

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/11/2009

Reviewed on 05/11/2009

1 Identification of substance:**Product details:****Product name:** Bis(dicarbonylcyclopentadienyl)iron**Stock number:** 31114**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#)**

Bis(dicarbonylcyclopentadienyliron) (CAS# 12154-95-9); 100%

Identification number(s):**EINECS Number:** 235-276-3**3 Hazards identification****Hazard description:**

T Toxic

Information pertaining to particular dangers for man and environment

R 10 Flammable.

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

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

HEALTH	3
FIRE	2
REACTIVITY	2

Health (acute effects) = 3

Flammability = 2

Reactivity = 2

GHS label elements**Danger**

2.7/1 - Flammable solid.

**Danger**

3.1/2 - Fatal if swallowed.

3.1/2 - Fatal in contact with skin.

3.1/2 - Fatal if inhaled.

Prevention:

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

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/ equipment.

Do not breathe dust/fume/gas/mist/vapours/spray.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

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

Wear respiratory protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Gently wash with plenty of soap and water.

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*IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.**Immediately call a POISON CENTER or doctor/physician.**Specific treatment is urgent (see label).**Specific treatment (see label).**Specific measures (see label).**Rinse mouth.**Remove/Take off immediately all contaminated clothing.**Wash contaminated clothing before reuse.**In case of fire: Use for extinction: CO₂, powder or water spray.***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****General information***Immediately remove any clothing soiled by the product.**Remove breathing apparatus only after contaminated clothing has been completely removed.**In case of irregular breathing or respiratory arrest provide artificial respiration.***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***Do not induce vomiting; immediately call for medical help.**Seek immediate medical advice.***5 Fire fighting measures****Suitable extinguishing agents***Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.***Special hazards caused by the material, its products of combustion or resulting gases:***In case of fire, the following can be released:**Carbon monoxide and carbon dioxide***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**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:***Dispose contaminated material as waste according to item 13.**Ensure adequate ventilation.**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:***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.*

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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.
Information about storage in one common storage facility: Store away from oxidizing agents.
Further information about storage conditions:
 Refrigerate
 Keep container tightly sealed.

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.
 Store protective clothing separately.
 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

Body protection: Protective work clothing.

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

Form:	Crystalline
Color:	Red
Odor:	Not determined

Change in condition

Melting point/Melting range:	194°C (381°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
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Flammability (solid, gaseous)	Flammable.
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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:	Not determined
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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:

Oxidizing agents

Heat

Dangerous reactions No dangerous reactions known

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Dangerous products of decomposition: Carbon monoxide and carbon dioxide**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:**

Iron compounds may cause vomiting, diarrhea, pink urine, black stool, and liver damage. May cause damage to the kidneys. Irritating to the respiratory tract, they may cause pulmonary fibrosis if dusts are inhaled.

Carbonyl compounds are toxic due to decomposition yielding carbon monoxide. Symptoms include asphyxia, headache, mental confusion, dizziness, impairment of vision and hearing, and fainting. High exposures can result in unconsciousness and death due to the inability of hemoglobin to carry oxygen to the tissues.

Subacute to chronic toxicity:

Dicyclopentadiene is irritating to the eyes, skin and mucous membranes. Vapors may cause headaches, dizziness, nausea and narcosis. Pulmonary edema or brochiopneumonia may be caused by liquid aspirated into the lungs following ingestion. Chronic exposure may cause injury to the lungs, liver and kidneys.

Additional toxicological information:

Danger through skin absorption.

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:**

6.1

Identification number:

UN3466

Packing group:

II

Proper shipping name (technical name): METAL CARBONYLS, SOLIID, N.O.S.

(Bis(dicarbonylcyclopentadienyl)iron)

Label

6.1

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

6.1 (T3) Toxic substances

Danger code (Kemler):

60

UN-Number:

3466

Packaging group:

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Description of goods: 3466 METAL CARBONYLS, SOLID, N.O.S.
(Bis(dicarbonylcyclopentadienyl)iron)

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 3466
Label 6.1
Packaging group: II
Proper shipping name: METAL CARBONYLS, SOLID, N.O.S.
 (Bis(dicarbonylcyclopentadienyl)iron)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 3466
Label 6.1
Packaging group: II
Proper shipping name: METAL CARBONYLS, SOLID, N.O.S.
 (Bis(dicarbonylcyclopentadienyl)iron)

UN "Model Regulation": UN3466, METAL CARBONYLS, SOLID, N.O.S., 6.1, II

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

T Toxic

Risk phrases:

10 Flammable.

23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

Safety phrases:

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

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

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)

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

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Product name: Bis(dicarbonylcyclopentadienyl)iron

CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)

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