

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 07/25/2007

Reviewed on 06/14/2007

**1 Identification of substance:****Product details:****Product name:** Thorium nitrate**Stock number:** 14625**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

**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#)**

Thorium nitrate, hydrate (CAS# 13470-07-0), 100%

**3 Hazards identification****Hazard description:**

Xn Harmful

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

R 20/22 Harmful by inhalation and if swallowed.

R 33 Danger of cumulative effects.

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	0
REACTIVITY	1

Health (acute effects) = 1

Flammability = 0

Reactivity = 1

**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.

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**Product name:** Thorium nitrate**After swallowing** Seek immediate medical advice.

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

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray.

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

In case of fire, the following can be released:

Nitrogen oxides (NO<sub>x</sub>)

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Measures for environmental protection:**

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

**Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**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:**

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:**

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

**Storage****Requirements to be met by storerooms and receptacles:**

No special requirements.

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

Store away from reducing agents.

Store away from flammable substances.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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**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.

**Breathing equipment:**

Use suitable respirator when high concentrations are present.

**Protection of hands:** Impervious gloves

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

**9 Physical and chemical properties:****General Information**

<b>Form:</b>	Powder
<b>Color:</b>	White
<b>Odor:</b>	Odorless

**Change in condition**

<b>Melting point/Melting range:</b>	500 (dec)°C (932 (dec)°F)
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined

<b>Flash point:</b>	Not applicable
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<b>Ignition temperature:</b>	Not determined
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<b>Decomposition temperature:</b>	Not determined
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<b>Danger of explosion:</b>	Product does not present an explosion hazard.
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**Explosion limits:**

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

<b>Vapor pressure:</b>	Not determined
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<b>Density at 20°C (68°F):</b>	2.78 g/cm <sup>3</sup>
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<b>Solubility in / Miscibility with Water:</b>	Soluble
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**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:** Reducing agents, easily oxidized materials

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**Dangerous reactions** Reacts with reducing agents**Dangerous products of decomposition:**

Nitrogen oxides

Metal oxide fume

**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	1760 mg/kg (mus)
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**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:**

Exposure to thorium may cause gastrointestinal distress, skin, eye, or lung irritation. Radiation damage and cancers of bone, blood, liver or kidney may result.

Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse.

**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.

Not a solid waste by RCRA exclusion, see 40CFR261.4.(a).(4).

See 10CFR part 40 for disposal.

**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport information****DOT regulations:****Hazard class:**

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**Product name:** Thorium nitrate

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<b>Identification number:</b>	UN2976
<b>Proper shipping name (technical name):</b>	THORIUM NITRATE, SOLID
<b>Label</b>	7+5.1

**Land transport ADR/RID (cross-border)****UN-Number:****Packaging group:** -**15 Regulations****Product related hazard informations:****Hazard symbols:**

Xn Harmful

**Risk phrases:**

20/22 Harmful by inhalation and if swallowed.

33 Danger of cumulative effects.

**Safety phrases:**

4 Keep away from living quarters.

9 Keep container in a well-ventilated place.

20 When using do not eat or drink.

28 After contact with skin, wash immediately with plenty of water

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

**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.

The radioactive content of thorium and thorium containing materials is defined as it's specific activity. The specific activity of naturally occurring thorium is 0.00000022 curie/gram (8140 Bq/gram) of contained thorium.

**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:** Paul V. Connolly