

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

## 1 Identification of substance:

### Product details:

**Product name:** Terbium sulfide

**Stock number:** 39643

### Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company  
Johnson Matthey Catalog Company, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Emergency Phone: (978) 521-6300  
CHEMTREC: (800) 424-9300  
Web Site: [www.alfa.com](http://www.alfa.com)

**Information Department:** Health, Safety and Environmental Department

### Emergency information:

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

## 2 Composition/Data on components:

### Chemical characterization:

#### Description: (CAS#)

Terbium sulfide (CAS# 12138-11-3); 100%

#### Identification number(s):

EINECS Number: 235-244-9

## 3 Hazards identification

### Hazard description:



Xi Irritant  
F Highly flammable

### Information pertaining to particular dangers for man and environment

R 15/29 Contact with water liberates toxic, extremely flammable gas.

R 31 Contact with acids liberates toxic gas.

R 36/37/38 Irritating to eyes, respiratory system and skin.

### Classification system

#### HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	2
FIRE	2
REACTIVITY	2

Health (acute effects) = 2

Flammability = 2

Reactivity = 2

### GHS label elements



Warning

2.12/3 - In contact with water releases flammable gas.



Warning

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

3.8/3 - May cause respiratory irritation.

### Prevention:

Handle under inert gas. Protect from moisture.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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

### Response:

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

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

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

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If skin irritation occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice/attention.  
 Take off contaminated clothing and wash before reuse.  
 In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

**Storage:**

Store in a dry place. Store in a closed container.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.

**Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

**4 First aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
 Seek immediate medical advice.

**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 immediate medical advice.

**5 Fire fighting measures****Suitable extinguishing agents**

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

**For safety reasons unsuitable extinguishing agents** Water

**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Hydrogen sulfide

Sulfur oxides (SO<sub>x</sub>)

Metal oxide fume

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Person-related safety precautions:**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:**

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Keep away from ignition sources.

**Additional information:**

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****Information 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:**

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

**Storage**

**Requirements to be met by storerooms and receptacles:** No special requirements.

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**Information about storage in one common storage facility:**

Do not store together with acids.

Store away from water/moisture.

Store away from oxidizing agents.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store under dry inert gas.

**8 Exposure controls and 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.

**Components with limit values that require monitoring at the workplace:** Not required.**Additional information:** No data**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.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:**

Safety glasses

Full face protection

**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

<b>Form:</b>	Powder
<b>Color:</b>	White Yellow
<b>Odor:</b>	Like rotten eggs

**Change in condition**

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined

**Flash point:** Not applicable**Flammability (solid, gaseous)** Contact with water liberates extremely flammable gases.**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Explosion limits:**

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined

**Vapor pressure:** Not determined**Density:** Not determined**Solubility in / Miscibility with****Water:** Contact with water releases flammable gases**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Materials to be avoided:**

Acids

Water/moisture

Oxidizing agents

**Dangerous reactions**

Contact with water releases flammable gases

Contact with water releases toxic gases

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Contact with acids releases toxic gases

**Dangerous products of decomposition:**

Hydrogen sulfide

Sulfur oxides (SOx)

Metal oxide fume

### 11 Toxicological information

**Acute toxicity:****Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Lanthanons can cause delayed blood clotting leading to hemorrhages. Exposure may also lead to sensitivity to heat, itching, increased awareness of odor and taste, and liver damage.

**Subacute to chronic toxicity:**

Sulfides show variable toxicity. The alkaline sulfides are similar in action to alkalies. They cause irritation of the skin and are corrosive by ingestion. The heavy metal sulfides are generally insoluble and show little toxic action except through the liberation of hydrogen sulfide. Hydrogen sulfide, if generated, is toxic, a severe irritant and flammable.

Effects include conjunctivitis, headache, nausea, dizziness, coughing, pulmonary edema and possibly death.

**Additional toxicological information:**

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 Ecological information:

**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

### 13 Disposal considerations

**Product:****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

**DOT regulations:****Hazard class:**

4.3

**Identification number:**

UN3134

**Packing group:**

III

**Proper shipping name (technical name):** WATER-REACTIVE SOLID, TOXIC, N.O.S. (Terbium sulfide)**Label**

4.3+6.1

**Land transport ADR/RID (cross-border)****ADR/RID class:**

4.3 (WT2) Substances which, in contact with water, emit flammable gases

**Danger code (Kemler):**

462

**UN-Number:**

3134

**Packaging group:**

III

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**Description of goods:** 3134 WATER-REACTIVE SOLID, TOXIC, N.O.S. (Terbium sulfide)

**Maritime transport IMDG:**

**IMDG Class:** 4.3  
**UN Number:** 3134  
**Label** 4.3+6.1  
**Packaging group:** III  
**Proper shipping name:** WATER-REACTIVE SOLID, TOXIC, N.O.S. (Terbium sulfide)

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

**ICAO/IATA Class:** 4.3  
**UN/ID Number:** 3134  
**Label** 4.3+6.1  
**Packaging group:** III  
**Proper shipping name:** WATER-REACTIVE SOLID, TOXIC, N.O.S. (Terbium sulfide)

**UN "Model Regulation":** UN3134, WATER-REACTIVE SOLID, TOXIC, N.O.S., 4.3 (6.1), III

## 15 Regulations

**Product related hazard informations:****Hazard symbols:**

Xi Irritant  
 F Highly flammable

**Risk phrases:**

15/29 Contact with water liberates toxic, extremely flammable gas.  
 31 Contact with acids liberates toxic gas.  
 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety phrases:**

7/8 Keep container tightly closed and dry.  
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 33 Take precautionary measures against static discharges.  
 37 Wear suitable gloves.  
 43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.  
 60 This material and its container must be disposed of as hazardous waste.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

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

## 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 MSDS:** Health, Safety and Environmental Department.

**Contact:** Zachariah Holt

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

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ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)

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