Catechol SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: Catechol
* Catalog Number: S6305
* CAS Number: 120-80-9
* IUPAC Name: 1,2-Benzenediol

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
Acute toxicity (oral): Category 4. H302
Acute toxicity (dermal): Category 3. H311
Acute toxicity (dermal): Category 4. H312
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 4. H332
Specific target organ toxicity (single exposure): Category 3. H335
Germ cell mutagenicity: Category 2. H341
Carcinogenicity: Category 1. H350
Carcinogenicity: Category 2. H351
Reproductive toxicity: Category 2. H361
Specific target organ toxicity (single exposure): Category 1. H370
Specific target organ toxicity (repeated exposure): Category 1. H372
Specific target organ toxicity (repeated exposure): Category 2. H373
Acute aquatic toxicity: Category 2. H401

Chronic aquatic toxicity: Category 3. H412

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word Danger

Hazard statement(s)

H301: Toxic if swallowed
H302: Harmful if swallowed
H311: Toxic in contact with skin
H312: Harmful in contact with skin
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
H332: Harmful if inhaled
H335: May cause respiratory irritation
H341: Suspected of causing genetic defects
H350: May cause cancer
H351: Suspected of causing cancer
H361: Suspected of damaging fertility or the unborn child
H370: Causes damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H373: May causes damage to organs through prolonged or repeated exposure
H401: Toxic to aquatic life
H412: Harmful to aquatic life with long lasting effects

Precautionary statement(s) None.

Prevention

P203: Obtain, read and follow all safety instructions before use.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P262: Do not get in eyes, on skin, or on clothing.
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.

Response	P301+P316: IF SWALLOWED: Get emergency medical help immediately. P301+P317: IF SWALLOWED: Get medical help. 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. P318: if exposed or concerned, get medical advice. P319: Get medical help if you feel unwell. 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. P354: Immediately rinse with water for several minutes. P361+P364: Take off immediately all contaminated clothing and wash it before reuse. P362+P364: Take off contaminated clothing and wash it before reuse. P363: Wash contaminated clothing before reuse.
Storage	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: Catechol

CAS Number: 120-80-9

PubChem CID: 289

Molecular formula: C6H6O2

Molecular weight: 110.11 g/mol

IUPAC name: benzene-1,2-diol

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

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

Eye contact: Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.

Ingestion: Rinse mouth. Give one or two glasses of water to drink. Refer immediately 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

Extinguish with dry chemicals, alcohol foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water. (USCG, 1999)

Use water spray, dry powder, alcohol-resistant foam, carbon dioxide.

To fight fire, use water, carbon dioxide, dry chemical

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

On combustion, forms irritating fumes.

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.

Flash point: 261 °F (NTP, 1992)

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. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P2 filter respirator for harmful particles.

Accidental Release Measures. Personal precautions, protective equipment and emergency procedures: Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. 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. 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.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal and plant life; and conformance with environmental and public health regulations.

Incineration: It should be combined with paper or other flammable material. An alternate procedure is to dissolve the solid in a flammable solvent and spray the solutions into the fire chamber.

Waste treatment methods. Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. 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.

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

SRP: The scientific literature for the use of contact lenses by industrial workers is inconsistent. The benefits or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

SRP: Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. Ensure that the local ventilation moves the contaminant away from the worker.

SRP: Contaminated protective clothing should be segregated in a manner such that there is no direct personal contact by personnel who handle, dispose, or clean the clothing. The completeness of the cleaning procedures should be considered before the decontaminated protective clothing is returned for reuse by the workers.

Contaminated clothing should not be taken home at the end of shift, but should remain at employee's place of work for cleaning.

The worker should immediately wash the skin when it becomes contaminated.

For more Preventive Measures (Complete) data for CATECHOL (11 total), please visit the HSDB record page.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with solid and dust. Keep people away. Wear rubber overclothing (including gloves). Stop discharge if possible. Isolate and remove discharged material. Notify local health and pollution control agencies. (USCG, 1999)

Well closed. Separated from oxidants and food and feedstuffs. Keep in the dark. Ventilation along the floor. Store in an area without drain or sewer access.

Separated from strong oxidants, food and feedstuffs. Keep in the dark. Ventilation along the floor.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Store under inert gas. Air and light sensitive.

7.2 Conditions for safe storage, including any incompatibilities

Well closed. Separated from oxidants and food and feedstuffs. Keep in the dark. Ventilation along the floor. Store in an area without drain or sewer access.

Separated from strong oxidants, food and feedstuffs. Keep in the dark. Ventilation along the floor.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Store under inert gas. Air and light sensitive.

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

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: Solid; white; odorless. Sinks and mixes with water. (USCG, 1999)

b) Odor: Faint characteristic odor

c) Odor threshold: No data available

d) pH: No data available

e) Melting point/freezing point: 221 °F (NTP, 1992)

f) Initial boiling point and boiling range: 473 °F at 760 mmHg (sublimes) (NTP, 1992)

g) Flash point: 261 °F (NTP, 1992)

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: 5 mmHg at 219 °F ; 10 mmHg at 244.9 °F (NTP, 1992)

l) Vapor density: No data available

m) Relative density: 1.344 at 68 °F (USCG, 1999) - Denser than water; will sink

n) Water solubility: greater than or equal to 100 mg/mL at 70.7 °F (NTP, 1992)

o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): 0.9

p) Auto-ignition temperature: 510 °C

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

Topological Polar Surface Area (TPSA): 40.5 Å²

Complexity: 62

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

Can react vigorously with oxidizing materials

Strong oxidizers, nitric acid.

The phenol is hypergolic with concentrated nitric acid, with a 1 ms ignition delay. /Nitric acid/

Incompatible with strong acids or bases, acid chlorides, anhydrides. Exothermic reactions with oxidants.

Incompatible materials: Oxidizing agents.

Strong oxidizers, nitric acid

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO□).

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 an allergic skin reaction (H317).

Germ cell mutagenicity:

Suspected of causing genetic defects (H341).

Carcinogenicity:

May cause cancer (H350).

Reproductive toxicity:

Suspected of damaging fertility or the unborn child (H361).

Specific target organ toxicity (single exposure):

H370, H372, H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

Catechol

Group 2B: Possibly carcinogenic to humans

Volume 15: (1977) Some Fumigants, the Herbicides 2,4-D and 2,4,5-T, Chlorinated Dibenzodioxins and Miscellaneous Industrial Chemicals

Volume Sup 7: Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs Volumes 1 to 42, 1987; 440 pages; ISBN 92-832-1411-0 (out of print)

Volume 71: (1999) Re-evaluation of Some Organic Chemicals, Hydrazine and Hydrogen Peroxide (Part 1, Part 2, Part 3)

1999

1998

2B, possibly carcinogenic to humans.

Exposure routes:

The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

inhalation, skin absorption, ingestion, skin and/or eye contact

Signs and symptoms of exposure:

Cough. Sore throat. Burning sensation behind the breastbone. Laboured breathing. Convulsions.

MAY BE ABSORBED! Redness. Convulsions.

Redness. Pain. Severe burns.

Abdominal pain. Vomiting. Diarrhoea. Convulsions. Respiratory arrest.

irritation eyes, skin, respiratory system; skin sensitization, dermatitis; lacrimation (discharge of tears), burns eyes; convulsions, increased blood pressure, kidney injury

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

EC50; Species: Pimephales promelas (Fathead minnow); Conditions: flow through bioassay with measured concentrations, 25.6 °C, dissolved oxygen 6.4 mg/L, hardness 46.0 mg/L calcium carbonate, alkalinity 40.2 mg/L calcium carbonate, and pH 7.7; Concentration: 9.00 mg/L for 96 hr (confidence limit: 8.47-9.65 mg/L); Effect: loss of equilibrium

LC50; Species: Pimephales promelas (Fathead minnow); Conditions: flow through bioassay with measured concentrations, 25.6 °C, dissolved oxygen 6.4 mg/L, hardness 46.0 mg/L calcium carbonate, alkalinity 40.2 mg/L calcium carbonate, and pH 7.7; Concentration: 9.22 mg/L for 96 hr (confidence limit: 8.62-9.87 mg/L)

LC50; Species: Crangon septemspinosa (Bay shrimp); Conditions: renewal; Concentration: >44 mg/L for 96 hr

EC50; Species: Elodea canadensis (Broad waterweed); Conditions: renewal; Concentration: 0.00025 mol/L for < or =9 days; Effect: decreased population growth

For more Ecotoxicity Values (Complete) data for CATECHOL (8 total), please visit the HSDB record page.

/AQUATIC SPECIES/ Sea bass (Dicentrarchus labrax) were injected intraperitoneally once (single dose) or three times (fractionated dose) with phenol or OH-phenols (hydroquinone, resorcinol, and pyrocatechol). On the basis of the lethal doses, OH-phenols were more toxic than phenol, and pyrocatechol was the most powerful compound. Hematological, metabolic and antioxidant blood parameters were measured 3 days after the end of the treatment. Metabolic variations as specific effec

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): 0.9

Low potential for bioaccumulation (Log P < 3).

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 contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: 1,2-Benzenediol

- California Safe Cosmetics Program (CSCP) Reportable Ingredient: Hazard Traits - Carcinogenicity; Dermatotoxicity; Neurotoxicity Authoritative List - CA TACs; EC Annex VI CMRs - Cat. 1B; IARC Carcinogens - 2B; Prop 65 Report - regardless of intended function of ing

- 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.)

- Atmospheric Standards: Listed as a hazardous air pollutant (HAP) generally known or suspected to cause serious health problems. The Clean Air Act, as amended in 1990, directs EPA to set standards requiring major sources to sharply reduce routine emissions of toxic pollutants. EPA is required to establish and phase in spec

- 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 100 lb or 45.4 kg. The toll free number of the NRC is (80

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: 2026/09/09

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.