

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 01/27/2009

1 Identification of substance:**Product details:****Product name:** 2,3-Dichloro-5,6-dicyanobenzoquinone**Stock number:**

A11879

L00189

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#)**

2,3-Dichloro-5,6-dicyanobenzoquinone

(CAS# 84-58-2), 100%

Identification number(s):**EINECS Number:** 201-542-2**3 Hazards identification****Hazard description:**

T Toxic

Information pertaining to particular dangers for man and environment

R 25 Toxic if swallowed.

R 29 Contact with water liberates toxic gas.

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

HEALTH	2
FIRE	1
REACTIVITY	1

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

GHS label elements**Danger**

3.1/3 - Toxic if swallowed.

Prevention:

Wash thoroughly after handling.

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

Response:

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

Specific treatment (see label).

Rinse mouth.

Storage:

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.

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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 CO2, sand, extinguishing powder. 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:

Hydrogen cyanide (HCN)

Hydrogen chloride (HCl)

Nitrogen oxides (NOx)

Carbon monoxide and carbon dioxide

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.

Do not flush with water or aqueous cleansing agents

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: Keep ignition sources away.

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 acids.

Do not store together with alkalies (caustic solutions).

Store away from oxidizing agents.

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: 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.

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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:	Dark yellow
Odor:	Not determined

Change in condition

Melting point/Melting range:	211-213°C (412-415°F)
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:** Not determined**Solubility in / Miscibility with****Water:** Reacts**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:

Water/moisture

Acids

Bases

Oxidizing agents

Reducing agents

Dangerous reactions

Contact with water releases toxic gases

Contact with acids releases toxic gases

Dangerous products of decomposition:

Hydrogen cyanide (prussic acid)

Hydrogen chloride (HCl)

Nitrogen oxides

Carbon monoxide and carbon dioxide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral LD50 86 mg/kg (rat)

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):**

Mutagenic effects have been observed on tests with bacteria.

Subacute to chronic toxicity:

Many nitriles resemble cyanides in toxicity. Exposure to nitriles may cause increased salivation, flushing of the face, eye and respiratory tract irritation, shallow respiration, nausea, vomiting, weakness, headache and diarrhea. Jaundice, anemia, and leucocytosis has been reported in some cases. Some are suspected carcinogens, teratogens or mutagens.

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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:

UN3439

Packing group:

III

Proper shipping name (technical name): NITRILES, TOXIC, SOLID, N.O.S. (2,3-Dichloro-5,6-dicyanobenzoquinone)**Label**

6.1

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

6.1 (T2) Toxic substances

Danger code (Kemler):

60

UN-Number:

3439

Packaging group:

III

Description of goods:

3439 NITRILES, TOXIC, SOLID, N.O.S. (2,3-Dichloro-5,6-dicyanobenzoquinone)

Maritime transport IMDG:**IMDG Class:**

6.1

UN Number:

3439

Label

6.1

Packaging group:

III

Proper shipping name:

NITRILES, TOXIC, SOLID, N.O.S. (2,3-Dichloro-5,6-dicyanobenzoquinone)

Air transport ICAO-TI and IATA-DGR:**ICAO/IATA Class:**

6.1

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Product name: 2,3-Dichloro-5,6-dicyanobenzoquinone

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UN/ID Number:	3439
Label	6.1
Packaging group:	III
Proper shipping name:	NITRILES, TOXIC, SOLID, N.O.S. (2,3-Dichloro-5,6-dicyanobenzoquinone)

UN "Model Regulation": UN3439, NITRILES, TOXIC, SOLID, N.O.S., 6.1, III

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

T Toxic

Risk phrases:

25 Toxic if swallowed.

29 Contact with water liberates toxic gas.

Safety phrases:

7/8 Keep container tightly closed and dry.

20 When using do not eat or drink.

36 Wear suitable protective clothing.

45 In case of accident or if you feel unwell, seek medical advice immediately.

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).

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

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

USA