



## Safety Data Sheet

In accordance with CFR 1910.1200 (OSHA HCS)

SDS No. 2594

Review date: September 17, 2018

### 1 Identification of substance and company

**Product name:** Gallium (III) oxide  
**Product code:** 18182  
**Recommended use of the chemical:** Research and product development  
**Manufacturer/Supplier:** Noah Technologies Corporation  
1 Noah Park  
San Antonio, Texas 78249-3419  
Phone: 210-691-2000  
Fax: 210-691-2600  
Web site: www.noahtech.com

**Emergency information:** CHEMTREC  
800-424-9300

### 2 Hazards identification

**GHS classification:** Not a hazardous substance or mixture  
**Information pertaining to particular dangers for man and environment:** Not applicable  
**HMIS ratings (scale 0-4):**  
Health hazard: 1  
Flammability: 0  
Physical hazard: 0

### 3 Composition/Information on ingredients

**Chemical name:** Gallium (III) oxide  
**Designation: (CAS#):** 12024-21-4  
**EC number:** 234-691-7  
**Formula:** Ga<sub>2</sub>O<sub>3</sub>  
**Synonyms:** Gallium sesquioxide, gallium trioxide

### 4 First aid measures

**After inhalation:** Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Only qualified personnel should administer oxygen. Get medical attention.  
**After skin contact:** Wash with soap and water. If irritation persists, get medical advice.  
**After eye contact:** Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers.  
**After ingestion:** If conscious, rinse mouth out with water. Never give anything by mouth to an unconscious person. Seek medical advice.  
**Information for doctor:** Gallium and gallium compounds may cause metallic taste, dermatitis and depression of the bone marrow function. Large doses may cause hemorrhagic nephritis.

### 5 Fire-fighting measures

**Suitable and unsuitable extinguishing agents:** Use water spray, carbon dioxide, dry chemical, earth or sand, or foam. Use extinguishing media most suitable to surrounding conditions.  
**Special hazards caused by the material, its products of combustion or resulting gases:** Oxides of gallium  
**Special fire fighting procedures:** Wear self-contained breathing apparatus. Always wear full fire fighting equipment/clothing in fire situations

### 6 Accidental release measures

**Person-related safety precautions:** Always wear personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation.  
**Measures for environmental protection:** Prevent spread or spill. Do not allow material to be released to the environment without proper governmental permits.  
**Measures for cleaning/collecting:** Sweep or scoop up and remove. Keep in suitable, closed containers for disposal. Dispose of contaminated material as waste according to item 13  
**Additional information:** See Section 7 for information on safe handling  
See Section 8 for information on personal protective equipment

See Section 13 for information on disposal  
See Section 15 for regulatory information

#### 7 Handling and storage

<b>Information for safe handling:</b>	Keep container tightly sealed. Store in cool, dry place. Ensure good ventilation/exhaust at the workplace
<b>Storage requirements to be met by storerooms and containers:</b>	No special requirements.
<b>Incompatibility (avoid contact with):</b>	Strong acids, strong oxidizers, strong bases Magnesium
<b>Further information about storage conditions:</b>	Water / moisture

#### 8 Exposure controls/personal protection

<b>Ventilation requirements:</b>	Always maintain exposure below permissible exposure limits. Local exhaust.
<b>Components with exposure limits that require monitoring:</b>	Contains no substances with occupational exposure limit values
<b>General protective and hygienic measures:</b>	The usual precautionary measures for handling chemicals should be adhered to 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
<b>Personal protective equipment:</b>	
<b>Respiratory protection:</b>	Only use NIOSH/MESA or CEN approved equipment. For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.
<b>Hand protection:</b>	Neoprene / Natural rubber / Impervious
<b>Eye protection:</b>	Safety glasses
<b>Skin protection:</b>	Protective work clothing
<b>Additional protective equipment:</b>	Sufficient to prevent contact. Emergency eyewash and safety shower.

#### 9 Physical and chemical properties

<b>Physical state:</b>	Solid powder
<b>Color:</b>	White
<b>Odor:</b>	Odorless
<b>Molecular Weight (Calculated):</b>	187.44
<b>pH</b>	No data available
<b>Melting point/freezing point/range:</b>	1795 C +/- 15
<b>Boiling point/range:</b>	No data available
<b>Sublimation temperature/start:</b>	No data available
<b>Flash point:</b>	Non-flammable
<b>Autoignition temperature:</b>	No data available
<b>Danger of explosion:</b>	No data available
<b>Flammable limits:</b>	No data available
<b>Lower:</b>	No data available
<b>Upper:</b>	No data available
<b>Evaporation Rate:</b>	No data available
<b>Vapor pressure (mm Hg):</b>	No data available
<b>Specific gravity:</b>	5.88 - 6.44
<b>Solubility in/Miscibility with water:</b>	Insoluble

#### 10 Stability and reactivity

<b>Chemical stability:</b>	Stable
<b>Conditions to be avoided:</b>	Water / moisture See section 7 for information on proper handling and storage
<b>Materials to be avoided:</b>	Strong acids, strong oxidizers, strong bases Magnesium

#### 11 Toxicological information

<b>LD/LC50 values that are relevant for classification:</b>	oral-mouse LD <sub>50</sub> : 10,000 mg/kg
<b>Primary irritant or corrosive effect:</b>	
<b>on the skin:</b>	Mild irritation
<b>on the eye:</b>	Moderate irritation
<b>Sensitization:</b>	Material should be treated as a nuisance dust
<b>Potential health effects:</b>	
<b>Inhalation:</b>	May be irritating to the mucous membranes and upper respiratory tract
<b>Signs and symptoms of exposure:</b>	Gallium and gallium compounds may cause metallic taste, dermatitis and depression of the bone marrow function. Large doses may cause hemorrhagic nephritis.

**Carcinogenicity:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

#### 12 Ecotoxicological information

**General Notes:** No ecological data available

#### 13 Disposal considerations

**Recommendation:** Consult state, local or national regulation for proper disposal  
Allow professional disposal company to handle waste  
Must be specially treated under adherence to official regulations

**Unclean packagings recommendation:** Disposal must be made according to official regulations

#### 14 Transport information

##### Land transport DOT

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Gallium oxide

##### Air transport ICAO-TI and IATA-DGR:

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Gallium oxide

##### UPS Ground / FedEx Ground

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Gallium oxide

##### UPS Air

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Gallium oxide

#### 15 Regulatory information

**SARA Section 302 Extremely Hazardous components and corresponding TPQs:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**SARA Section 311 / 312 hazards:** No SARA Hazards

**SARA Section 313 components:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313

**California Proposition 65 components:** This product does not contain any chemicals know to State of California to cause cancer, birth defects, or any other reproductive harm

**TSCA:** Listed in inventory

#### 16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.