

CANON OPTRON INC.
 SDS Number: E018
 Product Name: OA-600

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 | OA-600 |
| SDS number | E018 |
| 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")

No data available

Label element

| | |
|--------------------|-------------------|
| Pictogram (Symbol) | No data available |
| Signal word | No data available |
| Hazard statement | No data available |

Precautionary statement

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

【First-aid measures】

If swallowed:

Call a poison center or doctor/physician if you feel unwell.
 Rinse mouth.

If in eyes:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call poison center or doctor/physician

【Storage】

Store in a well-ventilated place, keep container tightly closed.
 Store locked up.

【Disposal】

Dispose of contents/container in accordance with national regulations.

SECTION 3 Composition and information ingredients

| | |
|-------------------|---------|
| Substance/Mixture | Mixture |
|-------------------|---------|

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| | | | |
|--------------------------------------|--|-----------------------------|-------------------------------|
| Chemical name or generic name | <i>Tantalum oxide</i> | <i>Titanium oxide</i> | <i>Titanium oxide</i> |
| Chemical formula | <i>Ta2O5</i> | <i>TiO</i> | <i>Ti2O3</i> |
| CAS No. | <i>1314-61-0</i> | <i>12137-20-1</i> | <i>1344-54-3</i> |
| Concentration or concentration range | Ta2O5 : 90< TiO : <10 Ti2O3 : <10 | | |
| TSCA Inventory | <i>Tantalum oxide (Ta2O5)</i> | <i>Titanium oxide (TiO)</i> | <i>Titanium oxide (Ti2O3)</i> |
| EINECS number | <i>215-238-2</i> | <i>235-236-5</i> | <i>215-697-9</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 emergency procedures | 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. |

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| | |
|---|---|
| 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

| | <u>Ta2O5</u> | <u>TiO</u> | <u>Ti2O3</u> |
|-------------------------------|---|-------------------|-------------------|
| Permissible concentration | | | |
| ACGIH | TWA 5 mg/m ³ (as Ta) (2004 edition) | No data available | No data available |
| 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 | Granular |
| Colour | Black |
| Odour | None |

| | <u>Ta2O5</u> | <u>TiO</u> | <u>Ti2O3</u> |
|----|-------------------|-------------------|-------------------|
| pH | No data available | No data available | No data available |

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| | | | |
|---|-------------------|-------------------|-----------------------|
| Melting point/Freezing point | 1862~1882°C | 1750°C | Decomposed at 2130 °C |
| Boiling point/Initial boiling point and boiling range | No data available | 3000°C | No data available |
| Flash point | None | None | None |
| Evaporation rate | No data available | No data available | No data available |
| Flammability (solid, gas) | No data available | No data available | No data available |
| Explosive limits | | | |
| LEL | None | None | None |
| UEL | None | None | None |
| Vapour pressure | No data available | No data available | No data available |
| Vapour density (air = 1) | No data available | No data available | No data available |
| Specific gravity (Relative density) (Density) | 8.2 | 4.88 | 2.8~3.2 |
| Solubility | | | |
| Water | Insoluble | Insoluble | Insoluble |
| Other solvents | No data available | No data available | No data available |
| n-octanol/Water partition coefficient | No data available | No data available | No data available |
| Auto-ignition temperature | No data available | No data available | No data available |
| Decomposition temperature | No data available | No data available | No data available |
| Viscosity (Coefficient of viscosity) | No data available | No data available | No data available |
| Other data | None | None | None |

SECTION 10 Stability and reactivity

| | <u>Ta2O5</u> | <u>TiO</u> | <u>Ti2O3</u> |
|---------------------|---|---|---|
| Reactivity | No data available | No data available | No data available |
| Chemical stability | It is stable in storage conditions and normal handling. | It is stable in storage conditions and normal handling. | It is stable in storage conditions and normal handling. It is TiO2 by reacting with oxygen and heated to 300 °C than in air. |
| Hazardous reactions | Violently react with bromine trifluoride. It reacts violently with chlorine trifluoride, emit flames. This occurs at around 410 °C, reaction with lithium increases to 595 °C. | Do not react in the storage conditions and normal handling. | Do not react in the storage conditions and normal handling. |
| Conditions to avoid | No data available | No data available | No data available |

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| | | | |
|----------------------------------|---|--------------------------|--------------------------|
| Incompatible materials | <i>Bromine trifluoride, chlorine trifluoride, lithium</i> | <i>No data available</i> | <i>No data available</i> |
| Hazardous decomposition products | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |

SECTION 11 Hazard information

| | <u><i>Ta2O5</i></u> | <u><i>TiO</i></u> | <u><i>Ti2O3</i></u> |
|---|---|--------------------------|--|
| Acute toxicity(oral) | <i>Oral - Rat LD50: 8g/kg, intraperitoneal - rat LD:>5g/kg Oral - Mouse LD50:>4g/kg</i> | <i>No data available</i> | <i>No data available</i> |
| Acute toxicity(dermal) | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Acute toxicity(inhalation) | <i>If inhaled, to stimulate the respiratory system and mucous membranes.</i> | <i>No data available</i> | <i>No data available</i> |
| Skin corrosion/irritation | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Eye damage/eye irritation | <i>No data available</i> | <i>No data available</i> | <i>There is a possibility that irritates the eyes, the skin and the respiratory tract.</i> |
| Respiratory sensitization/Skin sensitization | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Germ cell mutagenicity | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Carcinogenicity | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Reproductive toxicity | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Specific target organ toxicity(single exposure) | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Specific target organ toxicity(repeated exposure) | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Aspiration hazard | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Others | <i>None</i> | | |

SECTION 12 Ecological information

| | <u><i>Ta2O5</i></u> | <u><i>TiO</i></u> | <u><i>Ti2O3</i></u> |
|-------------------------------------|--------------------------|--------------------------|--------------------------|
| Ecotoxicity | | | |
| Fish | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Crustaceantoxicity(single exposure) | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Algae | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Other organisms | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Persistence and degradability | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |
| Bioaccumulative potential | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |

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|---------------------------|--------------------------|--------------------------|--------------------------|
| Mobility in soil | <i>No data available</i> | <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> | <i>No data available</i> |
| Others | <i>No data available</i> | <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>Ta2O5</u> | <u>TiO</u> | <u>Ti2O3</u> |
|--|--------------------------|--------------------------|--------------------------|
| International regulation | | | |
| UN classification | <i>Not applicable</i> | <i>Not applicable</i> | <i>Not applicable</i> |
| UN number | <i>None</i> | <i>None</i> | <i>None</i> |
| UN proper shipping name | <i>None</i> | <i>None</i> | <i>None</i> |
| Packing group | <i>Not applicable</i> | <i>Not applicable</i> | <i>Not applicable</i> |
| Japanese laws and regulations | <i>None</i> | <i>None</i> | <i>None</i> |
| Conditions and specific safety measures of transport | <i>No data available</i> | <i>No data available</i> | <i>No data available</i> |

SECTION 15 Regulatory information (Japan)

| | <u>Ta2O5</u> | <u>TiO</u> | <u>Ti2O3</u> |
|--|--|--------------------------|--------------------------|
| PRTR Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Occupational Safety and Health Law | <i>There is it in the case of an application or an application</i> | <i>No data available</i> | <i>No data available</i> |
| Poisonous and Deleterious Substances control Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Explosives control Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| High-pressure gas security Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Fire fighting Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Chemical substances control Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Ship safety Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Aviation Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Prevention of marine pollution Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |
| Pneumoconiosis Law | <i>None</i> | <i>No data available</i> | <i>No data available</i> |

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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)