

Safety Data Sheet **RESORCINOL**

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

SECTION 1: Identification

GHS Product identifier

Product name RESORCINOL

Other means of identification

RESORCINOL LR
1,3-Dihydroxybenzene
m-Dihydroxybenzene
3-Hydroxyphenol
1,3-Benzenediol Resorcin
Pyrogallol

Recommended use of the chemical and restrictions on use

Resins, resin adhesives, explosives, dyes, cosmetics, tanning, printing textiles, reagent for zinc, hexylresorcinol, p-aminosalicylic acid, pharmaceuticals, cross-linking agent for neoprene, rubber tackifier, adhesives and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

- Acute toxicity, oral, Cat. 4
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Serious eye damage/eye irritation, Cat. 2A
- Respiratory sensitizer, Cat. 1
- Skin corrosion/irritation, Cat. 2

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H400	Very toxic to aquatic life

Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell,
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see ... on this label).
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container to an approved waste disposal facility
P273	Avoid release to the environment.
P391	Collect spillage.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 110.11

Components

Component	CAS no.	Concentration
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Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

RESORCINOL (EC no.: 203-585-2; Index no.: 604-010-00-1)	108-46-3	100 % (weight)
CLASSIFICATIONS: Acute toxicity, oral, Cat. 4; Skin corrosion/irritation, Cat. 2; Serious eye damage/eye irritation, Cat. 2A; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Respiratory sensitizer, Cat. 1. HAZARDS: H302 - Harmful if swallowed; H315 - Causes skin irritation; H319 - Causes serious eye irritation; H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled; H400 - Very toxic to aquatic life. [SCLs/M-factors/ATEs]: *		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain and drench facilities in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.
In case of skin contact	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. If rapid recovery does not occur, obtain medical attention
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically based on judgement of doctor and individual reactions of the patient.

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use dry chemical, CO₂ or water spray. If safe to do so, move undamaged containers from fire area.

Large fire: Use dry chemical, CO₂, foam or water spray - Do not use water jets.

Specific hazards arising from the chemical

Acrid smoke and toxic and irritating fumes, including carbon dioxide and carbon monoxide.

May burn but do not ignite readily. Runoff may pollute waterways. Fire will produce irritating, poisonous and/or corrosive gases.

Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions

Prevent contamination of soil and water. Use appropriate containment to avoid environmental contamination.

Methods and materials for containment and cleaning up

Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid ingestion or inhalation of dust. Avoid contact with skin, eyes, or clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep containers closed when not in use. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before re-use. Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet. Air and light sensitive. Protect from light. Keep away from incompatibles.

Conditions for safe storage, including any incompatibilities

Store in labelled, corrosion-resistant, tightly closed containers, in a cool, dry, well-ventilated area. Air and light sensitive.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 108-46-3

Resorcinol

AU/SWA (Australia): 20 ppm; 90 mg/m³ STEL inhalation; 10 ppm; 45 mg/m³ TWA inhalation

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	White needles, plates, crystals, flakes, or powder, becoming pink on exposure to air or light, or contact with iron.
Color	No data available.
Odor	Faint, characteristic, unpleasant, phenol-like odour.
Odor threshold	6.0 mg/l (detection).
Melting point/freezing point	109 - 111 °C.
Boiling point or initial boiling point and boiling range	280 °C.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	Explosion Limit - Lower: 1.4 vol% in air @ 200 °C.
Flash point	127 °C (CC).
Explosive properties	Container explosion may occur under fire conditions. Potentially explosive reaction with concentrated nitric acid. Dusts at sufficient concentrations can form explosive mixtures with air.
Auto-ignition temperature	608 °C.
Decomposition temperature	> 281 °C (boiling point).
Oxidizing properties	No data available.
pH	4.4 (55g/L aq. sol.); 5.2 (concentrated aqueous solution).
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Completely soluble in water (717 g/l (at 25 °C); 141 g/100 g water (at 20 °C)). Solubility in Organic Solvents: Soluble in alcohol, ether, DMSO, glycerol, benzene, amyl alcohol and acetic acid; slightly soluble in chloroform.
Partition coefficient n-octanol/water (log value)	log P(o/w): 0.8.
Vapor pressure	0.027 Pa at 25 °C.
Evaporation rate	Negligible.
Density and/or relative density	Specific Gravity: 1.27.
Relative vapor density	3.8.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Taste: Sweetish taste followed by bitter taste.

Conversion factor: 1 ppm = 4.49 mg/m³; 1 mg/m³ = 0.223 ppm at 25 °C.

SECTION 10: Stability and reactivity

Reactivity

Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

Stable under normal conditions of storage and handling.

Chemical stability

Stable under ordinary conditions of use and storage. May turn pink on exposure to air, light, or on contact with iron. Hygroscopic: absorbs moisture or water from the air.

Possibility of hazardous reactions

Reacts with strong oxidants, ammonia and amino compounds causing fire and explosion hazard. Reactive with acids. Potentially explosive reaction with concentrated nitric acid. May form a salt when in contact with strong bases.

Conditions to avoid

Heat, high temperatures (above melting point), flames and other ignition sources (electrostatic charges), dust generation, exposure to air, light, moist air or water and incompatible materials.

Incompatible materials

Strong oxidizing agents (e.g nitrates, perchlorates), acetanilide, acids, acid anhydrides, acid chlorides, air, albumin, alkalies, ammonia, antipyrine, camphor, ferric salts, iron, menthol, spirit nitrous ether, urethane and periodate.

Hazardous decomposition products

Acrid smoke and toxic and irritating fumes, including carbon dioxide and carbon monoxide.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 501 mg/kg (OECD)

Ingestion: Toxic. Symptoms may be similar to those of inhalation and absorption through the skin. May cause irritation and possible burns to mucous membranes of the gastrointestinal tract. Overexposure may cause gastrointestinal upset with nausea, vomiting, severe diarrhoea, pallor, sweating, hypothermia, blood effects (methaemoglobinaemia (characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discolouration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown coloured blood), haemoglobinuria (haemoglobin in the urine)), respiration effects (cyanosis, dyspnoea), behaviour/nervous system effects (weakness, tetany, tremors, muscle twitching, convulsions, spastic paralysis, excitement, delirium, coma), cardiovascular system effects (hypotension), liver, kidney and spleen damage, and possible collapse and death.

Inhalation: May be harmful if inhaled. Inhalation of vapours or dust causes irritation to mucous membranes and respiratory tract, with burning pain in the nose and throat, coughing, wheezing and shortness of breath. Inhalation may produce nausea, abdominal pain, CNS disorders, headache, narcosis, agitation, excitation, weakness, fatigue, confusion, dizziness, vertigo, spasms, shock, methaemoglobinaemia, cyanosis (bluish discolouration of skin due to deficient oxygenation of the blood), convulsions, tachycardia, cardiovascular disorders, unconsciousness, collapse, pulmonary oedema, dyspnoea (laboured breathing), and death. May cause impaired function of thyroid.

Skin corrosion/irritation

Dermal: LD50 (rabbit): 2830 mg/kg

Causes moderate to severe skin irritation, with redness, pain, swelling, itching, corrosion, severe dermatitis and loss of superficial layers of skin. Danger of skin absorption. Can be absorbed through skin with severe exposures in toxic amounts, producing symptoms similar to ingestion. Absorbed chemical can affect metabolism and can cause restlessness, destruction of haemoglobin, cyanosis, convulsions, increased heart rate, difficulty in breathing, enlargement of local lymph glands, hyperaemia (an excess of blood in a part), oedema and death. May cause allergic skin reactions.

Standard Draize test, rabbit, skin: 20 mg/24 h, Remarks: Moderate irritation effect.

Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

Resorcinol produced necrosis of the skin of rabbits treated with 2000-8000 mg/kg.

Rabbits exposed to 1000 mg/kg showed signs of slight hyperhematosis (overgrowth of the horny layer of the skin) following signs of moderate to severe irritation after 24 hours.

Serious eye damage/irritation

Causes severe eye irritation, with redness and pain. May cause discomfort, conjunctivitis, corneal clouding, corneal ulcerations and permanent damage.

Standard Draize test, rabbit, eye: 100 mg, Remarks: Severe irritation effect.

Respiratory or skin sensitization

Based on the available animal and human data, this chemical is considered to be a moderate to strong contact skin sensitiser.

Germ cell mutagenicity

Mutagenic in bacteria, yeasts and isolated mammalian cells.

Cytogenetic analysis, Human Lymphocyte: 80 mg/L.

Cytogenetic analysis, Human Cells - not otherwise specified: 40 mg/L.

DNA damage, rat, Liver: 10 mmol/L.

Cytogenetic analysis, hamster, Ovary: 1600 mg/L.

Mutation in microorganisms, Bacteria - Salmonella typhimurium: 20 µmol/plate.

Gene conversion and mitotic recombination, Yeast - Saccharomyces cerevisiae,: 1 gm/L.

Carcinogenicity

Resorcinol [108-46-3] is evaluated in the IARC Monographs (Vol. 15, Suppl. 7, Vol. 71, 1999) as Group 3: Not classifiable as to carcinogenicity to humans.

Reproductive toxicity

In one study, resorcinol was found not to cause reproductive effects in rats.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Chronic exposure may cause blood effects (methemoglobinemia), goiter (enlargement of the thyroid gland), liver, kidney, and heart damage, unconsciousness and possible death. Prolonged or repeated ingestion may affect the endocrine system (adrenal gland, thymus), liver, kidneys, and metabolism. Prolonged or repeated exposure may cause sensitization and cross-sensitization with other phenolic materials in certain sensitive individuals. Prolonged or repeated skin contact may cause dermatitis, an allergic skin reaction.

Other Information: NICNAS: 1,3-Benzenediol: Human health tier II assessment

RESORCINOL: *TOXICITY:

typ. dose mode specie amount unit other

LDLo orl hmn 29 mg/kg

LD50 orl rat 301 mg/kg

LDLo scu rat 400 mg/kg

LDLo ipr mus 250 mg/kg

Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

LDLo scu mus 340 mg/kg
LDLo ivn dog 700 mg/kg
LDLo scu cat 110 mg/kg
LD50 skn rbt 3360 mg/kg
LDLo scu gpg 400 mg/kg
LDLo par frg 270 mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:

THR: MUTATION data. An experimental +/- carcinogen and equivocal tumorigenic agent. HIGH via oral, subcutaneous and intraperitoneal routes. A skin and eye irritant. It is primarily a skin irritant. However, it can cause systemic poisoning by acting both as a blood and nerve poison. It may also cause injury to the eyes and dermatitis, particularly to those who are sensitive to it.

*CARCINOGENICITY:

Tumorigenic Data:

TDLo: skn-mus 4800 mg/kg/12W-I

Review: IARC Cancer Review: Animal Inadequate Evidence

IARC: Not classifiable as a human carcinogen (Group 3) [610]

Status: NTP Carcinogenesis Studies; on test, December 1983

*MUTAGENICITY:

Mutation Data:

mno-sat 400 uL/plate cyt-hmn:oth 40 mg/L

mma-sat 20 umol/plate cyt-ham:ovr 1600 mg/L

cyt-hmn:lym 80 mg/L

*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89)

Final Limit: PEL-TWA 10 ppm; STEL 20 ppm [610]

ACGIH: TLV-TWA 10 ppm; STEL 20 ppm [610]

NIOSH Criteria Document: None

NFPA Hazard Rating: Health (H): None

Flammability (F): 1

Reactivity (R): 0

F1: Materials that must be preheated before ignition can occur (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:

Skin and Eye Irritation Data:

skn-rbt 500 mg

eye-rbt 100 mg SEV

Standards and Regulations: DOT-Hazard: ORM-E; Label: None

DOT-IMO: Poison B; Label: St. Andrew's Cross

Review: Toxicology Review

Status: Reported in EPA TSCA Inventory, 1983

Meets criteria for proposed OSHA Medical Records Rule

Safety Data Sheet

RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

EPA Genetic Toxicology Program, January 1984

From Sigma:

Hazard Codes Xn,N

Risk Statements 22-36/38-50

Safety Statements 26-61

RIDADR UN 2876 6.1/PG 3

WGK Germany 1

RTECS VG9625000

SECTION 12: Ecological information

Toxicity

Formation of health-hazardous mixtures possible with water. Highly toxic for aquatic organisms.

Persistence and degradability

Readily degradable in water.

BOD 61% of ThOD /5 d; COD 100% of ThOD; ThOD: 1.89 g/g.

Bioaccumulative potential

Low bioaccumulation potential.

Mobility in soil

Distribution: log P(o/w): 0.8.

Results of PBT and vPvB assessment

No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Sewage disposal

Low bioaccumulation potential.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

UN Number	2876
Hazchem emergency action code (EAC)	2Z
UN Proper Shipping Name	RESORCINOL
Transport hazard class(es)	6.1
Packing group	III

Environmental hazards

Formation of health-hazardous mixtures possible with water. Highly toxic for aquatic organisms.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

Canadian Domestic Substances List (DSL)

Chemical name: 1,3-Benzenediol

CAS: 108-46-3

Massachusetts Right To Know Components

Chemical name: Resorcinol

CAS number: 108-46-3

New Jersey Right To Know Components

Common name: RESORCINOL

CAS number: 108-46-3

Pennsylvania Right To Know Components

Chemical name: 1,3-Benzenediol

CAS number: 108-46-3

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Safety Data Sheet
RESORCINOL

SDS no. V7BQ3Q2E • Version 1.0 • Date of issue: 2023-07-12

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)