

1 Identification

Product identifier

Product name: Pentakis(dimethylamino)niobium(V)

Stock number: 42761

CAS Number:

19824-58-9

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS02 Flame

Water-react. 2 H261 In contact with water releases flammable gas.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS05

Signal word

Danger

Hazard statements

H261 In contact with water releases flammable gas.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/...

P402+P404 Store in a dry place. Store in a closed container.

WHMIS classification

B6 - Reactive flammable material

D2B - Toxic material causing other toxic effects

E - Corrosive material



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 2 Flammability = 2

REACTIVITY 3 Physical Hazard = 3

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

19824-58-9 Pentakis(dimethylamino)niobium(V)

4 First-aid measures

Description of first aid measures

General information Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

Product name: **Pentakis(dimethylamino)niobium(V)**

After skin contact
Immediately 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 a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

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5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.
For safety reasons unsuitable extinguishing agents Water
Special hazards arising from the substance or mixture
Reacts violently with water
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Possibly Hydrogen cyanide (HCN)
Metal oxide fume
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Keep away from ignition sources.
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Prevention of secondary hazards: Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: No information known.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Store away from water/moisture.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
Protect from humidity and water.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/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.
Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: No data
Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.
Eye protection:
Tightly sealed goggles

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USA

Product name: Pentakis(dimethylamino)niobium(V)	
Full face protection Body protection: Protective work clothing.	
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9 Physical and chemical properties	
Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Powder
Color:	Purple
Odor:	Amine-like
Odor threshold:	Not determined.
pH-value: Not applicable.	
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	100 °C (212 °F) (0.1mm Hg)
Sublimation temperature / start:	Not determined
Flash point: Not applicable	
Flammability (solid, gaseous) Contact with water liberates extremely flammable gases.	
Ignition temperature: Not determined	
Decomposition temperature: Not determined	
Auto igniting: Not determined.	
Danger of explosion: Not determined.	
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure: Not applicable.	
Density: Not determined	
Relative density Not determined.	
Vapor density Not applicable.	
Evaporation rate Not applicable.	
Solubility in / Miscibility with	
Water:	Reacts violently
Contact with water releases flammable gases	
Partition coefficient (n-octanol/water): Not determined.	
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information No further relevant information available.	
10 Stability and reactivity	
Reactivity	
Reacts violently with water.	
In contact with water releases flammable gases which may ignite spontaneously.	
Chemical stability Stable under recommended storage conditions.	
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.	
Possibility of hazardous reactions	
Contact with water releases flammable gases	
Reacts violently with water	
Conditions to avoid No further relevant information available.	
Incompatible materials:	
Oxidizing agents	
Water/moisture	
Hazardous decomposition products:	
Carbon monoxide and carbon dioxide	
Metal oxide fume	
Nitrogen oxides	
Possibly Hydrogen cyanide (HCN)	
Dimethylamine	
11 Toxicological information	
Information on toxicological effects	
Acute toxicity: Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.	
LD/LC50 values that are relevant for classification: No data	
Skin irritation or corrosion: Causes severe skin burns.	
Eye irritation or corrosion: Causes serious eye damage.	
Sensitization: No sensitizing effects known.	
Germ cell mutagenicity: No effects known.	
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.	
Reproductive toxicity: No effects known.	
Specific target organ system toxicity - repeated exposure: No effects known.	
Specific target organ system toxicity - single exposure: No effects known.	
Aspiration hazard: No effects known.	
Subacute to chronic toxicity:	
Niobium compounds have caused liver damage in animal studies. Niobium metal has caused kidney damage in experimental animals and fibrogenic effects on the lungs of experimental animals.	
Subacute to chronic toxicity: No effects known.	
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
12 Ecological information	
Toxicity	
Aquatic toxicity: No further relevant information available.	
Persistence and degradability No further relevant information available.	
Bioaccumulative potential No further relevant information available.	
Mobility in soil No further relevant information available.	
Additional ecological information:	
General notes:	
Do not allow material to be released to the environment without proper governmental permits.	
Avoid transfer into the environment.	
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Product name: Pentakis(dimethylamino)niobium(V)

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Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, IMDG, IATA

UN3131

UN proper shipping name

DOT

IMDG, IATA

Water-reactive solid, corrosive, n.o.s. (Pentakis(dimethylamino)niobium(V))
WATER-REACTIVE SOLID, CORROSIVE, N.O.S. (Pentakis(dimethylamino)niobium(V))

Transport hazard class(es)

DOT



Class
Label
Class
Label
IMDG, IATA

4.3 Substances which, in contact with water, emit flammable gases.
4.3+8
4.3 (WC2) Substances which, in contact with water, emit flammable gases
4.3+8



Class
Label

4.3 Substances which, in contact with water, emit flammable gases.
4.3+8

Packing group
DOT, IMDG, IATA

II

Environmental hazards:

Not applicable.

Special precautions for user

Warning: Substances which, in contact with water, emit flammable gases

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

UN "Model Regulation":

UN3131, Water-reactive solid, corrosive, n.o.s. (Pentakis(dimethylamino)niobium(V)), 4.3 (8), II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS05

Signal word Danger

Hazard statements

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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/...

P402+P404 Store in a dry place. Store in a closed container.

National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Product name: **Pentakis(dimethylamino)niobium(V)**

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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 SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / -
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
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)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

USA