

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/01/2009

Reviewed on 01/24/2007

1 Identification of substance:**Product details:****Product name:** Lead (IV) oxide**Stock number:** 10729**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#)**

Lead (IV) oxide (CAS# 1309-60-0): 100%

Identification number(s):**EINECS Number:** 215-174-5**Index number:** 082-001-00-6**3 Hazards identification****Hazard description:**

T Toxic
 O Oxidizing
 N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 61 May cause harm to the unborn child
 R 62 Possible risk of impaired fertility
 R 8 Contact with combustible material may cause fire.
 R 20/22 Also harmful by inhalation and if swallowed.
 R 33 Danger of cumulative effects.
 R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

HEALTH	2
FIRE	0
REACTIVITY	2

Health (acute effects) = 2
 Flammability = 0
 Reactivity = 2

GHS label elements**Danger**

2.14/2 - May intensify fire; oxidizer.

**Danger**

3.1/3 - Toxic if inhaled.
 3.1/4 - Harmful if swallowed.

**Danger**

3.7/1A - May damage fertility or the unborn child.

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**Warning**

4.1/1 - Very toxic to aquatic life with long lasting effects.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

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

Use personal protective equipment as required.

Response:

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

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

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER or doctor/physician.

Specific treatment (see label).

Rinse mouth.

In case of fire: Use for extinction: CO₂, powder or water spray.

Collect spillage.

Storage:

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**

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

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

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

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.

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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.
 Open and handle container with care.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.
 This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.
 The product is not flammable

Storage

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

Information about storage in one common storage facility:

Store away from flammable substances.
 Store away from reducing agents.

Further information about storage conditions:

Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.

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:

Lead, elemental, and inorganic compounds (as Pb)	mg (Pb)/m ³
ACGIH TLV	0.05; Confirmed animal carcinogen
Austria MAK	0.1
Belgium TWA	0.15
Denmark TWA	0.1
Germany MAK	0.1
Japan OEL	0.1
Korea TLV	0.05; Confirmed animal carcinogen
Netherlands TWA	0.15
Norway TWA	0.05
Poland TWA	0.05
Sweden TWA	0.05 (resp. dust)
	0.1 (total dust)
Switzerland MAK-W	0.1
United Kingdom TWA	0.1
USA PEL	0.05

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.
 Store protective clothing separately.

Breathing equipment:

Use suitable respirator when high concentrations are present.
 Refer to 29CFR1910.1025 for regulations on respiratory protection required during exposure to lead and lead compounds.

Protection of hands:

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

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.

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

Form:	Powder
Color:	Brown Black
Odor:	Odorless

Change in condition

Melting point/Melting range:	290°C (554°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
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Flammability (solid, gaseous)	Contact with combustible material may cause fire.
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure:	Not determined
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Density at 20°C (68°F):	9.375 g/cm ³
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Solubility in / Miscibility with

Water:	Insoluble
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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**Dangerous reactions**

Reacts with reducing agents

Reacts with flammable substances

Dangerous products of decomposition: No dangerous decomposition products known**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:**

Lead and lead compounds may cause abdominal pain, diarrhea, loss of appetite, metallic taste, nausea, vomiting, lassitude, insomnia, muscle weakness, joint and muscle pain, irritability, headache and dizziness. Red blood cells may be damaged resulting in anemia. Gastritis and injury to the kidneys, liver, male gonads, and central nervous system may also occur.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

May cause harm to the unborn child.

Possible risk of impaired fertility.

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

IARC-2A: Probably carcinogenic to humans: limited human evidence; sufficient evidence in experimental animals

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

12 Ecological information:**Ecotoxicological effects:****Remark:** Very toxic for fish

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General notes:

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

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

Very toxic for aquatic organisms

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: 5.1
Identification number: UN1872
Packing group: III
Proper shipping name (technical name): LEAD DIOXIDE
Label: 5.1

Land transport ADR/RID (cross-border)

ADR/RID class: 5.1 (OT2) Oxidizing substances
Danger code (Kemler): 56
UN-Number: 1872
Packaging group: III
Description of goods: 1872 LEAD DIOXIDE

Maritime transport IMDG:

IMDG Class: 5.1
UN Number: 1872
Label: 5.1
Packaging group: III
Proper shipping name: LEAD DIOXIDE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 5.1
UN/ID Number: 1872
Label: 5.1
Packaging group: III
Proper shipping name: LEAD DIOXIDE

UN "Model Regulation": UN1872, LEAD DIOXIDE, 5.1 (6.1), III

Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID

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

T Toxic
 O Oxidizing
 N Dangerous for the environment

Risk phrases:

61 May cause harm to the unborn child
 62 Possible risk of impaired fertility
 8 Contact with combustible material may cause fire.
 20/22 Also harmful by inhalation and if swallowed.
 33 Danger of cumulative effects.
 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

53 Avoid exposure - obtain special instructions before use.
 45 In case of accident or if you feel unwell, seek medical advice immediately.
 60 This material and its container must be disposed of as hazardous waste.
 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Special labeling of certain preparations:

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

National regulations

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

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

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.
 This product contains lead and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Refer to 29CFR1910.1025 for regulations concerning lead and lead compounds.

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)

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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