

SAFETY DATA SHEET

Creation Date 07-Jun-2010

Revision Date 19-Jan-2018

Revision Number 4

1. Identification

Product Name 1,4-Benzoquinone

Cat No. : AC105630000; AC105630010; AC105630025; AC105630050;
AC105630051; AC105631000; AC105635000

CAS-No 106-51-4

Synonyms 2,5-Cyclohexadiene-1,4-dione; Quinone

Recommended Use Laboratory chemicals.

Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|------------|
| Acute oral toxicity | Category 3 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 3 |
| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |
| Combustible dust | Yes |

Label Elements

Signal Word

Danger

Hazard Statements

May form combustible dust concentrations in air
Toxic if swallowed
Causes skin irritation
Causes serious eye irritation
Toxic if inhaled
May cause respiratory irritation



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear protective gloves/protective clothing/eye protection/face protection

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician

Skin

IF ON SKIN: Wash with plenty of soap and water
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention

Ingestion

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

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life

3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|-----------|----------|----------|
| Quinone | 106-51-4 | 99 |

4. First-aid measures

| | |
|---------------------|---|
| Eye Contact | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. |
| Inhalation | Remove from exposure, lie down. Move to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required. |
| Ingestion | Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician or Poison Control Center immediately. Call a physician immediately. If possible drink milk afterwards. |

| | |
|--|---------------------------|
| Most important symptoms and effects | No information available. |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | Water spray. Carbon dioxide (CO ₂). Dry chemical. alcohol-resistant foam. Use water spray to cool unopened containers. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | No information available |
| Method - | No information available |
| Autoignition Temperature | 560 °C / 1040 °F |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Flammable. Vapors may form explosive mixtures with air. Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

| | | | |
|---------------|---------------------|--------------------|-------------------------|
| Health | Flammability | Instability | Physical hazards |
| 3 | 2 | 1 | N/A |

6. Accidental release measures

| | |
|---|---|
| Personal Precautions | Avoid contact with the skin and the eyes. Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. |
| Environmental Precautions | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. |
| Methods for Containment and Clean Up | Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Provide adequate ventilation. Sweep up or vacuum up spillage and collect in suitable container for disposal. |

7. Handling and storage

| | |
|-----------------|--|
| Handling | Do not get in eyes, on skin, or on clothing. Remove and wash contaminated clothing before re-use. Avoid breathing vapors or mists. Do not ingest. Use only in area provided with appropriate exhaust ventilation. Wash thoroughly after handling. Minimize dust generation and accumulation. |
| Storage | Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Keep away from direct sunlight. |

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH | Mexico OEL (TWA) |
|-----------|--------------|--|---|--|
| Quinone | TWA: 0.1 ppm | (Vacated) TWA: 0.1 ppm (Vacated) TWA: 0.4 mg/m ³ TWA: 0.1 ppm TWA: 0.4 mg/m ³ | IDLH: 100 mg/m ³ TWA: 0.1 ppm TWA: 0.4 mg/m ³ | TWA: 0.1 ppm TWA: 0.4 mg/m ³ STEL: 0.3 ppm STEL: 1 mg/m ³ |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|--|---------------------------------|
| Physical State | Powder Solid |
| Appearance | Yellow |
| Odor | pungent |
| Odor Threshold | No information available |
| pH | 4 - 1 g/l aq.sol |
| Melting Point/Range | 112 - 116 °C / 233.6 - 240.8 °F |
| Boiling Point/Range | No information available |
| Flash Point | No information available |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | 0.1 mbar @ 20 °C |
| Vapor Density | Not applicable |
| Specific Gravity | 1.310 |
| Solubility | 10 g/l water (25°C) |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 560 °C / 1040 °F |
| Decomposition Temperature | No information available |
| Viscosity | Not applicable |
| Molecular Formula | C6 H4 O2 |
| Molecular Weight | 108.1 |

10. Stability and reactivity

Reactive Hazard

None known, based on information available

Stability

Stable under normal conditions.

| | |
|---|---|
| Conditions to Avoid | Temperatures above 50-70°C. Exposure to light. Incompatible products. Exposure to moist air or water. |
| Incompatible Materials | Strong bases, Butyl rubber, Reducing agents |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂) |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|--------------------------|-------------|-----------------|
| Quinone | LD50 = 130 mg/kg (Rat) | Not listed | Not listed |

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|-----------|----------|------------|------------|------------|------------|------------|
| Quinone | 106-51-4 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-----------|------------------|--|---|------------|
| Quinone | Not listed | LC50: = 0.045 mg/L, 96h flow-through (Oncorhynchus mykiss) | EC50 = 0.020 mg/L 10 min EC50 = 0.020 mg/L 5 min EC50 = 0.022 mg/L 20 min | Not listed |

| | |
|--------------------------------------|--|
| Persistence and Degradability | Soluble in water Persistence is unlikely based on information available. |
| Bioaccumulation/ Accumulation | No information available. |
| Mobility | Will likely be mobile in the environment due to its water solubility. |

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

| Component | RCRA - U Series Wastes | RCRA - P Series Wastes |
|--------------------|------------------------|------------------------|
| Quinone - 106-51-4 | U197 | - |

14. Transport information

DOT

UN-No UN2587
 Proper Shipping Name BENZOQUINONE
 Hazard Class 6.1
 Packing Group II

TDG

UN-No UN2587
 Proper Shipping Name BENZOQUINONE
 Hazard Class 6.1
 Packing Group II

IATA

UN-No UN2587
 Proper Shipping Name BENZOQUINONE
 Hazard Class 6.1
 Packing Group II

IMDG/IMO

UN-No UN2587
 Proper Shipping Name BENZOQUINONE
 Hazard Class 6.1
 Packing Group II

15. Regulatory information

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|-----------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Quinone | X | X | - | 203-405-2 | - | | X | X | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

| Component | CAS-No | Weight % | SARA 313 - Threshold Values % |
|-----------|----------|----------|-------------------------------|
| Quinone | 106-51-4 | 99 | 1.0 |

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-----------|-----------|-------------------------|-------------------------|
| Quinone | X | | - |

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|-----------|--------------------------|----------------|
| Quinone | 10 lb | - |

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------|---------------|------------|--------------|----------|--------------|
| Quinone | X | X | X | X | X |

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

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Print Date 19-Jan-2018
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information

relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS