

## GHS Safety Data Sheet

SDS No. : NBR01LAEG

Date Issued: 2014/12/03

### Section 1. Identification of the substance or mixture and of the supplier

#### 1.1 Product Information

**Product name:** Nb(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub> Niobium pentaethoxide

Product number	Purity	Form
NBR17LB	99.99%(4N, excluding Ta)	liquid

#### 1.2 Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.  
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 Phone: +81-49-284-1511 Fax: +81-49-284-1351  
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### Section 2. Hazards identification

#### GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
No data available	No data available	<b>Flammable liquids : Category 3</b>

GHS Label: F



Pictograms or symbols

Warning word: Warning

#### Hazard information

**Flammable liquid and vapour**

#### Description of precaution

Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 Use explosion-proof electrical/ventilating/lighting/...equipment. Take precautionary measures static discharge.  
 Wear protective gloves/protective clothing/eye protection/respiratory protection/face protection during handling.  
 Take off the contaminated clothing and wash before reuse.  
 Keep container or bottle tightly closed when not in use.  
 IN CASE OF FIRE: Use dry chemical, CO<sub>2</sub>, water spray, fog or regular form for extinction.  
 IF ON SKIN: Remove immediately all contaminated clothing and rinse skin with water/shower.  
 Then wash skin with plenty of soap and water. If skin irritation occurs, get medical advice/attention.  
 Protect from sunlight. Store in a cool, dry and well-ventilated place. Keep container tightly closed.  
 Dispose of contents/ container in accordance with local/national regulations.

#### Additional hazard information :

Decomposed by water or moisture in the air, and produces toxic, flammable substances.  
 See each section for reference.

### Section 3. Composition / information on ingredients

Chemical or common name: Niobium(V) ethoxide  
 Synonyms: Pentaethoxy niobium  
 Single Substance or Compound: Single substance  
 Chemical formula: Nb(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub>  
 Composition: 100%  
 CAS #: 3236-82-6  
 RTECS#: No data available

TSCA inventory : listed  
 EINECS# : 2217952

#### Section 4. First aid measures

Eye contact: Promptly rinse eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

Skin contact: Remove immediately all contaminated clothing. Wipe off the product immediately by tissue or soft cloth, etc. Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.

Ingestion: Rinse mouth and throat with water. Get medical attention immediately.

Inhalation: Remove the exposed person immediately and provide fresh air. Get medical attention.

#### Section 5. Fire fighting measures

Chemical Name	Flash Point	Autoignition Temperature	Explosion Level (Lower-Upper)	Vapour Pressure
Nb(OC <sub>2</sub> H <sub>5</sub> ) <sub>5</sub>	36 °C	—	—	—

Extinguishing agents:

Carbon dioxide, Dry chemical powder, water spray, fog or regular form.  
 DO NOT use a direct water stream.

Fire fighting: Flammable material.  
 Remove containers to safe place if possible.  
 Use water spray to Cool down nearby structures and containers.  
 Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire.

Specific hazards arising from the chemical:

Burning material releases toxic organic fumes, toxic gases of carbon monoxide / carbon dioxide.

#### Section 6. Accidental release measures

Personal Precaution: Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor.

Environmental hazard precaution:  
 Shut off leak if without risk.  
 Prevent flow out to river, etc. so as not to badly affect.

Methods for containment and cleaning up:  
 Remove all sources of ignition.  
 Avoid unnecessary contacts with spills.  
 Indoor leakage: Ventilate as much as possible until the cleaning is completed.  
 Outdoor leakage: Work from the windward and evacuate the leeward crowd.  
 Absorb or cover with inert material(e.g. vermiculite, sand, earth or other suitable absorbent), then place in closed dry container. Ventilate area and carefully wash spill site with plenty of water after material pick up.

#### Section 7. Handling and storage

Precautions to be taken in handling:

Safe handling: Handle the material in a dry inert gas atmosphere, utilizing glove bag or

glove box. Keep away from moisture when handling.  
 Keep container or bottle tightly closed when not in use.  
 Avoid prolonged or repeated exposure.  
 Handling worker wears suitable protective clothing.  
 Keep away from heat, sparks and naked flame.

Precautions to be taken in storage:

General precautions: Store the material in a sealed container.  
 Store in a cool, dry, well ventilated and dark place away from incompatible materials.  
 Keep away from any heat, sparks, and flames.

### Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH(2013): No data available  
 OSHA (2006) : No data available

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles, impervious gloves, protective wear, protective boots.

### Section 9. Physical and chemical properties

Color and Form: Yellow liquid  
 Chemical formula: Nb(OC<sub>2</sub>H<sub>5</sub>)<sub>5</sub>  
 Formula weigh 318.2  
 Melting point: 5-6 °C  
 Boiling point: 140-142 °C/13.3Pa  
 Specific gravity: 1.268 g/cm<sup>3</sup>  
 Water solubility: Decomposes  
 Flammable: Flammable substance  
 Oxidation: No data available  
 Others: Sensitive to moisture of the air.

### Section 10. Stability and reactivity

Stability: Stable in an inert gas under room temperature.  
 Decomposed by moisture in the air.

Reactivity

Incompatibility: Oxidizing agents  
 Conditions to avoid: Heat, sparks and flames.  
 Water, Moisture

Hazard decomposition products

Carbon monoxide, carbon dioxide, niobium oxides and toxic fumes.

### Section 11. Toxicological information

Acute toxicity : GHS : No data available  
 Skin corrosive / irritation: GHS : No data available  
 Serious eye damage / irritation: GHS : No data available  
 Respiratory sensitization: GHS : No data available  
 Skin sensitization: GHS : No data available  
 Germ cell mutagenicity: GHS : No data available

Carcinogenicity:	GHS : No data available
Toxic to reproduction:	GHS : No data available
Specific target organ toxicity	
– single exposure:	GHS : No data available
– repeated exposure:	GHS : No data available
Aspiration hazard:	GHS : No data available
Other cautions:	Careful attention to the risk of ethanol (degradation product).

## Section 12. Ecological information

Ecotoxicity:	
Hazards to the aquatic environme	
– acute toxicity:	GHS : No data available
– chronic toxicity:	GHS : No data available
Hazrdous the ozone layer:	GHS : No data available
	No Freon or Halon
Degradability:	No data available
Bioaccumulative potential:	Nb Biological half-life 760 day, Rate of absorpction oral= 0.0001, Respiratory tract= 0.25
Mobility in soil:	No data available

## Section 13. Disposal considerations

Disposal method:	User of the product should contract with the local government or licensed 'Industrial Waste Haulers' for disposal of waste.
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## Section 14. Transport information

UN number:	1993
IATA shipping name:	Flammable liquid, n.o.s.
IATA classification:	Hazardous Class 3 (Flammable liquids)
IATA packing group:	III
HS code:	2905.19
Marine pollution:	None

## Section 15. Regulatory information

TSCA inventory : listed  
Please refer to any other local / national measures that may be relevant.

## Section 16. Other information

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.