1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: Tetrachloro-1,4-benzoquinone

Product Number: 232017
Brand: Aldrich
Index-No.: 602-066-00-1
CAS-No.: 118-75-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Chemie BV
Stationsplein 4
3331 LL ZWIJNDRECHT
NETHERLANDS

Telephone: +31 78-620-5411
Fax: +31 78-620-5421
E-mail address: eurtechserv@sial.com

1.4 Emergency telephone number

Emergency Phone #: 112

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Eye irritation (Category 2)
Skin irritation (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Irritating to eyes and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word: Warning

Hazard statement(s)
H319 Causes serious eye irritation.
H315 Causes skin irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273 Avoid release to the environment.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container to an approved waste disposal plant.

Supplemental Hazard Statements


Hazard symbol(s) 

R-phrase(s) 
R36/38 Irritating to eyes and skin.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s) 
S37 Wear suitable gloves.
S60 This material and its container must be disposed of as hazardous waste.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula: C₆Cl₄O₂
Molecular Weight: 245.88 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrachloro-p-benzoquinone</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>118-75-2</td>
</tr>
<tr>
<td>EC-No.</td>
<td>204-274-4</td>
</tr>
<tr>
<td>Index-No.</td>
<td>602-066-00-1</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Light sensitive.

7.3 Specific end uses
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Immersion protection
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: > 480 min  
Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection  
Material: Nitrile rubber  
Minimum layer thickness: 0,11 mm  
Break through time: > 30 min  
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de,  
test method: EN374  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374,  
contact the supplier of the CE approved gloves. This recommendation is advisory only and must  
be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our  
customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection  
impervious clothing. The type of protective equipment must be selected according to the  
concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection  
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher  
level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges.  
Use respirators and components tested and approved under appropriate government standards  
such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES  
9.1 Information on basic physical and chemical properties  

a) Appearance  
Form: crystalline  
Colour: dark yellow

b) Odour  
no data available

c) Odour Threshold  
no data available

d) pH  
no data available

e) Melting point/freezing point  
Melting point/range: 289 °C

f) Initial boiling point and boiling range  
no data available

g) Flash point  
no data available

h) Evaporation rate  
no data available

i) Flammability (solid, gas)  
no data available

j) Upper/lower flammability or explosive limits  
no data available

k) Vapour pressure  
no data available

l) Vapour density  
no data available

m) Relative density  
no data available

n) Water solubility  
no data available

o) Partition coefficient: n-octanol/water  
no data available

p) Autoignition temperature  
no data available

q) Decomposition temperature  
no data available

r) Viscosity  
no data available
s) Explosive properties  no data available

t) Oxidizing properties  no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents, Strong bases

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 4.000 mg/kg
LC50 Inhalation - rat - 4 h - 24.85 mg/l
Remarks: Behavioral: Somnolence (general depressed activity). Lungs, Thorax, or Respiration: Structural or functional change in trachea or bronchi. Nutritional and Gross Metabolic: Weight loss or decreased weight gain.

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
Carcinogenicity - mouse - Oral
Tumorigenic: Neoplastic by RTECS criteria. Liver: Tumors.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available
Potential health effects

Inhalation  May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion   May be harmful if swallowed.
Skin       May be harmful if absorbed through skin. Causes skin irritation.
Eyes       Causes serious eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: DK6825000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish  LC50 - Pimephales promelas (fathead minnow) - 0,01 - 1 mg/l - 96,0 h

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 3077   IMDG: 3077   IATA: 3077

14.2 UN proper shipping name
ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetrachloro-p-benzoquinone)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetrachloro-p-benzoquinone)
IATA: Environmentally hazardous substance, solid, n.o.s. (Tetrachloro-p-benzoquinone)

14.3 Transport hazard class(es)
ADR/RID: 9   IMDG: 9   IATA: 9

14.4 Packaging group
ADR/RID: III   IMDG: III   IATA: III

14.5 Environmental hazards
ADR/RID: yes   IMDG Marine pollutant: yes   IATA: yes

14.6 Special precautions for user
Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION
Further information
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