

**1 Identification of substance****Product details**

Trade name

**2,3-Dichloro-5,6-dicyanobenzoquinone**

Stock number:

A11879, L00189

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com  
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification**

Hazard designation:



T Toxic

Information pertaining to particular dangers for man and environment

R 25 Toxic if swallowed.  
R 29 Contact with water liberates toxic gas.

GHS label elements

**Danger**

Prevention:

H301+EUH029 - Toxic if swallowed. Contact with water liberates toxic gas.  
P264 Wash thoroughly after handling.

Response:

P270 Do not eat, drink or smoke when using this product.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P321 Specific treatment (see on this label).

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**3 Composition/information on ingredients**

Chemical characterization:

Designation: (CAS#)

2,3-Dichloro-5,6-dicyanobenzoquinone  
(CAS# 84-58-2), 100%

Identification number(s):

EINECS Number:

201-542-2

**4 First aid measures**

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.  
Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.  
Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek immediate medical advice.

**5 Fire fighting measures**

Suitable extinguishing agents

CO<sub>2</sub>, 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 flue gases:

Can be released in case of fire:

Hydrogen cyanide (HCN)

Hydrogen chloride (HCl)

Nitrogen oxides (NO<sub>x</sub>)

Carbon monoxide and carbon dioxide

Wear self-contained breathing apparatus.

Wear full protective suit.

Protective equipment:

**6 Accidental release measures**

Person-related safety precautions:

Put on breathing apparatus.  
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 of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Additional information:

**7 Handling and storage**

Handling

Information for safe handling:

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Storage

Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.  
Do not store together with alkalis (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.

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

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**Components with critical 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 should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Avoid contact with the eyes and skin.

**Breathing equipment:**

Use breathing protection with high concentrations.

**Eye protection:**

Safety glasses

**Body protection:**

Protective work clothing.

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

**Form:** Powder  
**Colour:** Dark yellow  
**Smell:** Not determined

**Change in condition**

**Melting point/Melting range:** 211-213°C  
**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 is not explosive.**Critical values for explosion:**

**Lower:** Not determined  
**Upper:** Not determined

**Steam pressure:** Not determined**Density:** Not determined**Solubility in / Miscibility with Water:** Reacts**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

No decomposition 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 (NO<sub>x</sub>)

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 for skin and mucous membranes.

**on the eye:**

Irritant effect.

**Sensitization:**

No sensitizing effect known.

**Other information (about experimental toxicology):**

Mutagenic effects have been observed on tests with bacteria.

**Additional toxicological information:**

Danger by skin resorption.

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:****Additional ecological information:****General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies 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 for proper disposal.

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

**Uncleaned packagings:****Recommendation:**

Disposal must be made according to official regulations.

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**14 Transport information****Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class: 6.1 (T2) Toxic substances.  
 Kemler Number: 60  
 UN-Number: 3439  
 Packaging group: III  
 Label: 6.1  
 Designation of goods: 3439 NITRILES, TOXIC, SOLID, N.O.S. (2,3-Dichloro-5,6-dicyanobenzoquinone)  
 Limited quantities (LQ) LQ9  
 Transport category 2  
 Tunnel restriction code E

**Maritime transport IMDG/GGVSea:**

IMDG/GGVSea Class: 6.1  
 UN Number: 3439  
 Label: 6.1  
 Packaging group: III  
 Marine pollutant: No  
 Correct technical 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  
 UN/ID Number: 3439  
 Label: 6.1  
 Packaging group: III  
 Correct technical 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 Regulatory information****Designation according to EC guidelines:****Code letter and hazard designation of product:**

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 (show the label where possible).

**National regulations****Information about limitation of use:**

Employment restrictions concerning young persons must be observed.  
 For use only by technically qualified individuals.

**Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

**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 data specification sheet:** 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  
 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)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent