

CANON OPTRON INC.  
 SDS Number: EW02  
 Product Name: WO3(B)

# SAFETY DATA SHEET

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

## SECTION 1 Chemicals and company identification

Chemical identifier	WO3(B)
SDS number	EW02
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 number	+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)	Category 4
	Acute toxicity (dermal)	Classification not possible
	Acute toxicity (inhalation)	Classification not possible
	Skin corrosion/irritation	Classification not possible

CANON OPTRON INC.  
 SDS Number: EW02  
 Product Name: WO3(B)

# SAFETY DATA SHEET

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

	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)	Classification not possible
	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)	Exclamation	
		
Signal word	Warning	
Hazard statement	Harmful if swallowed.	
Precautionary statement		
【Safety measures】	Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.	
【First-aid measures】	IF SWALLOWED :Immediately call poison center or doctor/physician if you feel unwell. Rinse mouth.	
【Storage】	—	
【Disposal】	Dispose of contents/container in accordance with national regulations.	

SECTION 3 Composition and information ingredients

CANON OPTRON INC.  
 SDS Number: EW02  
 Product Name: WO3(B)

# SAFETY DATA SHEET

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

Substance/Mixture	Mixture	
Chemical name or generic name	<i>Tungsten oxide</i>	<i>Magnesium oxide</i>
Chemical formula	<i>WO3</i>	<i>MgO</i>
CAS No.	<i>1314-35-8</i>	<i>1309-48-4</i>
Concentration or concentration range	WO3 : 97.0- 99.9 MgO : 0.1- 3.0	
TSCA Inventory	<i>Tungsten oxide (WO3)</i>	<i>Magnesium oxide (MgO)</i>
EINECS number	<i>215-231-4</i>	<i>215-171-9</i>
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.

CANON OPTRON INC.

SDS Number: EW02  
 Product Name: WO3(B)

# 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 precautions

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

### WO3

### MgO

Permissible concentration

ACGIH

*TWA 5mg/m<sup>3</sup> (as W)  
 STEL 10mg/m<sup>3</sup> (as W)  
 (2010)*

*TWA 10 mg/m<sup>3</sup> (I), STEL –  
 (2000 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

Pellet

Colour

Yellow

Odour

None

### WO3

### MgO

pH

*6.1 : GESTIS (Access on Apr. 2010)*

*No data available*

CANON OPTRON INC.

SDS Number: EW02  
Product Name: WO3(B)

## SAFETY DATA SHEET

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

Melting point/Freezing point	1472°C	2800°C
Boiling point/Initial boiling point and boiling range	1837°C	3600°C
Flash point	Noncombustibility	None
Evaporation rate	No data available	No data available
Flammability (solid, gas)	No data available	No data available
Explosive limits		
LEL	No data available	None
UEL	No data available	None
Vapour pressure	No data available	No data available
Vapour density (air = 1)	No data available	No data available
Specific gravity (Relative density)	7.2	3.6
(Density)	※ as WO3 (B), 4.7 ~ 5.1 (pellet)	
Solubility		
Water	Insoluble	0.086g/L (30°C)
Other solvents	No data available	Was dissolved in acid, and insoluble in alkaline
n-octanol/Water partition coefficient	No data available	No data available
Auto-ignition temperature	Noncombustibility	No data available
Decomposition temperature	No data available	No data available
Viscosity (Coefficient of viscosity)	No data available	No data available
Other data	None	None

## SECTION 10 Stability and reactivity

	<u>WO3</u>	<u>MgO</u>
Reactivity	No data available	No data available
Chemical stability	It is considered to be stable in storage and handling in accordance with the laws and regulations	It is stable in storage conditions and normal handling. There is hygroscopic.
Hazardous reactions	No data available	Reacts violently with halogens and strong acid.
Conditions to avoid	No data available	High-temperature and humidity
Incompatible materials	No data available	Halogen, oxidizing agents, strong acids
Hazardous decomposition products	No data available	No data available

## SECTION 11 Hazard information

WO3MgO

CANON OPTRON INC.

SDS Number: EW02  
Product Name: WO3(B)

## SAFETY DATA SHEET

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

Acute toxicity(oral)	<i>Rat LD50 value: 840 mg / kg bw (ATSDR (2005))</i>	<i>May cause nausea, vomiting when ingested in large amounts.</i>
Acute toxicity(dermal)	<i>No data available</i>	<i>No data available</i>
Acute toxicity(inhalation)	<i>No data available</i>	<i>Nose, throat, trachea is stimulated by inhalation of dust.</i>
Skin corrosion/irritation	<i>No data available</i>	<i>No data available</i>
Eye damage/eye irritation	<i>No data available</i>	<i>No data available</i>
Respiratory sensitization/Skin sensitization	<i>No data available</i>	<i>No data available</i>
Germ cell mutagenicity	<i>In the Ames test negative (NTB DB (Access on May 2010))</i>	<i>No data available</i>
Carcinogenicity	<i>No data available</i>	<i>Substance that can not be classified as a carcinogen to humans: A4</i>
Reproductive toxicity	<i>No data available</i>	<i>No data available</i>
Specific target organ toxicity(single exposure)	<i>In the case of airway administration, was seen mild fibrosis, second only to the growth of white blood cells and histiocytes in the injection site, especially of the lung through the rat (DFGMAK-Doc. 23 (2007)).</i>	<i>No data available</i>
Specific target organ toxicity(repeated exposure)	<i>(90 days in terms dose: about 194 mg / kg) 0.5% by 70 days dietary administration to rats death was observed above, the only description of the weight loss finding low dose (0.1%) of (DFGMAK-Doc. 23 (2007)). In humans in the study of workers with long-term career, reported that there was no incidence of pneumoconiosis in humans who received the exposure of the insoluble material or tungsten exclusively (ACGIH (2001)). On the other hand, reported signs of lung fibrosis and was seen in workers who received the dust exposure, including this substance (ATSDR (2005))</i>	<i>No data available</i>
Aspiration hazard	<i>No data available</i>	<i>No data available</i>
Others	None	

## SECTION 12 Ecological information

	<u>WO3</u>	<u>MgO</u>
Ecotoxicity		
Fish	<i>No data available</i>	<i>No data available</i>
Crustaceantoxicity(single exposure)	<i>No data available</i>	<i>No data available</i>
Algae	<i>No data available</i>	<i>No data available</i>
Other organisms	<i>No data available</i>	<i>No data available</i>
Persistence and degradability	<i>No data available</i>	<i>No data available</i>

CANON OPTRON INC.  
 SDS Number: EW02  
 Product Name: WO3(B)

# SAFETY DATA SHEET

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

Bioaccumulative potential	<i>No data available</i>	<i>No data available</i>
Mobility in soil	<i>No data available</i>	<i>No data available</i>
Hazard to the ozone layer	<i>No data available</i>	<i>No data available</i>
Others	<i>No data available</i>	<i>No data available</i>

## SECTION 13 Notes on disposal

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

	<u>WO3</u>	<u>MgO</u>
International regulation		
UN classification	<i>Not applicable</i>	<i>Not applicable</i>
UN number	<i>None</i>	<i>None</i>
UN proper shipping name	<i>None</i>	<i>None</i>
Packing group	<i>Not applicable</i>	<i>Not applicable</i>
Japanese laws and regulations	<i>Land can not be specific regulatory information Unable maritime regulatory information specific Unable aviation regulations specific information</i>	<i>None</i>
Conditions and specific safety measures of transport	<i>Requires retention of yellow card when transporting. Do not transport with food and feedstuffs. 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. Do not top up heavy objects.</i>	<i>No data available</i>

## SECTION 15 Regulatory information (Japan)

	<u>WO3</u>	<u>MgO</u>
PRTR Law	<i>None</i>	<i>None</i>
Occupational Safety and Health Law	<i>None</i>	<i>None</i>
Poisonous and Deleterious Substances control Law	<i>None</i>	<i>None</i>
Explosives control Law	<i>None</i>	<i>None</i>
High-pressure gas security Law	<i>None</i>	<i>None</i>
Fire fighting Law	<i>None</i>	<i>None</i>

CANON OPTRON INC.  
 SDS Number: EW02  
 Product Name: WO3(B)

# SAFETY DATA SHEET

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

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

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)

Recommendations for Allowable Concentrations (Fiscal 2017): Japan Society for Occupational Health Journal of Occupational Health, Vol. 59 2017

### [WEB site]

National Institute of Technology and Evaluation Homepage

Japan Advanced Information Center of Safety and Health Homepage

Ministry of Health, Labour and Welfare Homepage

### [Regulatory review Tools]

ezCRIC (Japan Chemical Database Ltd)