Issue date: 9/9/2008
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# Safety Data Sheet

## 1. Chemical product and company identification

| | | |
|---|---|---|
| Product name | : | Tantalum, cube, 5N5 |

**Company information**

| | | |
|---|---|---|
| Name of manufacturer | : | KANTO CHEMICAL CO., INC. |
| Address | : | 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP |
| Name of section | : | Business Administration Department, Reagent Division |
| Telephone number | : | +81-3-6214-1090 |
| Facsimile number | : | +81-3-3241-1047 |
| Mail address | : | BC32@kanto.co.jp |
| Reference No | : | 41177 |
| Recommended use | : | For research use only |
| Restrictions on use | : | Seek expert judgment when using the product for applications other than those recommended. |

## 2. Hazards identification

**GHS classification**

| | | |
|---|---|---|
| Health hazards | Specific target organ toxicity (single exposure) | Category 3 (respiratory tract irritation.) |

Hazard pictograms

| | | |
|---|---|---|
| Signal word | : | Warning |
| Hazard statements | : | May cause respiratory irritation |

**Precautionary statements**

| | | |
|---|---|---|
| Prevention | : | Avoid breathing dust.<br>Use only outdoors or in a well-ventilated area. |
| Response | : | IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>Call a POISON CENTER or doctor if you feel unwell. |
| Storage | : | Store in a well-ventilated place. Keep container tightly closed.<br>Store locked up. |
| Disposal | : | Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. |

## 3. Composition/information on ingredients

| | | |
|---|---|---|
| Distinction of substance or mixture | : | Substance |

| Chemical name | Concentration (%) | Formula | TSCA | EC-No. | CAS RN |
|---|---|---|---|---|---|
| Tantalum | ≥ 99.99 | Ta | Listed | 231-135-5 | 7440-25-7 |

＊Concentration: ≧99.9995%.

## 4. First aid measures

### First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.

First-aid measures after skin contact : If powdered tantalum adheres to the skin, immediately flush the adhered part with plenty of water.

First-aid measures after eye contact : Remove the substance immediately with tweezers.

First-aid measures after ingestion : Give the victim water. If necessary, get medical attention.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

## 5. Fire fighting measures

Suitable extinguishing media : Dry powder extinguishing agent, special powder extinguishing agent, dry sand

Unsuitable extinguishing media : Water spray, Carbon dioxide (CO2), Foam.

Fire hazard : Dust explosion possible if in powder or granular form, mixed with air.
Hydrogen gas may be generated when water is splashed on a metal fire.

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
Fight fire from windward.
Dry chemical powder or dry sand should be used for fires.

Personal protection (Emergency response) : Wear breathing apparatus.

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

### Environmental precautions

Environmental precautions : Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

### Methods and Equipment for Containment and Cleaning up

For containment : Sweep up the chemical and place in a chemical waste container.

Prevention Measures for Secondary Accidents : Remove nearby sources of ignition and prepare extinguishing media.

## 7. Handling and storage

### Handling

| | | |
|---|---|---|
| Technical measures | : | If necessary, wear proper protective equipment to avoid contact with skin or inhalation of dust. |
| Precautions for safe handling | : | Avoid formation of dust and aerosols.<br>Do not allow contact with oxidizing substances. |

### Storage

| | | |
|---|---|---|
| Storage conditions | : | Store in a dark, cool place and tightly closed. |
| Material used in packaging/containers | : | Glass, polyethylene, polypropylene. |

## 8. Exposure controls / Personal protection equipment

| | |
|---|---|
| ACGIH TWA | Not established |

| | | |
|---|---|---|
| Appropriate engineering controls | : | Install a local ventilation system in case of dusty condition. |

**Protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | If necessary, wear dust mask |
| Hand protection | : | Impervious protective gloves |
| Eye protection | : | Safety goggles |
| Skin and body protection | : | Protective clothing, protective boots |

## 9. Physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Solid |
| Color | : | Gray black |
| Odor | : | Odorless |
| pH | : | No data available |
| Melting point | : | 2996 ° C |
| Freezing point | : | No data available |
| Boiling point | : | 5425 ° C |
| Flash point | : | > 250 ° C |
| Auto-ignition temperature | : | > 250 ° C |
| Decomposition temperature | : | No data available |
| Flammability | : | Flammable solid |
| Vapor pressure | : | No data available |
| Relative density | : | No data available |
| Density | : | 14.5 g/cm$^3$ |
| Relative gas density | : | No data available |
| Solubility | : | Water: Insoluble. Insoluble in hydrochloric acid, nitric acid, sulfuric acid. Soluble in hydrofluoric acid, fused alkalies. |
| Partition coefficient n-octanol/water (log Pow) | : | No data available |
| Explosive limits (vol %) | : | No data available |
| Viscosity, kinematic | : | No data available |
| Particle characteristics | : | Particle size:≈ 2 mm |

## 10. Stability and reactivity

| | | |
|---|---|---|
| Reactivity | : | Reacts with fluorine, chlorine, oxgen only on heating. |
| Chemical stability | : | Stable under normal conditions. There is a possibility that the material deteriorates by absorption of the gas, etc. when it is used over 350° C. |
| Possibility of hazardous reactions | : | Stable under normal conditions of use. |
| Conditions to avoid | : | Light, heat. |
| Incompatible materials | : | Strong alkaline substances, hydrofluoric acid. |
| Hazardous decomposition products | : | fume. |

## 11. Toxicological information

| | | |
|---|---|---|
| Acute toxicity (oral) | : | Classification not possible |
| Acute toxicity (dermal) | : | Classification not possible |
| Acute toxicity (inhalation) | : | No classification (gas)<br>No classification (vapor)<br>Classification not possible (dust, mist) |
| Skin corrosion/irritation | : | Classification not possible |
| Serious eye damage/irritation | : | Classification not possible |
| Respiratory sensitization | : | Classification not possible |
| Skin sensitization | : | Classification not possible |
| Germ cell mutagenicity | : | Classification not possible |
| Carcinogenicity | : | Classification not possible<br>There is a description that for local influence, 714 days after implantation of metal tantalum into the rats, there is a report that formation of malignant fibrosarcoma was found in 2 out of 50 sites, but objection and controversy occurred against the report. In addition, there is also a report that for the evaluation of the safety of a novel medical material for implantation in the body, a group in which pellets of this substance were implanted into the bodies of rats (1 mm x 2 mm, cylindrical) was set as a negative control. Up to 20 pellets were intramuscularly implanted in rats, however, tumor development was not observed. Regarding carcinogenicity of this substance, there are no classification results by other organizations. From the above, it was classified as "Classification not possible" due to lack of data for this hazard class. |
| Reproductive toxicity | : | Classification not possible<br>Besides, there is a report that 20 pellets of this substance, 1-2 mm, were implanted into the bodies of male rats, and they were observed for a period corresponding to about 21% of their lifetime, but no adverse effects on the fertility and the quality of sperm (concentration, motility) in males were seen. |
| STOT-single exposure | : | May cause respiratory irritation<br>Base on the description that this substance may be irritating to the respiratory tract, it was classified in category 3 (respiratory tract irritation). |
| STOT-repeated exposure | : | Classification not possible |
| Aspiration hazard | : | Classification not possible |

## 12. Ecological information

### Ecotoxicity

| | | |
|---|---|---|
| Aquatic acute | : | Classification not possible |
| Aquatic chronic | : | Classification not possible |

### Persistence and degradability

No additional information available

### Bioaccumulative potential

No additional information available

### Mobility in soil

No additional information available

### Hazardous to the ozone layer

| | | |
|---|---|---|
| Ozone | : | Classification not possible |

## 13. Disposal considerations

| | | |
|---|---|---|
| Ecological waste information | : | Solidification method :<br>Solidify with cement and bury in a landfill site approved for hazardous waste disposal.<br>Or entrust approved waste disposal companies with the disposal. |
| Contaminated container and packaging | : | In case of disposal of empty bottles, dispose bottles after removing the content thoroughly. |

## 14. Transport information

### International Regulations

### Transport by sea(IMDG)

| | | |
|---|---|---|
| UN-No. (IMDG) | : | Not applicable |
| Proper Shipping Name (IMDG) | : | Not applicable |
| Packing group (IMDG) | : | Not applicable |
| Transport hazard class(es) (IMDG) | : | Not applicable |

### Air transport(IATA)

| | | |
|---|---|---|
| UN-No. (IATA) | : | Not applicable |
| Proper Shipping Name (IATA) | : | Not applicable |
| Packing group (IATA) | : | Not applicable |
| Transport hazard class(es) (IATA) | : | Not applicable |
| Marine pollutant | : | Not applicable |

## 15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

## 16. Other information

| | | |
|---|---|---|
| Data sources | : | Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .<br>NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation. |

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.