

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2010

Revision: 13.07.2010

## 1 Identification of substance

### Product details

Trade name

**Tantalum(V) isopropoxide, 10% w/v in isopropanol/hexane**

Stock number:

40038

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com  
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

## 2 Hazards identification

Hazard designation:

Xn Harmful  
F Highly flammable  
N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.  
 R 36/38 Irritating to eyes and skin.  
 R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
 R 62 Possible risk of impaired fertility.  
 R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 R 65 Harmful: may cause lung damage if swallowed.  
 R 67 Vapours may cause drowsiness and dizziness.

GHS label elements

**Danger**

H225 - Highly flammable liquid and vapour.

**Danger**

H304 - May be fatal if swallowed and enters airways.  
 H361 - Suspected of damaging fertility or the unborn child.  
 H373 - May cause damage to organs through prolonged or repeated exposure.

**Warning**

H315 - Causes skin irritation.  
 H319 - Causes serious eye irritation.  
 H336 - May cause drowsiness or dizziness.



H411 - Toxic to aquatic life with long lasting effects.  
 P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/clothing.  
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P315 Get immediate medical advice/attention.

Prevention:

Response:

## 3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

Tantalum isopropoxide (CAS# 16761-83-4): 10%  
 Isopropanol (CAS# 67-63-0): 45%  
 n-Hexane (CAS# 110-54-3): 45%

## 4 First aid measures

General information

Instantly remove any clothing soiled by the product.  
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
 Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.  
 Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek immediate medical advice.

## 5 Fire fighting measures

Suitable extinguishing agents

CO2, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents

Water.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:  
 Carbon monoxide and carbon dioxide  
 Metal oxide  
 Wear self-contained breathing apparatus.  
 Wear full protective suit.

Protective equipment:

## 6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.  
 Ensure adequate ventilation  
 Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.  
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
 Use neutralizing agent.

Measures for cleaning/collecting:

Dispose of contaminated material as waste according to item 13.  
 Ensure adequate ventilation.

Additional information:

Keep away from ignition sources.  
 See Section 7 for information on safe handling  
 See section 8 for information on personal protection equipment.  
 See Section 13 for information on disposal.

## 7 Handling and storage

Handling

Information for safe handling:

Handle under dry protective gas.

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**Information about protection against explosions and fires:**

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.

**Storage Requirements to be met by storerooms and containers:  
Information about storage in one common storage facility:**

Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Fumes can combine with air to form an explosive mixture.

**Further information about storage conditions:**

Store in cool location.  
Store away from oxidizing agents.  
Store away from water.  
Do not store together with acids.  
Store under dry inert gas.  
This product is moisture sensitive.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from humidity and keep away from water.

**8 Exposure controls and personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Components with critical values that require monitoring at the workplace:**

n-Hexane  
ppm  
ACGIH TLV 50 (skin)  
Austria MAK 50  
Belgium TWA 50  
Denmark TWA 25  
Finland TWA 50; 150-STEL  
France VME 50  
Germany MAK 50  
Hungary TWA 100; 200-STEL  
Japan OEL 40 (skin)  
Korea TLV 50 (skin)  
Netherlands MAC-TGG 25  
Norway TWA 25  
Poland TWA 100; 400-STEL  
Russia TWA 40; 300-STEL  
Sweden NGV 25; 50-KTV  
Switzerland MAK-W 50; 100-KZG-W  
United Kingdom TWA 20  
USA PEL 500

Isopropyl alcohol (2-Propanol)  
ppm  
ACGIH TLV 400; 500-STEL  
Austria MAK 400  
Belgium TWA 400; 500-STEL  
Denmark TWA 200  
France VLE 400  
Germany MAK 400  
Ireland TWA 400; 500-STEL (skin)  
Japan TWA 400-STEL  
Korea TWA 400; 500-STEL  
Netherlands MAC-TGG 400 (skin)  
Norway TWA 100  
Poland TWA 900; 1200-STEL  
Russia TWA 400-STEL  
Sweden NGV 150; 250-STEL  
Switzerland MAK-W 400  
United Kingdom TWA 400; 500-STEL  
OSHA PEL 400  
No data

**Additional information:****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Avoid contact with the eyes and skin.  
Use breathing protection with high concentrations.  
Safety glasses  
Tightly sealed safety glasses.  
Full face protection  
Face protection  
Protective work clothing.

**Breathing equipment:****Eye protection:****Body protection:****9 Physical and chemical properties:****General Information**

**Form:** Liquid  
**Colour:** Yellow  
**Smell:** Benzen-like

**Change in condition**

**Melting point/Melting range:** Not determined  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** -23°C (n-hexane)

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

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**Critical values for explosion:**

Lower: Not determined  
Upper: Not determined

Steam pressure: Not determined

Density: Not determined

Solubility in / Miscibility with Water: Hydrolyzes

**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Materials to be avoided: No decomposition if used and stored according to specifications.

Water/moisture

Acids

Oxidizing agents

Dangerous reactions: No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

Metal oxide

**11 Toxicological information****Acute toxicity:****Primary irritant effect:****on the skin:****on the eye:****Sensitization:****Additional toxicological information:**

Irritant for skin and mucous membranes.

Irritant effect.

No sensitizing effect known.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Possible risk of impaired fertility.

IARC-3: Not classifiable as to carcinogenicity to humans.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

**12 Ecological information:****Ecotoxicological effects:****Remark:****Additional ecological information:****General notes:**

Toxic for fish

Water danger class 3 (Self-assessment): extremely hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Toxic for aquatic organisms

**13 Disposal considerations****Product:****Recommendation**

Consult state, local or national regulations for proper disposal.

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

**Uncleaned packagings:****Recommendation:**

Disposal must be made according to official regulations.

**14 Transport information****Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)****ADR/RID-GGVS/E Class:**

3 (F1) Flammable liquids.

**Kemler Number:**

33

**UN-Number:**

1993

**Packaging group:**

II

**Label**

3

**Special marking:**

Symbol (fish and tree)

**Designation of goods:**

1993 FLAMMABLE LIQUID, N.O.S. (vapor pressure at 50°C at most 110 kPa) (Tantalum isopropoxide/Isopropanol/Hexane solution)

**Limited quantities (LQ)**

LQ4

**Transport category**

2

**Tunnel restriction code**

D/E

**Maritime transport IMDG/GGVSea:****IMDG/GGVSea Class:**

3

**UN Number:**

1993

**Label**

3

**Packaging group:**

II

**EMS Number:**

F-E, S-E

**Marine pollutant:**

Yes (P)

Symbol (fish and tree)

**Correct technical name:**

FLAMMABLE LIQUID, N.O.S. (Tantalum isopropoxide/Isopropanol/Hexane solution)

**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:**

3

**UN/ID Number:**

1993

**Label**

3

**Packaging group:**

II

**Correct technical name:**

FLAMMABLE LIQUID, N.O.S. (Tantalum isopropoxide/Isopropanol/Hexane solution)

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UN "Model Regulation":

UN1993, FLAMMABLE LIQUID, N.O.S., 3, II  
Environmentally hazardous substance, liquid; Marine Pollutant

Environmental hazards:

**15 Regulatory information**

Designation according to EC guidelines:

Code letter and hazard designation of product:

Xn Harmful  
F Highly flammable  
N Dangerous for the environment

Risk phrases:

11 Highly flammable.  
 36/38 Irritating to eyes and skin.  
 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
 62 Possible risk of impaired fertility.  
 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 65 Harmful: may cause lung damage if swallowed.  
 67 Vapours may cause drowsiness and dizziness.  
 16 Keep away from sources of ignition - No smoking.  
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 29 Do not empty into drains.  
 33 Take precautionary measures against static discharges.  
 36/37 Wear suitable protective clothing and gloves.  
 61 Avoid release to the environment. Refer to special instructions/safety data sheets.  
 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Safety phrases:

National regulations

Information about limitation of use:

For use only by technically qualified individuals.  
 Employment restrictions concerning young persons must be observed.  
 Employment restrictions concerning women of child-bearing age must be observed.

Water hazard class:

Water danger class 3 (Self-assessment): extremely hazardous for water.

**16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
 ICAO: International Civil Aviation Organization  
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
 P: Marine Pollutant  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)