

Classified as hazardous in accordance with the criteria of EPA New Zealand

Section 1 - Identification

Product Identifier

| | |
|-----------------------------|---------------------------------------|
| Product Name | <u>Resorcinol</u> |
| CAS No | 108-46-3 |
| Synonyms | 1,3-Benzenediol; 1,3-Dihydroxybenzene |
| Molecular Formula | C6 H6 O2 |
| Molecular Weight | 110.11 |
| Recommended Use | Laboratory chemicals. |
| Uses advised against | No Information available |

| | |
|--------------------------------|---|
| Product Code | A13080 |
| Address | Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand |
| Emergency Tel. | CHEMTREC® 09 980 6780 or +64 9 980 6780 |
| Telephone / Fax Numbers | Tel: 09 980 6700 Fax: 09 980 6788 |
| E-mail address | ANZinfo@thermofisher.com |

Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

HSNO Approval Number HSR002503

GHS Classification

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

| | |
|-----------------------------------|------------|
| Acute Oral Toxicity | Category 4 |
| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 1 |

Environmental hazards

| | |
|------------------------|------------|
| Acute aquatic toxicity | Category 1 |
|------------------------|------------|

Label Elements**Signal Word****Danger****Hazard Statements**

H302 - Harmful if swallowed
H315 - Causes skin irritation
H400 - Very toxic to aquatic life
H318 - Causes serious eye damage

Precautionary Statements**Prevention**

P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

Toxic to terrestrial vertebrates
Contains a known or suspected endocrine disruptor
Contains a substance on the National Authorities Endocrine Disruptor Lists
May form explosible dust-air mixture if dispersed
May form combustible dust concentrations in air

Section 3 - Composition and Information on Ingredients

| Component | CAS No | Weight % |
|------------|----------|----------|
| Resorcinol | 108-46-3 | <100 |

Section 4 - First Aid Measures

Description of first aid measures**General Advice**

If symptoms persist, call a physician.

New Zealand Emergency Tel.

CHEMTREC®
09 980 6780 or +64 9 980 6780

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

| | |
|--|--|
| | symptoms occur. |
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur. |
| Self-Protection of the First Aider | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |
| First Aid Facilities | Eyewash, safety shower and washroom. |
| Most important symptoms and effects | None reasonably foreseeable. |
| Notes to Physician | Treat symptomatically. |

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Water spray. Carbon dioxide (CO₂). Dry chemical. Water mist may be used to cool closed containers. Chemical foam.

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

Dust can form an explosive mixture with air. Containers may explode when heated. Do not allow run-off from fire-fighting to enter drains or water courses. Fine dust dispersed in air may ignite.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂).

Decomposition Temperature

> 281°C

Special protective equipment and precautions for fire fighters

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

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. 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

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Advice on safe handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Protect from direct sunlight. Store under an inert atmosphere. Keep container tightly closed in a dry and well-ventilated place. Protect from moisture.

Incompatible Materials

Bases. Strong oxidizing agents. Alkaline. Acid anhydrides. Acid chlorides. Metals.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Control parameters

Exposure limits

NZ - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

| Component | New Zealand WEL | Australia | ACGIH TLV | The United Kingdom |
|------------|--|--|-----------------------------|--|
| Resorcinol | TWA: 10 ppm TWA: 45 mg/m ³ STEL: 20 ppm STEL: 90 mg/m ³ | STEL: 20 ppm STEL: 90 mg/m ³ TWA: 10 ppm TWA: 45 mg/m ³ | TWA: 10 ppm STEL: 20 ppm | STEL: 20 ppm 15 min STEL: 92 mg/m ³ 15 min TWA: 10 ppm 8 hr TWA: 46 mg/m ³ 8 hr Skin |

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Individual protection measures, such as personal protective equipment

Eye Protection

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial

applications)

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | AUS/NZ Standard | Glove comments |
|---|--------------------------------------|-----------------|-----------------|-----------------------|
| Nitrile rubber, Neoprene, Natural rubber, PVC. | See manufacturers recommendations | - | AS/NZS 2161 | (minimum requirement) |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

Recommended Filter type:
Recommended half mask:-

Particulates filter conforming to EN 143 (or AUS/NZ equivalent)
 Particle filtering: EN149:2001 (or AUS/NZ equivalent)
 When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

| | | |
|--|--------------------------|--|
| Physical State | Solid | |
| Appearance | Beige | |
| Odor | aromatic | |
| Odor Threshold | No data available | |
| pH | 4.4 | 55 g/l aq.sol |
| Melting Point/Range | 109 °C / 228.2 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | 281 °C / 537.8 °F | |
| Flammability (liquid) | Not applicable | Solid |
| Flammability (solid,gas) | No information available | |
| Explosion Limits | Lower 1.4 | |
| Flash Point | 127 °C / 260.6 °F | Method - No information available |
| Autoignition Temperature | 605 °C / 1121 °F | |
| Decomposition Temperature | > 281°C | |
| Viscosity | Not applicable | Solid |
| Water Solubility | 140 g/100 ml | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| Resorcinol | 0.8 | |
| Vapor Pressure | 1 mmHg @ 21.1 °C | |
| Density / Specific Gravity | 1.272 | |
| Bulk Density | No data available | |
| Vapor Density | Not applicable | Solid |
| Particle characteristics | No data available | |

Other information

Molecular Formula C₆ H₆ O₂
Molecular Weight 110.11
Evaporation Rate Not applicable - Solid

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

Stability Hygroscopic. Air sensitive. Light sensitive.

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

Conditions to Avoid Avoid dust formation, Heat, flames and sparks, Excess heat, Exposure to air, Exposure to light, Incompatible products, Exposure to moist air or water.

Incompatible Materials Bases, Strong oxidizing agents, Alkaline, Acid anhydrides, Acid chlorides, Metals.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO₂).

Section 11 - Toxicological Information

Acute Effects**Information on likely routes of exposure****Product Information**

Inhalation Not an expected route of exposure.
Eyes Avoid contact with eyes. Irritating to eyes.
Skin Avoid contact with skin. May cause irritation.
Ingestion May be harmful if swallowed.

Numerical measures of toxicity**(a) acute toxicity;**

Oral Category 4
Dermal Based on available data, the classification criteria are not met
Inhalation Based on available data, the classification criteria are not met

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|------------|-------------------|-----------------------|-----------------------------|
| Resorcinol | 510 mg/kg (Rat) | 2830 mg/kg (Rabbit) | LC50 > 7.8 mg/L (rat) 8 h |

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

| | |
|------------------------------------|---|
| Sensitization | No information available |
| (e) germ cell mutagenicity; | No data available |
| | Not mutagenic in AMES Test |
| (f) carcinogenicity; | No data available |
| | There are no known carcinogenic chemicals in this product |
| (g) reproductive toxicity; | No data available |
| (h) STOT-single exposure; | No data available |
| (i) STOT-repeated exposure; | No data available |
| Target Organs | None known. |
| (j) aspiration hazard; | Not applicable Solid |

Symptoms / effects, both acute and delayed
No information available.

Section 12 - Ecological Information

Ecotoxicity

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

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|------------|---|---------------------------------------|------------------------------|---|
| Resorcinol | LC50: = 53.4 mg/L, 96h (Pimephales promelas) LC50: 36 - 100 mg/L, 96h static (Pimephales promelas) LC50: = 100 mg/L, 96h flow-through (Pimephales promelas) LC50: > 100 mg/L, 96h flow-through (Oncorhynchus mykiss) | LC50 = 1.00 mg/L, 48h (Daphnia magna) | EC50 = 97 mg/l (OECD TG 201) | EC50 = 265 mg/L 30 min EC50 = 375 mg/L 5 min EC50 = 543 mg/L 48 h |

Terrestrial ecotoxicity

| Component | Earthworm | Avian | Honeybees |
|------------|---|-------|-----------|
| Resorcinol | Acute toxicity: LC100 = 40000 mg/kg (Eisenia foetida, 42 Days, soil dry weight) | | |

Persistence and Degradability Expected to be biodegradable

Persistence Persistence is unlikely.

| Component | Degradability |
|------------|-------------------------|
| Resorcinol | 97% (4 days), OECD 302B |

| | |
|--|---|
| 108-46-3 (<100) | |
| Degradation in sewage treatment plant | Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants. |

Bioaccumulative Potential Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|------------|---------|-------------------------------|
| Resorcinol | 0.8 | 2.4 dimensionless |

Mobility The product is water soluble, and may spread in water systems. . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

Other adverse effects

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues/Unused Products Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

Section 14 - Transport Information

| Component | Hazchem Code |
|---------------------------------|--------------|
| Resorcinol 108-46-3 (<100) | 2Z |

NZS 5433:2020

UN-No UN2876
Proper Shipping Name RESORCINOL
Hazard Class 6.1
Packing Group III

IATA

UN-No UN2876
Proper Shipping Name RESORCINOL
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN2876

| | |
|---|---|
| Proper Shipping Name | RESORCINOL |
| Hazard Class | 6.1 |
| Packing Group | III |
| Environmental hazards | Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable, packaged goods |
| Special Precautions | No special precautions required. Please refer to the applicable dangerous goods regulations for additional information. |
| Additional information | None known |

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

| | |
|-----------------------------|-----------|
| HSNO Approval Number | HSR002503 |
|-----------------------------|-----------|

National Regulations

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

International Regulations

| | |
|-------------------------------------|--|
| Ozone Depletion Potential | This product does not contain any known or suspected substance |
| Persistent Organic Pollutant | This product does not contain any known or suspected substance |
| Rotterdam Convention (PIC) | Not applicable |

Authorisation/Restrictions according to EU REACH

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|------------|---|---|---|
| Resorcinol | - | Use restricted. See item 75. (see link for restriction details) | - |

<https://echa.europa.eu/substances-restricted-under-reach>

International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | NZIoC | AICS | EINECS | ELINCS | NLP | KECL | IECSC | TCSI |
|------------|----------|-------|------|-----------|--------|-----|----------|-------|------|
| Resorcinol | 108-46-3 | X | X | 203-585-2 | - | - | KE-02557 | X | X |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | PICCS | ISHL | ENCS |
|------------|----------|------|---|-----|------|-------|------|------|
| Resorcinol | 108-46-3 | X | ACTIVE | X | - | X | X | X |

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

Section 16 - Other Information

This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

Legend

NZIoC - New Zealand Inventory of Chemicals

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

NZS 5433:2020 - Transport of Dangerous Goods on Land

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

WEL - Workplace Exposure Limit

DNEL - Derived No Effect Level

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

VOC - (Volatile Organic Compound)

AICS - Australian Inventory of Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

CAS - Chemical Abstracts Service

ACGIH - American Conference of Governmental Industrial Hygienists

PNEC - Predicted No Effect Concentration

OECD - Organisation for Economic Co-operation and Development

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

LC50 - Lethal Concentration 50%

ATE - Acute Toxicity Estimate

RPE - Respiratory Protective Equipment

NOEC - No Observed Effect Concentration

BCF - Bioconcentration factor

PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

Training Advice

Chemical incident response training.

Revision Date

13-Jun-2023

Revision Summary

SDS sections updated

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 Safety Data Sheet