

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 10/01/2010

Reviewed on 09/30/2010

1 Identification of substance:

Product details:

Product name: Cobalt(II) molybdenum oxide

Stock number: 41376

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 Hazards identification

Hazard description:



Xn Harmful
N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 22 Harmful if swallowed.
R 36/37 Irritating to eyes and respiratory system.
R 40 Limited evidence of a carcinogenic effect.
R 43 May cause sensitization by skin contact.
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	1

Health (acute effects) = 2
Flammability = 0
Reactivity = 1

GHS label elements



Danger

3.1/3 - Toxic if swallowed.
3.3/2A - Causes serious eye irritation.
3.4/1 - May cause an allergic skin reaction.
3.8/3 - May cause respiratory irritation.



Warning

3.6/2 - Suspected of causing cancer.



Warning

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

Response:

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

IF ON SKIN: Wash with plenty of soap and water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment (see on this label).

Storage:

Store locked up.

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Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Cobalt(II) molybdenum oxide (CAS# 13762-14-6)

Identification number(s):

EINECS Number: 237-358-4

4 First aid measures**After inhalation**

Supply fresh air and to be sure call for a doctor.

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:

In case of fire, the following can be released:

Metal 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.

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: 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 oxidizing agents.

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:

Cobalt, elemental & inorganic compounds, as Co
mg/m3

ACGIH TLV	0.02; Confirmed animal carcinogen
Austria	Carcinogen
Belgium TWA	0.05
Denmark TWA	0.05
Finland TWA	0.05 (skin)
Germany	Carcinogen
Hungary TWA	0.1; 0.2-STEL
Japan OEL	0.05; 2B Carcinogen
Korea TLV	0.02; Confirmed animal carcinogen
Ireland TWA	0.1
Netherlands MAC-TGG	0.05
Norway TWA	0.05
Poland TWA	0.05; 0.2-STEL
Russia	0.5-STEL
Sweden NGV	0.05
Switzerland MAK-W	0.1; Carcinogen
United Kingdom TWA	0.1
USA PEL	0.1 (dust and fume)

Molybdenum and compounds (as Mo)

	mg/m3
ACGIH TLV	10 (Mo)
Austria MAK	15 (Mo)
Denmark TWA	10 (Mo)
Finland TWA	5 (Mo)
Germany MAK	15 (Mo)
Korea TLV	10 (Mo)
Poland TWA	4 (Mo); 10 (Mo) -STEL
Sweden NGV	10 (Mo) (total dust); 5 (Mo) (resp. dust)
Switzerland MAK-W	10 (Mo)
United Kingdom TWA	10 (Mo); 20 (Mo) -STEL
OSHA PEL	15 (Mo) (total dust)

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

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:	Powder
Color:	Green
Odor:	Not determined

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Ignition temperature:	Not determined
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Product name: Cobalt(II) molybdenum oxide

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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:	Not determined

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

Dangerous reactions: No dangerous reactions known

Dangerous products of decomposition: Metal oxide fume

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: Sensitization possible through skin contact.

Subacute to chronic toxicity:

Cobalt is an experimental neoplastigen and tumorigen. It is an experimental carcinogen of the connective tissue and lungs. Cobalt metal and inorganic compounds are classified as an animal carcinogen by the ACGIH. Ingestion may cause burning in the mouth, esophagus, and stomach. Inhalation of dusts and fumes may cause irritation of the respiratory tract and labored breathing and coughing. Sensitization, nausea, flushing of the face and ringing in the ears is also possible. Chronic ingestion may result in pericardial effusion, polycardial effusion, polycythemia, cardiac failure, vomiting, convulsions and thyroid enlargement. Acute molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma and death from cardiac failure.

Chronic molybdenum poisoning in laboratory animals has caused loss of weight, anorexia, anemia, deficient lactation, male sterility, osteoporosis and bone joint abnormalities.

Additional toxicological information:

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

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

12 Ecological information:

Ecotoxicical effects:
Remark: Very toxic for aquatic organisms

Additional ecological information:
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.

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14 Transport information

DOT regulations:



Hazard class: 9
Identification number: UN3077
Packing group: III
Proper shipping name (technical name): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) molybdenum oxide)
Label 9

Land transport ADR/RID (cross-border)



ADR/RID class: 9 (M7) Miscellaneous dangerous substances and articles
Danger code (Kemler): 90
UN-Number: 3077
Packaging group: III
Special marking: Symbol (fish and tree)
Description of goods: 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) molybdenum oxide)

Maritime transport IMDG:



IMDG Class: 9
UN Number: 3077
Label 9
Packaging group: III
Marine pollutant: No
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) molybdenum oxide)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 9
UN/ID Number: 3077
Label 9
Special marking: Symbol (fish and tree)
Packaging group: III
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) molybdenum oxide)

UN "Model Regulation": UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

15 Regulations

Product related hazard informations:

Hazard symbols:

Xn Harmful

N Dangerous for the environment

Risk phrases:

22 Harmful if swallowed.

36/37 Irritating to eyes and respiratory system.

40 Limited evidence of a carcinogenic effect.

43 May cause sensitization by skin contact.

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50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

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

36/37 Wear suitable protective clothing and gloves.

57 Use appropriate container to avoid environmental contamination.

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 Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.

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

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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