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 foil

Stock number: 12448

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 (CAS# 7439-92-1): 100%
Identification number(s):
EINECS Number: 231-100-4

3 Hazards identification

Hazard description:

T Toxic
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 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	1
FIRE	0
REACTIVITY	0

Health (acute effects) = 1
Flammability = 0
Reactivity = 0

GHS label elements

Danger

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

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.
Avoid release to the environment.
Use personal protective equipment as required.
Response:
IF exposed or concerned: Get medical advice/attention.
Collect spillage.
Storage:
Store locked up.

(Contd. on page 2)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/01/2009 Reviewed on 01/24/2007

Product name: Lead foil

(Contd. of page 1)

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 Special powder for metal fires. Do not 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:
Lead oxide fume
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.
Open and handle container with care.
Information about protection against explosions and fires: 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:
Do not store together with oxidizing and acidic materials.
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)/m3
ACGIH TLV	0.05; Confirmed animal carcinogen
Austria MAK	0.1
Belgium TWA	0.15

(Contd. on page 3)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/01/2009 Reviewed on 01/24/2007

Product name: Lead foil

(Contd. of page 2)

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.

9 Physical and chemical properties:

General Information	
Form:	Foil
Color:	Grey
Odor:	Odorless
Change in condition	
Melting point/Melting range:	327.43°C (621°F)
Boiling point/Boiling range:	1740°C (3164°F)
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	11.34 g/cm³
Solubility in / Miscibility with	
Water:	Insoluble

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
Oxidizing agents
Dangerous reactions No dangerous reactions known
Dangerous products of decomposition:
Toxic metal oxide fume

(Contd. on page 4)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/01/2009 Reviewed on 01/24/2007

Product name: Lead foil

(Contd. of page 3)

Lead oxide fume

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LDLo	155 mg/kg (human)
		160 mg/kg (pigeon)
Inhalative	LCLo	271 mg/m3 (human)

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Other information (about experimental toxicology):
Reproductive effects have been observed on tests with laboratory animals.
Mutagenic effects have been observed with humans.
Mutagenic effects have been observed on tests with laboratory animals.
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.
Subacute to chronic toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
Peripheral Nerve and Sensation - flaccid paralysis without anesthesia.
Behavioral - hallucinations, distorted perceptions.
Behavioral - muscle weakness.
Behavioral - alteration of classical conditioning.
Nutritional and Gross Metabolic - changes in metals, not otherwise specified.
Blood - pigmented or nucleated red blood cells.
Blood - other changes.
Blood - changes in other cell count (unspecified)
Immunological Including Allergic - uncharacterized.
Endocrine - androgenic.
Endocrine - estrogenic.
Endocrine - changes in endocrine weight (unspecified)
Endocrine - other changes.
Endocrine - effect on menstrual cycle.
Related to Chronic Data - changes in ovarian weight.
Related to Chronic Data - death.
Gastrointestinal - gastritis.
Liver - other changes.
Lungs, Thorax, or Respiration - respiratory depression
Brain and Coverings - other degenerative changes.
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other enzymes.
Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).
Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).
Reproductive - Effects on Embryo or Fetus - fetal death.
Reproductive - Effects on Newborn - behavioral.
Reproductive - Effects on Newborn - biochemical and metabolic.
Reproductive - Specific Developmental Abnormalities - blood and lymphatic systems (including spleen and marrow).
Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain).
Reproductive - Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated)
Reproductive - Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea)
Reproductive - Fertility - other measures of fertility.
Reproductive - Effects on Embryo or Fetus - cytological changes (including somatic cell genetic material)
Reproductive - Paternal Effects - other effects on male.
Reproductive - Maternal Effects - ovaries, fallopian tubes.
Reproductive - Paternal Effects - testes, epididymis, sperm duct.
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.

(Contd. on page 5)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 05/01/2009 Reviewed on 01/24/2007

Product name: Lead foil

(Contd. of page 4)

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of 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 epidemologic 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.
NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

12 Ecological information:

Ecotoxical effects:
Remark: Very toxic for fish
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

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

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

Product related hazard informations:

Hazard symbols:
T Toxic
N Dangerous for the environment

Risk phrases:
61 May cause harm to the unborn child
62 Possible risk of impaired fertility
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

(Contd. on page 6)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/01/2009 Reviewed on 01/24/2007

Product name: Lead foil

(Contd. of page 5)

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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent