CANON OPTRON INC.
SDS Number: EI02
Product Name: ITO

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
Revised Date 2018/6/6

SECTION 1 Chemicals and company identification

Chemical idetifier	ITO
SDS number	EI02
Company name	CANON OPTRON INC.
Address	1744-1, Kanakubo, Yuki-shi, Ibaraki-ken, 307-0015 Japan
Section name	Internal Control Promotion Div.
Telephone number	+81-296-21-3700 (Sales Dept.)
Fax number	+81-296-21-3770
Emergency telephone tumber	+81-296-21-3700 (Sales Dept.)
Recommended uses and restrictions on use	Vacuum deposition material

SECTION 2 Hazards identification

GHS Classification （A classification by JIS Z 7252 "classification methods such as chemical substances based on GHS"）

Physicochemical hazard	Explosives	Classification not possible
	Flammable gases(including chemically unstable gases)	Not applicable
	Aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Not applicable
	Flammable solids	Classification not possible
	Self-reactive substances and mixtures	Classification not possible
	Pyrophoric liquids	Not applicable
	Pyrophoric solids	Classification not possible
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures which,in contact with water,emit Flammable gases	Classification not possible
	Oxidizing liquids	Not applicable
	Oxidizing solids	Classification not possible
	Organic peroxides	Classification not possible
	Corrosive to metals	Classification not possible
Health hazard	Acute toxicity(oral)	Classification not possible
	Acute toxicity(dermal)	Classification not possible
	Acute toxicity(inhalation)	Classification not possible
	Skin corrosion/irritation	Classification not possible

SAFETY DATA SHEET

	Eye damage/eye irritation	Classification not possible
	Respiratory sensitization	Classification not possible
	Skin sensitization	Classification not possible
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Reproductive toxicity	Classification not possible
	Effects on or via lactation	Classification not possible
	Specific target organ toxicity(single exposure)	Classification not possible
	Specific target organ toxicity(repeated exposure)	Category 1
	Aspiration hazard	Classification not possible
Environmental hazard	Hazard to the aquatic environment(acute hazard)	Classification not possible
	Hazard to the aquatic environment(long-term hazard)	Classification not possible
	Hazard to the ozone layer	Classification not possible

Label element

Pictogram (Symbol) Health Hazard

Signal word Danger

Hazard statement Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

【Safety measures】 Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

【First-aid measures】 Get medical advice/attention if you feel unwell.

【Storage】 —

【Disposal】 Dispose of contents/container in accordance with national regulations.

SECTION 3 Composition and information ingredients

Substance/Mixture Mixture

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
Revised Date 2018/6/6

Chemical name or generic name	*Indium oxide*	*Tin oxide*
Chemical formula	*In2O3*	*SnO2*
CAS No.	*1312-43-2*	*18282-10-5*

Concentration or concentration range
In2O3 : 88- 99.<
SnO2 : <1- 12
※As oxidation indium (Ⅲ) and tin oxide (Ⅳ) more than 99.9%

TSCA Inventry	*Indium oxide (In2O3)*	*Tin oxide (SnO2)*
EINECS number	*215-193-9*	*242-159-0*

Radioactive information: It does not use a radioactive substance as a material. Thus, evidence of ionizing radiation occurs is not present.

SECTION 4 First-aid measures

Inhalation
It is possible to move to fresh air victim immediately and keep at rest in a position comfortable for breathing.
If you feel bad, you should contact your doctor.

Skin
Take off all contaminated clothing immediately Remove /.
I flush for 15 minutes or more with soap and plenty of water. If symptoms blisters and pain comes, get medical attention if necessary.

Eye
Be flush eyes for at least 15 minutes with clean water immediately. If you are using the contact lenses, as long as it is not fixed, it can be washed and removed.
Be subject to medical attention without fail.

Ingestion
Rinse mouth immediately.
Be subject to medical attention without fail.

Protection of first aiders
Rescuers Wear protective equipment protective eyewear, such as protective gloves.

SECTION 5 Fire-fighting measures

Extinguishing media
The product itself does not burn.

Extinguishing media are unsuitable
No data available

Specific hazards
No data available

Specific extinguishing methods
The movable container, and transferred to a safe place as soon as possible in case of surrounding fire.

Protection of fire-fighters
In fire fighting, I want to wear (gloves, glasses, mask) the appropriate protective equipment.

SECTION 6 Accidental release measures

Personal precautions,protective equipment,and emergencyprocedures
Wear it (which specify what suited the nature of the product) protective equipment, such as spray or on skin, we do not want to dust inhalation, the gas at the time of work.

Environmental precautions
Do not flowing in rivers and sewage directly spillage.

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
Revised Date 2018/6/6

Methods and materials for containment and methods and materials for cleaning up	And collected in drums or paper bags are collected to wear or have rake those leaked. I to absorb in saw-dust or sediment residue content of the small amount of recovery after.
Secondary disaster prevention measures	No data available

SECTION 7 Handling and storage precautions

Handling

Technical measures	I wear the appropriate protective equipment safety glasses, protective gloves, etc.. After handling Wash hands, face, etc., and gargle.
Safety handling precations	When handling, to handle in place with equipment for general ventilation or local exhaust under.

Storage

Safe storage conditions	Store tightly closed container in a well-ventilated place.
Safety packaging material	No data available

SECTION 8 Exposure controls and personal protection

	In2O3	***SnO2***
Permissible concentration		
ACGIH	*No data available*	*(As inorganic compounds, except tin hydride and tin oxide) 2 mg/m3 TWA (2005 edition)*

Engineering controls: To use devices that are sealed as much as possible, local exhaust ventilation or equipment.

Personal protective equipment

Respiratory protection	Dust mask
Hand protection	Protective glove
Eye protection	Dust-proof glasses
Skin and body protection	Protective clothing

SECTION 9 Physical and chemical properties

Appearance

Physical state	Solid
Form	Pellets, granules
Colour	Pale yellow
Odour	None

	In2O3	***SnO2***
pH	*No data available*	*No data available*

SAFETY DATA SHEET

Melting point/Freezing point	*No data available*	*1127℃*
Boiling point/Initial boiling point and boiling range	*(Evaporation is decomposed at 850 ℃) sublimation*	*1800～1900℃*
Flash point	*Not applicable*	*No data available*
Evaporation rate	*Not applicable*	*No data available*
Flammability (solid, gas)	*Not applicable*	*No data available*
Explosive limits		
LEL	*Not applicable*	*No data available*
UEL	*Not applicable*	*No data available*
Vapour pressure	*No data available*	*No data available*
Vapour density (air = 1)	*No data available*	*No data available*
Specific gravity (Relative density)	*7.18*	*6.9*
(Density)	※ 3.9 ~ 4.8 (pellet) as ITO	
Solubility		
Water	*Insoluble*	*Insoluble*
Other solvents	*No data available*	*No data available*
n-octanol/Water partition coefficient	*No data available*	*No data available*
Auto-ignition temperature	*Not applicable*	*No data available*
Decomposition temperature	*850℃*	*No data available*
Viscosity (Coeffiient of viscosity)	*No data available*	*No data available*
Other data	*None*	*None*

SECTION 10 Stability and reactivity

	In2O3	***SnO2***
Reactivity	*No data available*	*No data available*
Chemical stability	*It is stable in normal handling.*	*It is stable in storage conditions and normal handling.*
Hazardous reactions	*Soluble negligible in acid, but it is not soluble in alkali, and is stable.*	*Do not react in the storage conditions and normal handling.*
Conditions to avoid	*Deposition of dust, diffusion.*	*No data available*
Incompatible materials	*None*	*No data available*
Hazardous decomposition products	*None*	*No data available*

SECTION 11 Hazard information

	In2O3	***SnO2***
Acute toxicity(oral)	*Oral Rat LD50> 10g/kg*	*No data available*

SAFETY DATA SHEET

Acute toxicity(dermal)	*No information*	*No data available*
Acute toxicity(inhalation)	*Lack of information*	*Mouse LD50:> 20g/kg (oral)* *Rat LD50:> 20g/kg (oral)* *Rat LD50:> 6600mg/kg (ip)* *Mouse LD50:> 6600mg/kg (ip)*
Skin corrosion/irritation	*No information*	*Have the potential to irritate the skin.*
Eye damage/eye irritation	*Lack of information*	*No data available*
Respiratory sensitization/Skin sensitization	*No information*	*No data available*
Germ cell mutagenicity	*No data available*	*No data available*
Carcinogenicity	*No data available*	*No data available*
Reproductive toxicity	*No information*	*No data available*
Specific target organ toxicity(single exposure)	*Lack of information*	*No data available*
Specific target organ toxicity(repeated exposure)	*"The compounds that skeleton, TLV-TWA has been set by the inhalation hazard to the lungs and, in particular, effects on the digestive tract and indium", of pulmonary fibrosis by indium tin oxide of two cases in the "human there is a description of "by indium probably the main cause of lung toxicity was observed that" indium tin oxide because it has (74% indium, tin 8%) a high indium content and that "there is a case report.*	*No data available*
Aspiration hazard	*No data available*	*No data available*
Others	None	

SECTION 12 Ecological information

	In2O3	*SnO2*
Ecotoxicity		
Fish	*No data available*	*No data available*
Crustaceantoxicity(singleexposure)	*No data available*	*No data available*
Algae	*No data available*	*No data available*
Other organisms	*No data available*	*No data available*
Persistence and degradablility	*No data available*	*No data available*
Bioaccumulative potential	*No data available*	*No data available*
Mobility in soil	*No data available*	*No data available*
Hazard to the ozone layer	*No data available*	*No data available*
Others	*No data available*	*No data available*

SECTION 13 Notes on disposal

SAFETY DATA SHEET

Waste from residues	Entrust the process to industrial waste disposal contractor has received a license from the governor.
Contaminated container and contaminated packaging	Recycle or in the clean container and take appropriate disposal in accordance with the criteria of the relevant legislation sequence municipality.

SECTION 14 Transport information

	In2O3	***SnO2***
International regulation		
UN classification	*No data available*	*No data available*
UN number	*Not applicable*	*Not applicable*
UN proper shipping name	*None*	*None*
Packing group	*No data available*	*No data available*
Japanese lows and regulations	*None*	*None*
Conditions and specific safety measures of transport	*During transport, I avoid direct rays of the sun, the loading of container damage, corrosion, so that there is no leakage, it is surely the prevention of collapse of cargo.*	*No data available*

SECTION 15 Regulatoly information(Japan)

	In2O3	***SnO2***
PRTR Law	*There is it in the case of an application or an application*	*None*
Occupational Safety and Health Law	*There is it in the case of an application or an application*	*There is it in the case of an application or an application*
Poisonous and Deleterious Substances control Law	*None*	*None*
Explosives control Law	*None*	*None*
High-pressure gas security Law	*None*	*None*
Fire fighting Law	*None*	*None*
Chemical substances control Law	*None*	*None*
Ship safety Law	*None*	*None*
Aviation Law	*None*	*None*
Prevention of marine pollution Law	*None*	*None*
Pneumoconiosis Law	*None*	*None*
Note	Ensure this material in compliance with federal requirements and ensure conformity to local regulations.	

SECTION 16 Other information

Please refer to Japan Ministry of Health, Labour and Welfare notification.
①About thorough prevention of healthy obstacle by handling work such as the indium tin oxide
②A technical indicator about the prevention of healthy obstacle by handling work such as the indium tin oxide（1222 the second December 22, 2010）

The Safety Data Sheet (SDS) has been prepared based on currently available materials, information and data, and may be revised based on new information. Further, the important points in the SDS are made for the purpose of normal handling.
When handling the user product in a specialized manner, take the appropriate safety measures for the application or method.
Further, Canon Optron Inc. has paid sufficient attention to the described contents of the SDS, but does not guarantee the accuracy of its contents.

Literature Reference

[References]
Industrial Safety and Health Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)
Poisonous and Deleterious Substances Control Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)
Pollutant Release and Transfer Register All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)
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