

1,4-Naphthoquinone SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: 1,4-Naphthoquinone

* Catalog Number: S9342

* CAS Number: 130-15-4

* IUPAC Name: 1,4-Naphthalenedione

Relevant identified uses and uses advised against

* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.

* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

* Company: Selleck Chemicals

* TollFree: +1 877 796-6397

* Tel: +1 832 582-8158

* Fax: +1 832 582-8590

Emergency telephone number

* Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity (oral): Category 3. H301

Skin corrosion: Category 1. H314

Skin irritation: Category 2. H315

Skin sensitization: Category 1. H317

Serious eye damage: Category 1. H318

Serious eye irritation: Category 2. H319

Acute toxicity (inhalation): Category 1. H330

Respiratory sensitization: Category 1. H334

Specific target organ toxicity (single exposure): Category 3. H335

Specific target organ toxicity (single exposure): Category 2. H371

Specific target organ toxicity (repeated exposure): Category 2. H373

Acute aquatic toxicity: Category 1. H400

Chronic aquatic toxicity: Category 1. H410

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)	H301: Toxic if swallowed H314: Causes severe skin burns and eye damage H315: Causes skin irritation H317: May cause an allergic skin reaction H318: Causes serious eye damage H319: Causes serious eye irritation H330: Fatal if inhaled H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled H335: May cause respiratory irritation H371: May cause damage to organs H373: May causes damage to organs through prolonged or repeated exposure H400: Very toxic to aquatic life H410: Very toxic to aquatic life with long lasting effects
Precautionary statement(s)	None.
Prevention	P233: Keep container tightly closed. P260: Do not breathe dust/fume/gas/mist/vapors/spray. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264: Wash hands thoroughly after handling. P264+P265: Wash hands thoroughly after handling. Do not touch eyes. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P272: Contaminated work clothing should not be allowed out of the workplace. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P284: [In case of inadequate ventilation] Wear respiratory protection.

Response	P301+P316: IF SWALLOWED: Get emergency medical help immediately. P301+P330: IF SWALLOWED: Rinse mouth. P302+P352: IF ON SKIN: wash with plenty of water. P302+P361: IF ON SKIN: Take off immediately all contaminated clothing. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351: IF IN EYES: Rinse cautiously with water for several minutes. P305+P354: IF IN EYES: Immediately rinse with water for several minutes. P308+P316: IF exposed or concerned: Get emergency medical help immediately. P316: Get emergency medical help immediately. P317: Get emergency medical help. P319: Get medical help if you feel unwell. P320: Specific treatment is urgent. P321: Specific treatment (see information on this label and safety datasheet)). P330: Rinse mouth. P331: Do NOT induce vomiting. P332+P317: If skin irritation occurs: Get medical help. P333+P317: If skin irritation or rash occurs: Get medical help. P337+P317: If eye irritation persists: Get medical help. P338: Remove contact lenses, if present and easy to do. Continue rinsing. P342+P316: If experiencing respiratory symptoms: Get emergency medical help immediately. P354: Immediately rinse with water for several minutes. P362+P364: Take off contaminated clothing and wash it before reuse. P363: Wash contaminated clothing before reuse. P391: Collect spillage.
Storage	P403: Store in a well-ventilated place. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: 1,4-Naphthoquinone

CAS Number: 130-15-4

PubChem CID: 8530

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest. Refer for medical attention.

Skin contact: Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Eye contact: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion: Rinse mouth. Give one or two glasses of water to drink. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give a slurry of activated charcoal in water to drink. Refer for medical attention .

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Fires involving this material can be controlled with a dry chemical, carbon dioxide, foam, or Halon extinguisher. (NTP, 1992)

Use water spray, powder, foam, carbon dioxide.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

WARNING: Highly toxic — only trained personnel should handle spills.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]:

IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

[40 CFR 240-280, 300-306, 702-799 (7/1/2005)] Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste number U166, must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.

Good candidate for rotary kiln incineration, with a temperature range of 820 to 1,600 °C and a residence time of seconds. Also a good candidate for fluidized bed incineration, with a temp range of 450 to 980 °C and a residence time of seconds.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

SMALL SPILLS AND LEAKAGE: If a spill of this chemical occurs, **FIRST REMOVE ALL SOURCES OF IGNITION**, then you should dampen the solid spill material with acetone and transfer the dampened material to a suitable container. Use absorbent paper dampened with acetone to pick up any remaining material. Seal your contaminated clothing and the absorbent paper in a vapor-tight plastic bag for eventual disposal. Solvent wash all contaminated surfaces with acetone followed by washing with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should protect this chemical from exposure to light. Keep the container tightly closed under an inert atmosphere, and store under refrigerated temperatures. (NTP, 1992)

Well closed.

7.2 Conditions for safe storage, including any incompatibilities

Well closed.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles and face shield.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Wear NIOSH-approved respirator with appropriate cartridges. SCBA for high concentrations.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance: 1,4-naphthoquinone appears as yellow needles or brownish green powder with an odor of benzoquinone. (NTP, 1992)
- b) Odor: Odor like that of benzoquinone
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 277 °F (NTP, 1992)
- f) Initial boiling point and boiling range: Sublimes below 212 °F (NTP, 1992)
- 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) Vapor pressure: 0.00018 [mmHg]
- l) Vapor density: No data available
- m) Relative density: 1.422 (NTP, 1992) - Denser than water; will sink
- n) Water solubility: less than 1 mg/mL at 70 °F (NTP, 1992)
- o) Partition coefficient: n-octanol/water: Log P: No data available
- p) Auto-ignition 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 information

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

10.6 Hazardous decomposition products

No data available.

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

Causes severe skin burns and eye damage (H314).

Serious eye damage/eye irritation:

Causes serious eye damage (H318).

Respiratory or skin sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled (H334).

Germ cell mutagenicity:

No data available.

Carcinogenicity:

No data available.

Reproductive toxicity:

No data available.

Specific target organ toxicity (single exposure):

H371, H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

No indication of carcinogenicity to humans (not listed by IARC).

Exposure routes:

The substance can be absorbed into the body by inhalation and by ingestion.

Signs and symptoms of exposure:

Cough. Sore throat. Burning sensation.

Redness. Burning sensation. Pain.

Redness. Pain. Blurred vision.

Abdominal pain. Nausea. Vomiting.

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LD50 *Peromyscus maniculatus* (Deer mouse) oral 470 mg/kg

LC50 *Abra aequalis* (Common atlantic abra) 60 mg/L/14 days; static /formulated product/

LC50 *Anabaena variabilis* (Blue-green algae) >100 mg/L/14 days; static /formulated product/

LC50 *Chlorella pyrenoidosa* (Green algae) >100 mg/L/14 days; static /formulated product/

For more Ecotoxicity Values (Complete) data for 1,4-NAPHTHOQUINONE (9 total), please visit the HSDB record page.

/AQUATIC SPECIES/ /It is toxic to/ ... blue algae ... /at concentrations of/ 0.3-0.6 mg/L.

The substance is very toxic to aquatic organisms.

1,4-Naphthoquinone production and use as an intermediate in anthraquinone synthesis and as a polymerization regulator for rubber and polyester resins, and in the synthesis of dyes and pharmaceuticals may result in its release to the environment through various waste streams. It is released to the environment in atmospheric particulate emissions from the combustion wood, in fly ash from the incinerator combustion of municipal waste and in tailpipe emissions from diesel and gasoline engines. If released to air, an estimated vapor pressure of 1.69×10^{-4} mm Hg at 25 °C indicates 1,4-naphthoquinone will exist primarily as a vapor in the atmosphere; however, monitoring studies have detected it in particulate samples collected from urban air. Vapor-phase 1,4-naphthoquinone will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated

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

PBT/vPvB assessment not available.

12.6 Other adverse effects

This substance is classified as hazardous to the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Class 6.1

DOT label: Poison

14.4 Packing group

Packing group III

14.5 Environmental hazards

Marine pollutant: Yes (classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Environmental hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: 1,4-Naphthalenedione
- EFSA Legal Basis: Regulation (EC) No 1107/2009 (amended)
- New Jersey Worker and Community Right to Know Act: The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)
- CERCLA Reportable Quantities: Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 5,000 lb or 2,270 kg. The toll free number of the NR
- RCRA Requirements: U166; As stipulated in 40 CFR 261.33, when 1,4-naphthoquinone, as a commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or a manufacturing chemical intermediate, becomes a waste, it must be managed according to Federal and/or State h

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/10

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.