

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 04/01/2008

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Erbium (III) oxide**Stock number:** 11309**CAS Number:**

12061-16-4

EINECS Number:

235-045-7

Relevant identified uses of the substance or mixture and uses advised against.**Sector of Use** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency telephone number:**

Call Carechem 24 at +44 (0) 1865 407333

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification**Classification of the substance or mixture**

GHS07

H319 Causes serious eye irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xi; Irritant

R36: Irritating to eyes.

Label elements**Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals

Code letter and hazard designation of product:

Xi Irritant

Risk phrases:

36 Irritating to eyes.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Hazard description:**WHMIS classification****Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	0
REACTIVITY	0

Health (acute effects) = 1

Flammability = 0

Reactivity = 0

Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

USA

(Contd. on page 2)

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 04/01/2008

Product name: Erbium (III) oxide

(Contd. of page 1)

3 Composition/information on ingredients**Chemical characterization:** Substances**(CAS#) Description:**

Erbium (III) oxide (CAS# 12061-16-4): 100%

Identification number(s):**EINECS Number:** 235-045-7**4 First aid measures****Description of 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 Firefighting measures****Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Advice for firefighters**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

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

Methods and material for containment and cleaning up: Ensure adequate ventilation.**Reference to other sections**

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****Precautions 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: The product is not flammable**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Store away from water/moisture.**Further information about storage conditions:**

This product is hygroscopic.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

8 Exposure controls/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.

Control parameters**Components with limit values that require monitoring at the workplace:** Not required.

(Contd. on page 3)

- USA -

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 04/01/2008

Product name: Erbium (III) oxide

(Contd. of page 2)

Additional information: No data**Exposure controls****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:**

Check protective gloves prior to each use for their proper condition.

Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Powder
Color:	Pink
Odor:	Odorless
Odour threshold:	Not determined.

pH-value:	Not applicable.
------------------	-----------------

Change in condition

Melting point/Melting range:	2400°C (4352 °F)
-------------------------------------	------------------

Boiling point/Boiling range:	Not determined
-------------------------------------	----------------

Sublimation temperature / start:	Not determined
---	----------------

Flash point:	Not applicable
---------------------	----------------

Flammability (solid, gaseous)	Not determined.
--------------------------------------	-----------------

Ignition temperature:	Not determined
------------------------------	----------------

Decomposition temperature:	Not determined
-----------------------------------	----------------

Auto igniting:	Not determined.
-----------------------	-----------------

Danger of explosion:	Product does not present an explosion hazard.
-----------------------------	---

Explosion limits:

Lower:	Not determined
---------------	----------------

Upper:	Not determined
---------------	----------------

Vapor pressure:	Not applicable.
------------------------	-----------------

Density at 20°C (68 °F):	8.64 g/cm ³ (72.101 lbs/gal)
---------------------------------	---

Relative density	Not determined.
-------------------------	-----------------

Vapour density	Not applicable.
-----------------------	-----------------

Evaporation rate	Not applicable.
-------------------------	-----------------

Solubility in / Miscibility with

Water:	Insoluble
---------------	-----------

Segregation coefficient (n-octanol/water):	Not determined.
---	-----------------

Viscosity:

dynamic:	Not applicable.
-----------------	-----------------

kinematic:	Not applicable.
-------------------	-----------------

Other information	No further relevant information available.
--------------------------	--

10 Stability and reactivity**Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

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

Possibility of hazardous reactions No dangerous reactions known

(Contd. on page 4)

USA

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 04/01/2008

Product name: Erbium (III) oxide

(Contd. of page 3)

Incompatible materials: Water/moisture**Hazardous decomposition products:** No dangerous decomposition products known**11 Toxicological information****Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	>5000 mg/kg (rat)
Irritation of eyes	mild	100 mg (rabbit)

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.

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**Toxicity****Acquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Additional ecological information:****General notes:**

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

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.**13 Disposal considerations****Waste treatment methods****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**

Not a hazardous material for transportation.

DOT regulations:**Hazard class:** None**Land transport ADR/RID (cross-border)****ADR/RID class:** None**Maritime transport IMDG:****IMDG Class:** None**Marine pollutant:** No**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** None**Special precautions for user** Not applicable.**Transport/Additional information:** Not dangerous according to the above specifications.**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

USA

(Contd. on page 5)

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 04/01/2008

Product name: Erbium (III) oxide

(Contd. of page 4)

15 Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****Product related hazard informations:**

Observe the general safety regulations when handling chemicals

Hazard symbols:

Xi Irritant

Risk phrases:

36 Irritating to eyes.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

National regulations

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

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**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 C. Holt

Global EHS Manager

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)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

USA