

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

# SAFETY DATA SHEET

Version: v1

Revision Date: 2024-06-25

Print Date: 2024-06-26

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Hafnium(IV) t-butoxide  
Product Number : H283048  
Brand : aladdin  
CAS-No. : 2172-02-3

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances.

### 1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION  
Address : 14078 Meridian Parkway,  
Riverside, CA. 92518  
Telephone : +1 (833) 552-7181  
Fax : no data available

### 1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300  
CHEMTREC®, Outside the USA :

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids Category 3

Skin Corrosion/Irritation Category 2

Serious Eye Damage/Eye Irritation Category 2

Specific target organ toxicity (single exposure) Category 3

Target Organs - Respiratory system.

### 2.2 GHS Label elements, including precautionary statements

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Pictogram



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapor  
 H315 Causes skin irritation  
 H319 Causes serious eye irritation  
 H335 May cause respiratory irritation

Precautionary statement(s)

P210 Keep away from heat, hot surface, sparks, open flames and other ignition sources. - No smoking.  
 P235 Keep cool.  
 P240 Ground/bond container and receiving equipment.  
 P241 Use explosion-proof [electrical/ventilating/lighting/.../] equipment.  
 P242 Use only non-sparking tools.  
 P243 Take precautionary measures against static discharge.  
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
 P264 Wash hands [and ...] thoroughly after handling.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P312 Call a POISON CENTER or doctor/... if you feel unwell.  
 P363 Wash contaminated clothing before reuse.  
 P303+P361+P353 IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].  
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.  
 P332+P313 IF SKIN irritation occurs: Get medical advice/attention.  
 P370+P378 In case of fire: Use ... to extinguish.  
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : no data available  
 Formula : C<sub>16</sub>H<sub>36</sub>HfO<sub>4</sub>  
 Molecular weight : 470.65  
 CAS No. : 2172-02-3

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EC-NO. : no data available

Component	Classification	Concentration
Hafnium(IV) t-butoxide	no data available	99.9%-Hf, Zr<1.5%

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

In case of skin contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

In case of eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

If swallowed

Clean mouth with water and drink afterwards plenty of water.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

Unsuitable extinguishing media

no data available

### 5.2 Special hazards arising from the substance or mixture

no data available

### 5.3 Advice for firefighters

wear self-contained breathing and full protective gear.

### 5.4 Further information

Use water spray to cool unopened containers.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

**6.2 Environmental precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

**6.3 Methods and materials for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame.

**7.3 Specific end use(s)**

no data available

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**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****8.2 Exposure controls**

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374

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derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	form: Liquid color: Light yellow
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	no data available
f) Initial boiling point and boiling range	no data available
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	no data available
n) Water solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

### 9.2 Other safety information

no data available

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## SECTION 10: Stability and reactivity

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### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Metal oxides

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

Respiratory system

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

no data available

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**SECTION 12: Ecological information****12.1 Toxicity**

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

no data available

**12.6 Other adverse effects**

no data available

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**SECTION 13:****13.1 Disposal considerations**

Product

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated packaging

Dispose of as unused product.

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**SECTION 14: Transport information**

DOT (US)

UN number: UN1993

Packing group: no data available

Class: no data available

Proper shipping name: no data available

Reportable Quantity(RQ): no data available

Poison Inhalation Hazard: no data available

Environmental Hazards: no data available

IMDG

UN number: UN1993

Packing group: no data available

EMS-No: no data available

Proper shipping name: no data available

IATA

UN number: UN1993

Packing group: no data available

Class: no data available

Proper shipping name: no data available

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## SECTION 15: Regulatory information

Please note that waste disposal should also meet local regulations. If applicable, the chemical meets the requirements of the Regulations on the Safety Management of Hazardous Chemicals (adopted by the State Council on December 4, 2013).

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## SECTION 16: Other information

<b>Prepared By</b>	Regulatory Affairs ALADDIN SCIENTIFIC CORPORATION Email: QualityAssurance@aladdinsci.com
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