Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 02/25/2010 Reviewed on 02/23/2010

1 Identification of substance:

Product details:

Product name: Copper(I) thiocyanate

Stock number: 40220

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

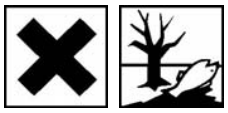
Information Department: Health, Safety and Environmental Department
Emergency information:
During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:
Description: (CAS#)
Copper(I) thiocyanate (CAS# 1111-67-7)
Identification number(s):
EINECS Number: 214-183-1
Index number: 615-004-00-3

3 Hazards identification

Hazard description:



Xn Harmful
N Dangerous for the environment

Information pertaining to particular dangers for man and environment
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 32 Contact with acids liberates very toxic gas.
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	1

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

GHS label elements

Warning

3.1/4 - Harmful if swallowed.
3.1/4 - Harmful in contact with skin.
3.1/4 - Harmful if inhaled.

4.1/3 - Harmful to aquatic life with long lasting effects.
Prevention:
Avoid release to the environment.
Wear protective gloves/clothing.
Response:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Get immediate medical advice/attention.
Storage:
Store away from foodstuffs.
Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 02/25/2010 Reviewed on 02/23/2010

Product name: Copper(I) thiocyanate

(Contd. of page 1)

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:
In case of fire, the following can be released:
Sulfur oxides (SOx)
Nitrogen oxides (NOx)
Possibly Hydrogen cyanide (HCN)
Carbon monoxide and carbon dioxide
Metal oxide fume
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:
Mount respiratory protective device.
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.
Information about protection against explosions and fires:
No special measures required.
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.
Do not store together with acids.
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:

Copper fume, dusts and mists (as Cu)

	mg/m3
ACGIH TLV	1 (dust, mist); 0.2 (fume)

(Contd. on page 3)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 02/25/2010 Reviewed on 02/23/2010

Product name: Copper(I) thiocyanate

(Contd. of page 2)

Austria MAK	1; 0.1 (fume)
Belgium TWA	0.2 (fume); 1 (dust)
Denmark TWA	0.1
Finland TWA	0.2 (fume); 1 (dust)
France VME	0.2 (fume); 1 (dust); 1; 2-STEL (dust)
Germany MAK	0.1 (fume); 1 (dust)
Hungary TWA	0.2; 0.4-STEL (dust)
Korea TLV	1 (dust, mist); 0.2 (fume)
Netherlands MAC-TGG	1 (dust)
Norway TWA	0.05; 0.1 (fume)
Poland TWA	0.1 (fume); 0.3-STEL (fume)
Russia	1-STEL (dust)
Sweden NGV	0.2 (resp. dust); 1 (total dust)
Switzerland MAK-W	0.1; 0.2-KZG-W (fume)
	1; 1-KZG-W
United Kingdom TWA	0.2 (fume)
	1; 3-STEL (dusts and mist)
USA PEL TWA	0.1 (fume); 1 (dusts and mists)

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.
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:	Powder
Color:	Off-white
Odor:	Odorless
Change in condition	
Melting point/Melting range:	1084°C (1983°F) (dec)
Boiling point/Boiling range:	Not determined
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):	2.84 g/cm³
Solubility in / Miscibility with	
Water:	Insoluble
Alcohols:	Insoluble
Organic solvents:	Soluble in ether.

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
Contact with acids liberates very toxic gas.
May react with strong acids to produce very toxic hydrogen sulfide gas.

(Contd. on page 4)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 02/25/2010 Reviewed on 02/23/2010

Product name: Copper(I) thiocyanate

(Contd. of page 3)

Dangerous products of decomposition:
Hydrogen sulfide
Sulfur oxides (SOx)
Nitrogen oxides
Carbon monoxide and carbon dioxide
Metal oxide fume
Possibly Hydrogen cyanide (HCN)

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LD50	>5000 mg/kg (rat)

Primary irritant effect:
on the skin: May cause irritation
on the eye: May cause irritation
Sensitization: No sensitizing effects known.
Subacute to chronic toxicity:
Copper compounds may be irritating to the skin, eyes and respiratory tract. They may cause metal fume fever, hemolysis of the red blood cells and injury to the liver, lungs, kidneys and pancreas. Ingestion may also cause vomiting, gastric pain, dizziness, anemia, cramps, convulsions, shock, coma and death. Copper solutions may cause sensitization reactions.
Subacute to chronic toxicity:
Thiocyanates have variable toxicity. They are not normally dissociated into cyanide. Prolonged absorption may produce skin eruptions, running nose, and occasionally dizziness, cramps, nausea, vomiting and mild or severe disturbances of the nervous system. Thiocyanates emit cyanide on contact with acids.
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:

Ecotoxical effects:
Remark: Very toxic for fish
General notes:
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
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:	9
Identification number:	UN3077
Packing group:	III
Proper shipping name (technical name):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper(I) thiocyanate)
Label	9

(Contd. on page 5)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 02/25/2010 Reviewed on 02/23/2010

Product name: Copper(I) thiocyanate

(Contd. of page 4)

Remarks:	Special marking with the symbol (fish and tree).

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. (Copper(I) thiocyanate)

Maritime transport IMDG:

IMDG Class:	9
UN Number:	3077
Label	9
Packaging group:	III
EMS Number:	F-A,S-F
Marine pollutant:	Yes (P) Symbol (fish and tree)
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper(I) thiocyanate)

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. (Copper(I) thiocyanate)

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:
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
32 Contact with acids liberates very toxic gas.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:
13 Keep away from food, drink and animal feedingstuffs.
36/37 Wear suitable protective clothing and gloves.
46 If swallowed, seek medical advice immediately and show this container or label.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets

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).

(Contd. on page 6)

Material Safety Data Sheet
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Printing date 02/25/2010 Reviewed on 02/23/2010

Product name: Copper(I) thiocyanate

(Contd. of page 5)

Information about limitation of use:
For use only by technically qualified individuals.
This product contains copper 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)
P: Marine Pollutant
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