

## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Vanadium oxyisopropoxide  
Synonyms: Triisopropyl vanadate, Triisopropoxyvanadium(V) oxide  
Product Code: NP-5818  
General Use: Catalyst  
Product Description: Not Available  
MSDS Number: 5818EU060313

MANUFACTURER: Company Name: NICHIA CORPORATION  
Address: 491 Oka, Kaminaka-cho, Anan-shi, TOKUSHIMA 774-8601 JAPAN  
Telephone number: +81-884-22-2311

#### IMPORTER/DISTRIBUTOR ESTABLISHED in EU

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(Telephone number) +31-20-5060900  
EMERGENCY TELEPHONE NUMBER: +31-20-5060900

#### IMPORTER/DISTRIBUTOR ESTABLISHED in Japan

(Company name) NICHIA CORPORATION TOKYO SALES OFFICE  
(Address) 13F Tamachi Center Building 34-7, Shiba 5-Chome, Minato-Ku, TOKYO  
108-0014, JAPAN  
(Telephone number) +81-3-3456-3784  
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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical formula:  $\text{VO}(\text{O}-\text{iC}_3\text{H}_7)_3$

Component	Chemical name	Wt%	CAS Registry#	EINECS No.
$\text{VO}(\text{O}-\text{iC}_3\text{H}_7)_3$	Triisopropyl vanadate	100	5588-84-1	226-997-4

### 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Causes eye burns. Flammable liquid and vapor. Harmful if swallowed. Causes skin and respiratory tract irritation. May be harmful if absorbed through skin or if inhaled. Moisture sensitive.

#### POTENTIAL HEALTH EFFECTS:

Inhalation: Causes respiratory tract irritation. May be harmful if inhaled.

Eye: Causes eye burns.

Skin: Causes skin irritation. May be harmful if absorbed through the skin. Triisobutyl vanadate, a very similar chemical, has a dermal LD50 (rabbit) = 1930 mg/k.

Ingestion: Harmful if swallowed. May cause severe irritation of the digestive tract.

Hydrolyzes in the presence of water and body fluids to isopropanol, which can cause headache, nausea, narcosis, and mental depression.

POTENTIAL ENVIRONMENTAL EFFECTS: No information available.

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### 4. FIRST AID MEASURES

**INHALATION:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**EYE:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

**SKIN:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid. Wash clothing before reuse.

**INGESTION:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person..

**PROTECTION TO FIRST-AIDERS:** Treat symptomatically and supportively.

### 5. FIRE FIGHTING MEASURES

**FLAMMABLE PROPERTIES:**

Flashpoint : 44 deg C ( 111.20 deg F)

**EXTINGUISHING MEDIA: DO NOT USE WATER!**

Use dry chemical, dry sand, or carbon dioxide.

**FIREFIGHTING INSTRUCTIONS:** Wear full fire-fighting turn-out gear (full bunker gear) and respiratory protection (self-contained breathing apparatus).

### 6. ACCIDENTAL RELEASE MEASURES

**LAND SPILL:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Isolate area and deny entry.

**WATER SPILL:** Dike spill. Prevent material from entering sewers, waterways, or low areas.

### 7. HANDLING AND STORAGE

**HANDLING:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Avoid breathing vapor or mist. Do not get in eyes. Avoid contact with skin and clothing.

**STORAGE:** Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**EXPOSURE LIMIT VALUE:** None listed

**ACGIH:** None listed

**EXPOSURE CONTROLS**

**OCCUPATIONAL EXPOSURE CONTROLS**

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

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### Personal Protection

Respiratory Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Eye Protection: Safety glasses are required.

Skin Protection: Protective gloves are recommended.

Environmental Exposure Controls: No information available.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

Physical State: Liquid

Color: Pale Yellow

Odor: alcohol-like

pH: No information available.

Vapour Pressure: 133.32pa(59 )

Flash Point: 69.5

Flammability: No information available.

Specific Gravity: 1.038g/cm<sup>3</sup>@20

Solubility in Water: 0.2wt% @25

### 10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Not available.

STABILITY: Stable under normal temperatures and pressures. Will hydrolyze in mildly exothermic manner in the presence of water to form isopropanol and vanadic acids.

MATERIALS TO AVOID: Ignition sources, exposure to moist air or water.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, vanadium oxide (VO<sub>x</sub>) gases.

### 11. TOXICOLOGICAL INFORMATION

Acute Toxicity: No information available.

Very similar chemical, triisobutyl vanadate, CAS 19120-62-8, has oral LD50 (rat) = 293 mg/kg and is corrosive to rabbit eyes.

(Oral, Dermal, Inhalation)

Eye Irritation: No information available.

Skin Irritation: No information available.

Sensitization: No information available.

Mutagenicity: No information available.

### 12. ECOLOGICAL INFORMATION

ECOTOXICITY: No information available.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOCUMULATIVE POTENTIAL: No information available.

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### 13. DISPOSAL CONSIDERATIONS

Comply with all EU, national and local regulations.

Do not dump this material into sewers, on the ground or into any body of water.

### 14. TRANSPORT INFORMATION:

#### LAND TRANSPORT

##### ADR, RID

Class: 6.1

Packing Group(PG):

UN Number: 3285

Proper Shipping Name: VANADIUM COMPOUNDS, N.O.S.

#### SEA TRANSPORT

##### IMDG

Class: 6.1

Packing Group(PG):

UN Number: 3285

Proper Shipping Name: VANADIUM COMPOUNDS, N.O.S.

Marine Pollutant: Not applicable

#### AIR TRANSPORT

##### ICAO/IATA

Class: 6.1

Packing Group(PG):

UN Number: 3285

Proper Shipping Name: VANADIUM COMPOUNDS, N.O.S.

### 15. REGULATORY INFORMATION

Please refer to any other EU, national and local measures.

### 16. OTHER INFORMATION

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