor Street, Sheffield
S4 7WB, UK
Telephone : 0114 2999 180
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2. Hazards identification

2.1. Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2. Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3. Other hazards

The mixture does not meet the criteria for PBT or vPvB substances according to Annex III of REACH regulation EC 1907/2006.

No hazards identified.

3. Composition/Information on ingredients

3.2. Mixtures

Synonyms : ITO Glass Photovoltaic Substrates (8 Pixel), ITO glass, ITO-coated PV substrates
CAS No. : 65997-17-3

No components need to be disclosed according to the applicable regulations. The products are based on typical soda-lime-silicate flat glass. This product is coated with hard durable amorphous coating of indium tin oxide (80:20 to 90:10 of $\text{In}_2\text{O}_3:\text{SnO}_2$) on the surface around 100 nm in thickness.

4. First aid measures

This product is not considered to be or to contain hazardous chemicals based on EU regulations. Any dust generated during breakage or usage is an amorphous silicate substance and should be considered as a "nuisance particulate".

4.1. Description of first aid measures

After Inhalation

Glass dust: Remove person to fresh air and seek medical attention.

After skin contact

Glass dust: Wash with soap and water. Do not rub.

Glass: If laceration occurs seek first aid or medical attention for cuts and bleeding.

After eye contact

Glass dust: Flush with copious amounts of water and seek medical attention.

Glass: Rinse with water and seek medical attention

After Ingestion

Seek medical attention

4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

No data available.

5. Fire fighting

5.1. Extinguishing media

The product is not classified as flammable or combustible under Directives 67/548 / EEC and Regulation EC No. 1272/2008.

5.2. Special hazards arising from the substance of mixture

Hazardous decomposition products: tin/tin oxides, indium/indium oxides

5.3. Advice for firefighters

Wear a self-contained breathing apparatus if necessary. During a fire, irritating and highly toxic gases and vapours may be generated by thermal decomposition.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment (section 8).

6.2. Environmental precautions

Not considered a hazardous waste. Recycle broken glass wherever appropriate facilities exist.

6.3. Containment and cleaning

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

7. Handling and storage

7.1. Precautions for safe handling

Use proper material handling to avoid accidental breakage. Ensure product is handled with suitable personal protective equipment to avoid lacerations. Avoid formation of dust. Provide exhaust ventilation in places where dust is formed.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry and well-ventilated place protected against breaking, falling, impact and vibrations.

7.3. Specific end uses

Use in laboratories.

8. Exposure controls / Personal protection

8.1. Control parameters

Exposure limit sources

UK – EH40 Workplace Exposure Limits (WEL).

Components with workplace control parameters

The product in its normal state and under normal use does not result in the release of hazardous dusts. Operations such as cutting, grinding or breaking may result in the release of airborne dust which may present a health hazard.

Component	CAS #	Control parameters
Diindium trioxide dust	1312-43-2	0.1 mg/m ³ (TWA); 0.3 mg/m ³ (STEL)
Tin (IV) oxide dust	18282-10-5	2 mg/m ³ (TWA); 4 mg/m ³ (STEL)
Silica (amorphous) dusts	65997-17-3	Inhalable: 6 mg/m ³ (TWA); Respirable: 2.4 mg/m ³ (TWA)

TWA - time weighted average; STEL - Short Term Exposure Limit.

Inhalable – airborne material that enters the nose and mouth during breathing available for deposition anywhere in the respiratory tract.

Respirable – airborne material that penetrates to the lower gas exchange region of the lung.

Biological occupational exposure limits

This product does not contain any hazardous materials with biological limits.

8.2. Exposure controls

The greatest risk in the handling and storage of glass is through laceration. Appropriate precautions to prevent the risk of this should be taken. Cutting activities should be carried out using appropriate personal protective equipment and local engineering controls to reduce the risk of nuisance dusts.

Engineering measures

Handle in accordance with good industrial engineering/laboratory practices for hygiene and safety. Ensure eyewash stations and safety showers are close to the laboratory workstation. Ensure good general ventilation or local exhaust extraction is present where cutting or grinding activities are carried out.

Personal protective equipment

Eyes: Wear safety glasses with side-shields conforming to appropriate government standards such as NOISH (US) or EN166 (EU).

Skin: Glass handlers' cuffs, chaps and apron should be worn as required when cutting or grinding.

Hands: Anti-lacerative gloves recommended when cutting or grinding.

Clothing: The type of equipment should be appropriate for the concentration and amount of substance used.

Respirators: Respiratory protection is not required under normal use where there are no cutting or grinding operations that may generate dust. Where protection from nuisance dusts is needed, use type N95 (US) or type P1 (EN 143) dust masks or those approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	(Semi)transparent, patterned solid
Odour	:	No data available
Odour threshold	:	No data available
pH	:	No data available
Melting/freezing point	:	No data available
Boiling point/range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability	:	No data available
Explosive limits	:	No data available
Vapour pressure	:	No data available
Vapour density	:	No data available
Relative density	:	No data available
Solubility(ies)	:	No data available
Partition coefficient: <i>n</i> -octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other safety information

No data available.

10. Stability and reactivity

10.1 Reactivity

No data available.

10.2. Chemical stability

Stable under normal temperatures and pressures 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

No data available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

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.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

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.

Routes of exposure

Eye contact, ingestion, inhalation, skin contact.

Signs and Symptoms of Exposure

No data available.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological information

12.1. Toxicity

The product is classified as nontoxic.

12.2. Persistence and degradability

Not applicable.

12.3. Bioaccumulative potential

Not applicable.

12.4. Mobility in soil

Not applicable.

12.5. Results of PBT and vPvB assessment

The product does not contain PBT or vPvB substances according to Annex XIII of REACH regulation.

12.6. Other adverse effects

No data available.

13. Disposal

13.1. Waste treatment methods

Product

Glass and glass dust is not considered a hazardous waste under USEPA RCRA, or European Hazardous Waste Directive definitions. The mass of material in the coatings is negligible therefore has no impact on the composition of the glass with regard disposal. The coated glass can be recycled through conventional means alongside other glass when possible. Observe all federal, state and local environmental regulations and directives on waste and hazardous waste. Offer surplus material to a licensed professional waste disposal professional.

Contaminated packaging

Dispose of as unused product.

14. Transport

Non-hazardous for road, air and sea transport.

IATA: Not regulated as a hazardous material.

IMO: Not regulated as a hazardous material.

RID/ADR: Not regulated as a hazardous material.

15. Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006, the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available.

15.2 Chemical safety assessment

Not applicable.

16. Other information

Warranty

This material is for research and development use only. The information provided here is based upon the available information from material suppliers but not warranted as complete and is provided only as a guide. Ossila Limited shall not be held responsible for any damage resulting from use or handling of this product.