

Material Safety Data Sheet

Resorcinol

ACC# 20100

Section 1 - Chemical Product and Company Identification

MSDS Name: Resorcinol**Catalog Numbers:** S75194, S80154A, R17-500, R254-500, S76796, S77938REAG**Synonyms:** 1,3-Benzenediol; m-Dihydroxybenzene; Resorcin; 1,3-Dihydroxybenzene; m-Benzenediol; m-Hydroxyphenol; 3-Hydroxyphenol.**Company Identification:**

Fisher Scientific
 1 Reagent Lane
 Fair Lawn, NJ 07410

For information, call: 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
108-46-3	Resorcinol	100	203-585-2

Hazard Symbols: XN N**Risk Phrases:** 22 36/38 50

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white powder. **Danger!** May cause methemoglobinemia. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Harmful if swallowed. Dangerous for the environment. Causes eye burns. Causes skin irritation. Causes respiratory tract irritation. May be harmful if absorbed through skin or if inhaled. Hygroscopic (absorbs moisture from the air).

Target Organs: Blood, kidneys, liver, spleen, nerves.**Potential Health Effects**

Eye: Contact with eyes may cause severe irritation, and possible eye burns. Contact of the eye with resorcinol has caused necrosis and corneal perforation. Application of 0.1 gram of resorcinol into the eyes of rabbits caused discomfort, conjunctivitis, and corneal ulcerations which were not reversible.

Skin: Causes moderate skin irritation. May be absorbed through the skin in harmful amounts. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. If absorbed, may cause symptoms similar to those for ingestion. Resorcinol has been known to cause hyperemia (an excess of blood in a part), itch, dermatitis, edema, and corrosion.

Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, and death.

Inhalation: Dust is irritating to the respiratory tract. Causes irritation of the mucous membrane and upper

respiratory tract.

Chronic: May cause liver and kidney damage. Repeated exposure may cause sensitization dermatitis. Repeated exposure may cause damage to the spleen.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Persons with skin problems or liver, kidney, lung, or blood diseases may be at increased risk from exposure to this substance. Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. If cyanosis is severe, intravenous injection of Methylene Blue, 1mg/kg of body weight may be of value.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Dusts at sufficient concentrations can form explosive mixtures with air. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media: Water spray may cause frothing. Cool containers with flooding quantities of water until well after fire is out. In case of fire, use carbon dioxide, dry chemical powder or appropriate foam.

Flash Point: 127 deg C (260.60 deg F)

Autoignition Temperature: 608 deg C (1,126.40 deg F)

Explosion Limits, Lower: 1.4% @ 200°C

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Store protected from light. Store protected from air. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible

substances. Do not expose to air. Store protected from light.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Resorcinol	10 ppm TWA; 20 ppm STEL	10 ppm TWA; 45 mg/m ³ TWA	none listed

OSHA Vacated PELs: Resorcinol: 10 ppm TWA; 45 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin: Wear appropriate protective clothing to prevent skin exposure.

Clothing: Wear appropriate protective gloves to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Powder

Appearance: white

Odor: pleasant odor

pH: 5.2 in solution

Vapor Pressure: 1 mm Hg @ 108.4 deg C

Vapor Density: 3.8 (air=1)

Evaporation Rate: Negligible

Viscosity: Not available.

Boiling Point: 276 deg C

Freezing/Melting Point: 110.7 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 1.272

Molecular Formula: C₆H₆O₂

Molecular Weight: 110.11

Section 10 - Stability and Reactivity

Chemical Stability: Stable at normal temperatures in tightly closed containers under an inert atmosphere. Substance undergoes color change upon exposure to light and air. May undergo auto-oxidation at 25°C.

Conditions to Avoid: Light, dust generation, exposure to air, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, bases, nitric acid, albumin, iron salts, antipyrine, acetanilide, menthol, urethane, spirit nitrous ether, camphor.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:**CAS#** 108-46-3: VG9625000**LD50/LC50:**

CAS# 108-46-3:

Draize test, rabbit, eye: 100 mg Severe;

Draize test, rabbit, skin: 500 mg;

Draize test, rabbit, skin: 20 mg/24H Moderate;

Oral, mouse: LD50 = 200 mg/kg;

Oral, rat: LD50 = 301 mg/kg;

Skin, rabbit: LD50 = 3360 mg/kg;

Carcinogenicity:

CAS# 108-46-3:

IARC: IARC Group 3 - not classifiable**Epidemiology:** In a study of workers in a tire manufacturing plant, the presence of dermatitis has been directly correlated with exposure to the processes involving resorcinol use.**Teratogenicity:** No information available.**Reproductive Effects:** No information available.**Neurotoxicity:** No information available.**Mutagenicity:** 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.**Other Studies:** Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 100 mg (Severe).

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 88.6 mg/L; 24Hr; UnspecifiedFish: Fathead Minnow: LC50 = 72.6 mg/L; 48 Hr; UnspecifiedFish: Fathead Minnow: LC50 = 53.4 mg/L; 96 Hr; Unspecified If released to soil or water, biodegradation is expected to be an important fate process based on the results of a number of biological screening studies which have suggested that resorcinol is readily biodegradable. Resorcinol may react relatively rapidly in sunlit natural water with photochemically produced oxidants such as hydroxyl and peroxy radicals. Resorcinol is expected to leach readily in soil; however, leaching may not be important if concurrent biodegradation occurs at a rapid rate.**Environmental:** If released to the atmosphere, resorcinol is expected to degrade rapidly (estimated half-life of 1.9 hr) by reaction with photochemically produced hydroxyl radicals. Night-time reaction with nitrate radicals may also contribute to its atmospheric transformation.**Physical:** No information found**Other:** Dangerous to aquatic life in high concentrations.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.**RCRA U-Series:** CAS# 108-46-3: waste number U201.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	RESORCINOL				RESORCINOL
Hazard Class:	6.1				6.1(9.2)
UN Number:	UN2876				UN2876
Packing Group:	III				III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 108-46-3 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

CAS# 108-46-3: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 108-46-3: acute, chronic.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 108-46-3 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 108-46-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN N

Risk Phrases:

R 22 Harmful if swallowed.

R 36/38 Irritating to eyes and skin.
R 50 Very toxic to aquatic organisms.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 108-46-3: 1

Canada - DSL/NDSL

CAS# 108-46-3 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2B.

Canadian Ingredient Disclosure List

CAS# 108-46-3 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 108-46-3: OEL-AUSTRALIA:TWA 10 ppm (45 mg/m³);STEL 20 ppm (90 mg/m³) OEL-BELGIUM:TWA 10 ppm (45 mg/m³);STEL 20 ppm (90 mg/m³) OEL-DENMARK:TWA 10 ppm (45 mg/m³) OEL-FINLAND:TWA 10 ppm (45 mg/m³);STEL 20 ppm (90 mg/m³) OEL-FRANCE:TWA 10 ppm (45 mg/m³) OEL-HUNGARY:TWA 45 mg/m³;STEL 90 mg/m³;Skin OEL-THE NETHERLANDS:TWA 10 ppm (45 mg/m³) OEL-SWITZERLAND:TWA 10 ppm (45 mg/m³) OEL-UNITED KINGDOM:TWA 10 ppm (45 mg/m³);STEL 20 ppm (90 mg/m³) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

Section 16 - Additional Information
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MSDS Creation Date: 6/30/1999

Revision #3 Date: 10/02/2001

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