

SAFETY DATA SHEET

Resorcinol



Revision Date:
11/10/2021

Spec ID:
900000005730

Date of last issue: 05/18/2020
Date of first issue: 05/18/2020

SECTION 1. IDENTIFICATION

Product name : Resorcinol

Manufacturer or supplier's details

Company name of supplier : SUMITOMO CHEMICAL Co., Ltd.

Address : Specialty Chemicals Division
7-1, Nihonbashi 2-chome, Chuo-ku, Tokyo 103-6020, Japan

Telephone : +81-3-5201-0263

Telefax : +81-3-5201-0462

Emergency telephone number : Europe, Americas (excluding USA), Middle East, Africa, Israel
(Europe and English Language speaking countries):+44-1235-239-670(CARECHEM24, UK)

Initial Supplier Identifier
Données relatives au fournisseur

Univar Solutions Canada Ltd.

64 Arrow Road
North York, ON M9M 2L9
Telephone: 1-866-686-4827

Recommended use of the chemical and restrictions on use

Recommended use : For general industrial use

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Explosives : Not applicable

Flammable gases : Not applicable

Aerosols : Not applicable

Oxidizing gases : Not applicable

Gases under pressure : Not applicable

Flammable liquids : Not applicable

Flammable solids : Not classified

Self-reactive substances and mixtures : Not applicable

Pyrophoric liquids : Not applicable

Pyrophoric solids : Not applicable

Self-heating substances and mixtures : Classification not possible

Substances and mixtures, which in contact with water, emit flammable gases : Not applicable

Oxidizing liquids : Not applicable

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Oxidizing solids	: Not applicable
Organic peroxides	: Not applicable
Corrosive to metals	: Classification not possible
Acute toxicity (Oral)	: Category 4
Acute toxicity (Dermal)	: Not classified
Acute toxicity (Inhalation - gas)	: Not applicable
Acute toxicity (Inhalation - vapor)	: Classification not possible
Acute toxicity (Inhalation - dust and mist)	: Not classified
Skin corrosion/irritation	: Category 2
Serious eye damage/eye irritation	: Category 1
Respiratory sensitisation	: Classification not possible
Skin sensitisation	: Category 1B
Germ cell mutagenicity	: Classification not possible
Carcinogenicity	: Classification not possible
Reproductive toxicity	: Classification not possible
Specific target organ toxicity - single exposure	: Category 1 (Central nervous system, Blood)
Specific target organ toxicity - single exposure	: Category 2 (Respiratory System)
Specific target organ toxicity - repeated exposure	: Classification not possible
Aspiration hazard	: Classification not possible
Short-term (acute) aquatic hazard	: Category 1
Long-term (chronic) aquatic hazard	: Category 3
Hazardous to the ozone layer	: Classification not possible

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GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

- : H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H317 May cause an allergic skin reaction.
- H370 Causes damage to blood, central nervous system.
- H371 May cause damage to respiratory system.
- H400 Very toxic to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

- Prevention:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P272 Contaminated work clothing should not be allowed out of the workplace.
P264 Wash face and hands thoroughly after handling.
P280 Wear protective gloves/eye protection/face protection.

Response:

P391 Collect spillage.

P310 Immediately call a POISON CENTER/doctor.

P330 Rinse mouth.

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.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container appropriately in accordance with local/regional/national/international regulations.

Other hazards

May cause a dust explosion.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Substance

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Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Resorcinol	108-46-3	>99.0

Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- If inhaled : Remove person to fresh air and keep comfortable for breathing.
Administer oxygen if breathing is difficult.
If breathing has stopped, apply artificial respiration.
Rinse nose, mouth and throat with water.
Keep person warm with a blanket etc.
If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Get immediate medical advice/attention.
- In case of skin contact : Gently wash with plenty of soap and water.
Remove/Take off immediately contaminated clothing and shoes.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
- In case of eye contact : Do not rub eye.
Hold eyelids apart.
Begin to rinse with water as soon as possible and rinse cautiously for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Get immediate medical advice/attention.
- If swallowed : Rinse mouth.
Get immediate medical advice/attention.
Remove person to fresh air and keep comfortable for breathing.
Keep person warm with a blanket etc.
If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Administer oxygen if breathing is difficult.
If breathing has stopped, apply artificial respiration.
- Protection of first-aiders : During rescue operations, wear protective equipment (see "8. Exposure control/personal protection").
Give artificial respiration with the aid of pocket mask equipped with a one-way valve or other proper respiratory medical device; Do NOT use mouth-to-mouth method.
Be aware of own risk during rescue!

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Fog
Dry chemical powder
Carbon dioxide
Dry sand
Vermiculite
- Unsuitable extinguishing media : Straight streams
- Specific hazards during firefighting : Heating may cause cylinders/containers to explode or to rocket.
A cloud of uncombusted dust of this product formed in an explosion or fire may cause a secondary explosion.
Cool cylinders/containers with an appropriate cooling means, paying heed to incompatible hazardous substances (see "10. Stability and reactivity").
Harmful gases (see "10. Stability and reactivity") may be released by fire and may cause dizziness, suffocation, or other health hazards.
Harmful substances in the water runoff from fire control may have adverse environmental and biological effects.
- Specific extinguishing methods : Evacuate immediately before the cylinder/container temperature higher than their rupture risk level.
Keep upwind.
Fight fire from a protected location.
Keep unauthorized personnel away.
In case of large fire and large quantities: Evacuate area. Fight fire remotely enough.
Protecting other nearby combustibles before they catch fire:
Remove cylinders/containers or sprinkle them with water, etc., if this can be done safely.
Protecting the product from external fire: Remove product-containing cylinders/containers to a safe place, or cool the nearby equipment with water, etc., if this can be done safely.
Dike fire water for later disposal; do not spread the material.
Cool containers with flooding quantities of water until well after fire is out.
- Special protective equipment for firefighters : Wear regional, national, and local standards approved fire fighting turnout gear and positive pressure self-contained breathing apparatus (SCBA).
Wear flame-resistant or fireproof clothes, with face shield, helmet and gloves.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Personal precautions
If fire does not break out, wear highly sealable non-permeable protective clothing.
Wear appropriate protective equipment (see "8. Exposure control/personal protection") to avoid contact of dust with the eyes and skin and inhalation of dust.
Emergency procedures
Spray water to prevent scattering, if appropriate.

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- Evacuate people who are downwind, and keep upwind while working.
Keep unauthorized personnel away.
If the surrounding area may be affected (including health impairment), warn the nearby residents.
Remove immediately all ignition sources nearby.
Form large safety zone.
Prevention of secondary hazards
ELIMINATE all ignition sources such as heat/sparks/open flames/hot surfaces/static discharges.
Prevent dust cloud or/and dust accumulation.
Prepare appropriate extinguishing agent. (See "5. Fire-fighting measures")
Prevent discharge into drain ditches, drain sewers, basements or closed areas.
Cover powder spill with plastic sheet or tarp to minimize spreading and to keep powder dry.
- Environmental precautions : Do not release the product to the environment.
Form a dike to prevent the leakage from flowing into waterways (rivers, sewers, etc.) and affecting the environment.
Take appropriate measures, such as warning nearby residents of the leak, because its smell or irritating odor is intense.
- Methods and materials for containment and cleaning up : Keep wetted with water to prevent flying dust.
Collect the leakage promptly.
Collect the leakage in a sealed container as far as possible.
Wet the spills, if appropriate, to prevent scattering.
Dike the leakage promptly to prevent scattering into waters (river, sewer, and so on), then wet with water and collect later disposal.
Sweep and collect the leakage in a sealed container and move it to a safe place.
Collect whole spill.
ELIMINATE all ignition sources such as heat/sparks/open flames/hot surfaces/static discharges.
Consult with an expert when collecting the leakage.
Use dust explosion-proof type electric equipment and lighting.
Electrically conductive containers must be grounded.
Collect fine substance by dust explosion-proof cleaner to prevent scatter.
Collect the residue carefully and transfer it to a safe place.
Collect leakage after taking measures for safe handling (see "7. Handling and storage").
See "13. Disposal considerations".

SECTION 7. HANDLING AND STORAGE

- Technical measures : Eliminate all sources of ignition.
Prevent dust cloud or/and dust accumulation.
Take precautionary measures against static electricity such as grounding and bonding, wearing anti-static footwear and clothing, using grounded conductive floor.
Do not use low conductive material to equipments and containers including plastic lining, bags and filters.
Use dust explosion-proof

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electrical/ventilating/lighting/equipment.
Inerting by nitrogen gas, etc., and explosion pressure venting of confined spaces are recommended as dust explosion precautions.
If above mentioned precautions are impossible, consult an expert of a specialized company.
In case of open system, prevent from insulator lining or coating of piping, duct, hopper, and apply grounding/earthing of all conductive process units.
Handle the product in closed system or use dust collector, to prevent exposure in a dusty atmosphere.
Do not eat, drink or smoke when using this product.
Install appropriate equipment and wear appropriate personal protective equipment (see "8. Exposure control/personal protection").
Do not breathe dust.
Do not get in eyes or mouth or on skin.
Avoid contact with eyes, skin, and clothing.
Do not bring contaminated protective equipment into the rest area.
Wear an appropriate protective equipment to avoid contact to skin, mucosa membrane or eyes.
Use disposable protective clothing, if possible.
Contaminated work clothing should be disposed or be cleaned and reused, with appropriate way.
Dispose of contaminated protective clothing safely.

- Local/Total ventilation : Ventilate by a system of local and/or general exhaust.
- Advice on safe handling : Keep away from incompatible materials (see "10. Stability and reactivity").
Avoid inhaling.
- Conditions for safe storage : Store under controlled lighting and appropriate ventilation.
Take precautionary measures against static discharges.
Store locked up.
Keep away from food, drink and animal feedingstuffs.
Keep away from direct sunlight.
Store in cool place.
Store in a well-ventilated place.
Keep container tightly closed.
Store in an area without drain or sewer access.
See "10. Stability and reactivity"
- Packaging material : Suitable material: No information available.
Unsuitable material: No information available.
Use container ruled in UNRTDG (UN Recommendations on the Transport of Dangerous Goods).

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Resorcinol	108-46-3	STEL	20 ppm 90 mg/m ³	CA AB OEL
		TWA	10 ppm 45 mg/m ³	CA AB OEL
		TWA	10 ppm	CA BC OEL
		STEL	20 ppm	CA BC OEL
		STEV	20 ppm 90 mg/m ³	CA QC OEL
		TWAEV	10 ppm 45 mg/m ³	CA QC OEL
		TWA	10 ppm	ACGIH
		STEL	20 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Resorcinol	108-46-3	Methemoglobin	In blood	During or at the end of the shift	1.5 % Hb	ACGIH BEI

Engineering measures : Use a local and/or general ventilation system with collecting apparatus, and a closed equipment or apparatus.
Provide facilities to wash hands, eyes, and the body at the working place.

Personal protective equipment

Respiratory protection : Be sure to use breathing protective equipment only chosen according to specific regulatory requirements after a risk assessment.
When an emergency or leak occurs, wear air respirator or positive pressure self-contained breathing apparatus (SCBA).
filter respirator for dust

Hand protection : Be sure to use hand protective equipment only chosen according to specific regulatory requirements after a risk assessment.
impervious gloves

Eye protection : Be sure to use eye protective equipment only chosen according to specific regulatory requirements after a risk assessment.
chemical safety goggles

Skin and body protection : Be sure to use personal protective equipment (PPE) only chosen according to specific regulatory requirements after a risk assessment.
Suitable impervious protective clothing, including protective

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footwear, gloves, lab coat, apron or coveralls.
Full protective clothing, with oxygen cylinder if necessary.

Hygiene measures : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
PREVENT GENERATION OF DUST.
Do not inhale this product.
Avoid all exposure to a person.
Avoid contact with skin and eyes.
Do not get in eyes or mouth or on skin.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should be disposed or be cleaned and reused, with appropriate way.
When disposing of contaminated protective equipment and work clothes, take appropriate measures to prevent contamination of the surrounding environment.
Wash face and hands thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Flake

Colour : white, Pale yellow

Odour : A slight phenolic odor

pH : 4.6
(as aqueous solution)

Melting point : 109 - 111 °C

Boiling point : 281 °C

Flash point : 177 °C
Method: Pensky-Martens Closed Cup

Evaporation rate : no data available

Burning rate : 0.35 mm/s
Method: IMO

Upper explosion limit / upper flammability limit : no data available

Lower explosion limit / Lower flammability limit : 70 g/m³

Vapour pressure : 0.001 kPa (20 °C)

Relative vapour density : 3.8
(Air = 1.0)

Relative density : 1.285 (15 °C)

Density : no data available

Water solubility : 1.1 g/mL soluble (20 °C)

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Solubility in other solvents : Soluble
Solvent: alcohols

Soluble
Solvent: Ether

Soluble
Solvent: Glycerol

Partition coefficient: n-octanol/water : log Pow: 0.8

Auto-ignition temperature : 607 °C

Decomposition temperature : > 350 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : May form explosive dust cloud.
Open flame
Mechanical spark
Electrical spark
Welding spark
Hot surface(s)
heating
Friction heat
Electrostatic discharge
: may cause a fire and/or explosion
Strong oxidizing agents
Strong acids
: may cause a fire, explosion, and generation of a toxic gas
alkalies
Amines
Ammonia
: may react violently

Conditions to avoid : Open flame
Mechanical spark
Electrical spark
Welding spark
heating
Hot surface(s)
Friction heat
Electrostatic discharge
etc.

Incompatible materials : Strong oxidizing agents
Strong acids
alkalies
Amines
Ammonia

Hazardous decomposition products : Carbon monoxide
Carbon dioxide
Hydrocarbons

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soot

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Oral
Inhalation
Dermal
Eyes

Acute toxicity

Acute oral toxicity : LD50 (Rat): 510 mg/kg
Target Organs: Central nervous system, Respiratory System

(Human): Target Organs: Central nervous system,
Respiratory System

Acute inhalation toxicity : LC0 (Rat): > 2,800 mg/m3
Exposure time: 8 h
Target Organs: Not classified based on available information.
Remarks: Dusts, mists and fumes

Acute dermal toxicity : LD50 (Rabbit): 2,830 mg/kg
Target Organs: Not classified based on available information.

(Human): Target Organs: Central nervous system, Blood,
Respiratory System

Skin corrosion/irritation

Species : Rabbit
Result : Moderately irritating

Serious eye damage/eye irritation

Species : Rabbit
Result : Severely irritating

Respiratory or skin sensitisation

Test Type : Skin sensitisation
Species : Guinea Pig
Method : Maximization test
Result : sensitizer

Test Type : Skin sensitisation
Species : Mouse
Method : LLNA test
Result : sensitizer

Test Type : Skin sensitisation
Species : Human
Result : sensitizer

Test Type : Respiratory sensitisation
Remarks : no data available

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Germ cell mutagenicity

Genotoxicity in vitro

: Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative

Test Type: gene mutation test
Test system: mouse lymphoma
Result: positive

Test Type: gene mutation test
Test system: mouse lymphoma
Result: negative

Test Type: Micronucleus test
Test system: human lymphocytes
Result: positive

Test Type: sister chromatid exchange assay
Test system: Chinese hamster cell
Result: positive

Genotoxicity in vivo

: Test Type: Micronucleus test
Species: Rat
Cell type: Bone marrow
Application Route: Oral
Result: negative

Test Type: sister chromatid exchange assay
Species: Rat
Cell type: Bone marrow
Application Route: Oral
Result: negative

Carcinogenicity

Species : Rat
Application Route : Oral
Method : carcinogenicity study
Result : non-carcinogenic

Species : Mouse
Application Route : Oral
Method : carcinogenicity study
Result : non-carcinogenic

IARC : 3

ACGIH : A4

Reproductive toxicity

Effects on fertility : Species: Rat
Application Route: drinking water
Method: two-generation reproductive toxicity study
Result: no effect on reproduction

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Effects on foetal development : Species: Rat
Application Route: Oral
Method: reproductive and developmental toxicity study
Result: non-teratogenic

STOT - single exposure

See Acute toxicity ("11. Toxicological information")

STOT - repeated exposure

Species : Rat
Application Route : Oral
Method : 90-day repeated dose toxicity study
Target Organs : No specific target organs noted.

Aspiration toxicity

no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish : LC50 (Fathead Minnow): 26.8 mg/l
Exposure time: 96 hrs

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water Flea): 1 mg/l
Exposure time: 48 hrs

Toxicity to algae/aquatic plants : ErC50 (Green algae): > 97 mg/l
Exposure time: 72 hrs

NOECr (Green algae): 97 mg/l
Exposure time: 72 hrs

Toxicity to fish (Chronic toxicity) : LOEC (Rainbow Trout): 32 mg/l
Exposure time: 60 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water Flea): $\geq 172 \mu\text{g/l}$
Exposure time: 21 d

Persistence and degradability

Biodegradability : Result: rapid biodegradability

Bioaccumulative potential

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3.16

Mobility in soil

no data available

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Other adverse effects

Ozone-Depletion Potential : Regulation: UNEP - Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer
Remarks: not listed to the Montreal Protocol

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Dispose of contents/container appropriately in accordance with local/regional/national/international regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 2876
Proper shipping name : RESORCINOL
Class : 6.1
Packing group : III
Labels : 6.1

IATA-DGR

UN/ID No. : UN 2876
Proper shipping name : Resorcinol
Class : 6.1
Packing group : III
Labels : Division 6.1 - Toxic substances
Packing instruction (cargo aircraft) : 677
Packing instruction (passenger aircraft) : 670

IMDG-Code

UN number : UN 2876
Proper shipping name : RESORCINOL
Class : 6.1
Packing group : III
Labels : 6.1
EmS Code : F-A, S-A
Marine pollutant : yes

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

Not applicable for product as supplied.

National Regulations

TDG

UN number : UN 2876
Proper shipping name : RESORCINOL
Class : 6.1
Packing group : III
Labels : 6.1
ERG Code : 153
Marine pollutant : yes

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Special precautions for user

Remarks : Make sure no damage, corrosion, leaks, and so on on the container(s) before transportation.
Load not to fall, drop, damage the product, and make sure to take measures to secure the loaded products.
Equip in automobile or ship for transportation with protective equipment (gloves, eyeglasses, mask, etc), and fire extinguisher, tools necessary for emergency.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

Please follow local regulations.

SECTION 16. OTHER INFORMATION

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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.