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Safety data sheet according to 1907/2006/EC, Article 31

Printing date 11.08.2021 Version number 6 Revision: 11.08.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- · 1.1 Product identifier
- · Trade name: Resorcinol
- · CAS Number:

108-46-3

· EC number:

203-585-2

· Index number:

604-010-00-1

- · Registration number 01-2119480136-40-0004
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against
- 1. Rubber compounding of resorcinol
- 2. Rubber compounding of resin containing free resorcinol
- 3. Rubber dipping of resorcinol
- 4. Rubber dipping of resin containing free resorcinol
- 5. Intermediate applications
- 6. Manufacture of PRF resins
- 7. Manufacture of RF resins
- 8. Wood adhesive use of PRF resins containing free resorcinol
- 9. Manufacture of other resins
- 10. Formulation and (re)packing of preparations
- 11. Use in coatings
- 12. Use in other adhesives and sealants
- 13. Processing of Resins

· Sector of Use

SU6a Manufacture of wood and wood products

SU8 Manufacture of bulk, large scale chemicals (including petroleum products)

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU11 Manufacture of rubber products

SU12 Manufacture of plastics products, including compounding and conversion

SU15 Manufacture of fabricated metal products, except machinery and equipment

SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment

SU20 Health services

· Product category PC39 Cosmetics, personal care products

· Process category

PROC1 Use in closed process, no likelihood of exposure

PROC2 Use in closed, continuous process with occasional controlled exposure

PROC3 Use in closed batch process (synthesis or formulation)

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC6 Calendering operations

PROC7 Industrial spraying

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated

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facilities

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring

PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation

PROC15 Use as laboratory reagent

PROC19 Hand-mixing with intimate contact and only PPE available

PROC21 Low energy manipulation of substances bound in materials and/or articles

PROC24 High (mechanical) energy work-up of substances bound in materials and/or articles

· Environmental release category

ERC1 Manufacture of substances

ERC2 Formulation of preparations

ERC3 Formulation in materials

ERC5 Industrial use resulting in inclusion into or onto a matrix

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6c Industrial use of monomers for manufacture of thermo-plastics

ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC8a Wide dispersive indoor use of processing aids in open systems

· Application of the substance / the mixture

- 1. Rubber compounding of resorcinol
- 2. Rubber compounding of resin containing free resorcinol
- 3. Rubber dipping of resorcinol
- 4. Rubber dipping of resin containing free resorcinol
- 5. Intermediate applications
- 6. Manufacture of PRF resins
- 7. Manufacture of RF resins
- 8. Wood adhesive use of PRF resins containing free resorcinol
- 9. Manufacture of other resins
- 10. Formulation and (re)packing of preparations
- 11. Use in coatings
- 12. Use in other adhesives and sealants
- 13. Processing of Resins
- · Uses advised against Use of skin peels containing resorcinol.

· 1.3 Details of the supplier of the safety data sheet

Atul Ireland Limited

Suite 24 Anglesea House,

63 Carysfort Avenue,

Blackrock A94 X 209

Dublin, Ireland

Telephone: (+353 1) 4003624

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Trade name: Resorcinol

· Manufacturer/Supplier:

Atul Ltd

East Site

Atul 396 020, Gujarat, India Telephone: (+91 2632) 230000, 230402

Bulk Chemicals and Intermediates Business

Further information obtainable from:

Corporate Product Safety and REACH Regulations

E-mail: product safety@atul.co.in

· 1.4 Emergency telephone number:

During normal opening times: (+ 353 1) 4003624 (in Europe)

(+91 2632) 230473 | (+91) 9687369677 (in India)

CHEMTREC EMERGENCY CALL: (+1 800) 424 9300 (CCN: 1991) (in USA and Canada)

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008

According to Commission Regulation (EU) 2015/830



GHS08 health hazard

STOT SE 1 H370-H371 Causes damage to the central nervous system and the blood. Route of exposure: Oral. May cause damage to the respiratory system. Route of exposure: Oral.



GHS05 corrosion

Eye Dam. 1 Causes serious eye damage. H318



GHS09 environment

Aquatic Acute 1 *Very toxic to aquatic life.* H400



GHS07

Acute Tox. 4 H302 Harmful if swallowed. Skin Irrit. 2 Causes skin irritation. H315

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Trade name: Resorcinol

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· Storage: Store in a cool, and well ventilated dry place

- · 2.2 Label elements
- · Labelling according to Regulation (EC) No 1272/2008

According to Commission Regulation (EU) 2015/830

The substance is classified and labelled according to the CLP regulation.

· Hazard pictograms









GHS05 GHS07 GHS08 GHS09

- · 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-H371 Causes damage to the central nervous system and the blood. Route of exposure: Oral. May cause damage to the respiratory system. Route of exposure: Oral.

H400 Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/physician.

P321 Specific treatment (see on this label).

P405 Store locked up.

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

- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- **PBT:** The substance is not PBT
- · vPvB: The substance is not vPvB

SECTION 3: Composition/information on ingredients

- · 3.1 Chemical characterisation: Substances
- · CAS No. Description

108-46-3 Resorcinol 99.00 - 99.99% w/w

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- · Identification number(s) · EC number: 203-585-2 · Index number: 604-010-00-1
- · SVHC Does not fall under SVHC substance

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- · General information:

Take affected persons out into the fresh air.

Seek immediate medical advice.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- · After swallowing: Call for a doctor immediately.
- · 4.2 Most important symptoms and effects, both acute and delayed

Causes damage CNS effects and blood effects - methemoglobin via oral bolus dosing

May cause damage to the respiratory system, via oral bolus dosing

4.3 Indication of any immediate medical attention and special treatment needed NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Have patient drink several glasses of water or milk. DO NOT induce vomiting. Keep airway clear. GET MEDICAL ATTENTION IMMEDIATELY.

SECTION 5: Firefighting measures

- · 5.1 Extinguishing media
- · Suitable extinguishing agents: Carbon dioxide, Dry chemical, Foam, Water spray
- · 5.2 Special hazards arising from the substance or mixture Carbon oxides
- · 5.3 Advice for firefighters

Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

Protective equipment:

A self-contained breathing apparatus NIOSH, MSHA or EN149 (approved or equivalent) and suitable protective clothing and protective gloves should be worn if involved in fire with other materials.



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SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Inhalation: Remove person to fresh air, if not breathing give artificial respiration. If breathing is difficult give oxygen and call a physician.

Skin contact: Wash affected area with soap and plenty of water, Remove contaminated clothing. If any irritation seek immediate medical aid.

Eye contact: Immediately flush eyes with a plenty of water for 15 minutes. Seek immediate medical aid. Ingestion: Induce omitting immediately as directed by physician. Never give anything by mouth to an unconscious person.

· 6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

- · 6.3 Methods and material for containment and cleaning up: Pick up mechanically.
- · 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Keep container tightly closed when not in use.

Keep dry and cool area

Provide suction extractors if dust is formed.

- · Information about fire and explosion protection: Keep ignition sources away Do not smoke.
- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: The material is sensitive to light and air.
- · Information about storage in one common storage facility: Store away from oxidising agents.
- · Further information about storage conditions: Keep container tightly sealed.
- · 7.3 Specific end use(s)
- 1. Rubber compounding of resorcinol
- 2. Rubber compounding of resin containing free resorcinol
- 3. Rubber dipping of resorcinol
- 4. Rubber dipping of resin containing free resorcinol
- 5. Intermediate applications
- 6. Manufacture of PRF resins
- 7. Manufacture of RF resins
- 8. Wood adhesive use of PRF resins containing free resorcinol

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- 9. Manufacture of other resins
- 10. Formulation and (re)packing of preparations
- 11. Use in coatings
- 12. Use in other adhesives and sealants
- 13. Processing of Resins

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- · Additional information about design of technical facilities:

Install a closed system or local exhaust as possible so that workers should not be exposed directly. Install safety shower and eye bath.

· Ingredients with limit values that require monitoring at the workplace:

108-46-3 resorcinol

ACGIH TLV(TWA) 10 ppm

ACGIH TLV(STEL) 20 ppm

108-46-3 resorcinol

IOELV 45 mg/m³, 10 ppm

Skin

· DNELs

Long-term - systemic effects (Dermal) for workers: 40 mg/kg bw/day

Long-term - systemic effects (Inhalation) for workers: 5.6 mg/m³

Long-term - systemic effects (Dermal) for the general population: 20 mg/kg bw/day

Long-term - systemic effects (Inhalation) for the general population: 1.4 mg/m³

Long-term - systemic effects (Oral) for the general population : 0.4 mg/kg bw/day

· PNECs

PNEC aqua (freshwater): 0.0172 mg/L

PNEC aqua (marine water): 0.00172 mg/L

PNEC sediment (freshwater): 0.109 mg/kg sediment dw

PNEC sediment (marine water): 0.0109 mg/kg sediment dw

PNEC soil: 10 mg/kg soil dw

PNEC STP: 0.79 mg/L

· Ingredients with biological limit values:

108-46-3 resorcinol

BCF 3.16

108-46-3 resorcinol

Henry's law constant (H) at 20 °C 0,000010012

- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

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Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

· Respiratory protection:

Approved respiratory equipment must be used when airborne concentrations are unknown or exceeds the exposure limits. If within OSHA protection factor, air purifying organic vapour cartridge.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eve protection:



Tightly sealed goggles

- · Body protection: Impervious protective clothing.
- · Risk management measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

General Information

Form: Flakes

Colour: White to off white

Odour: Phenolic

• *Odour threshold:* No data available

· pH-value: No data available

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· Change in condition Melting point/freezing point: Initial boiling point and boiling range	110 (at 1013 hPa) °C 2: 277.5 (at 1013 hPa) °C
· Flash point:	127 (at 1013 hPa closed cup) °C
· Flammability (solid, gas):	Product is not flammable.
· Ignition temperature:	605 - 608 °C
· Explosive properties:	Not an explosive
· Explosion limits: · Upper: Oxidising properties	Not an oxidising agent
· Vapour pressure at 20 °C:	0.065 Pa
Density at 20 °C: Relative density at 20 °C	1.271 g/cm³ 1.278
· Solubility in / Miscibility with water at 20 °C:	717000 mg/l
Partition coefficient: n-octanol/water:	0.8 log POW
· 9.2 Other information	Dissociation constant pKa: 9.81 at 25 °C

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No adverse reactions known.
- · 10.2 Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · 10.3 Possibility of hazardous reactions No dangerous reactions known.
- · 10.4 Conditions to avoid

Sensitive to light and air

Exposure to moisture.

- · 10.5 Incompatible materials: Oxidizing agents, bases, amines, iron.
- · 10.6 Hazardous decomposition products: Oxides of carbon
- · Additional information: Henry's Law constant H: < 0.00000001 atm m³/mol at 25 °C

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SECTION 11: Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity

Harmful if swallowed.

· LD/LC50	valuos ra	lovant	for clas	sification ·
LD/LC30	vuiues i	uevuni i	ivi cius	sincunon.

Oral	LD 50	510 mg / kg bw (rat)
Dermal	LD 50	2830 mg / kg bw (rab) 2800 mg / m3 air (rat)
Inhalative	LC 50	2800 mg / m3 air (rat)

- · Primary irritant effect:
- · Skin corrosion/irritation

May cause an allergic skin reaction

Causes skin irritation.

- Serious eye damage/irritation
- Causes serious eye damage.
- · Respiratory or skin sensitisation

May cause an allergic skin reaction.

- · Other information (about experimental toxicology): No data available.
- · Subacute to chronic toxicity: No data available.
- · Additional toxicological information:
- · Toxicokinetics, metabolism and distribution No data available.
- · Acute effects (acute toxicity, irritation and corrosivity)

Skin irritation / corrosion: Causes Skin irritation.

Eye irritation: corrosive

- · Sensitisation Sensitising.
- · Repeated dose toxicity No data available
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction) Does not fall under SVHC.
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- · Reproductive toxicity Based on available data, the classification criteria are not met.
- · STOT-single exposure

Causes damage to the central nervous system and the blood. Route of exposure: Oral. May cause damage to the respiratory system. Route of exposure: Oral.

- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- · **Aspiration hazard** Based on available data, the classification criteria are not met.



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SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:				
Dermal	LC 50 48	1 mg / lit (Fis)		
	LC 50 96 h	26.8 mg / lit (Fis)		
	LOEC 60 Days	32 mg / lit (Fis)		
	NOEC 21 Days	172 μg / lit (inv)		
	NOEC 72 h	97 mg / lit (alg)		

- · 12.2 Persistence and degradability Readily biodegradable
- · 12.3 Bioaccumulative potential

BCF = 3.16

No bioaccumulation potential.

- · 12.4 Mobility in soil log Pow: 0.80
- · Ecotoxical effects:
- · Remark:

Very toxic for fish

Harmful to fish

- · Additional ecological information:
- · General notes:

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Harmful to aquatic organisms

- 12.5 Results of PBT and vPvB assessment
- · **PBT:** The substance is not PBT
- · **vPvB:** The substance is not vPvB
- · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
- · Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- · Uncleaned packaging:
- Recommendation: Dispose of contents | container in accordance with local | regional | national | international regulation.

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SECTION 14: Transport information			
14.1 UN-Number ADR, IMDG, IATA	UN2876		
· 14.2 UN proper shipping name · ADR · IMDG · IATA	2876 RESORCINOL, ENVIRONMENTALLY HAZARDOUS 2876 RESORCINOL, MARINE POLLUTANT 2876 RESORCINOL		
14.3 Transport hazard class(es)			
ADR, IMDG			
Class Label	6.1 Toxic substances. 6.1 + 9		
· IATA			
Class	6.1 Toxic substances.		
Label	6.1		
14.4 Packing group ADR, IMDG, IATA	III		
14.5 Environmental hazards: Marine pollutant: Special marking (ADR):	Environmentally hazardous substance, solid; Marine Pollutant Symbol (fish and tree) Symbol (fish and tree)		
14.6 Special precautions for user	Warning: Toxic substances.		
14.7 Transport in bulk according to Annex II of the IBC Code	of Marpol and Not applicable.		
UN "Model Regulation":	UN2876, RESORCINOL, ENVIRONMENTALLY HAZARDOUS, 6.1, III		



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SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

· Hazard pictograms



H400







GHS05 GHS07 GHS08 GHS09

- · 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-H371 Causes damage to the central nervous system and the blood. Route of exposure: Oral. May cause damage to the respiratory system. Route of exposure: Oral.

Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/physician.

P321 Specific treatment (see on this label).

P405 Store locked up.

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

- · Directive 2012/18/EU
- · DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment Annex II
- Substance is not listed.
 REGULATION (EU) 2019/1148
- Annex I RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
 Substance is not listed.
- · Annex II REPORTABLE EXPLOSIVES PRECURSORS Substance is not listed.
- · 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

- EU



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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS:

Corporate Product Safety and REACH Regulations

product safety@atul.co.in

Contact:

Contact Person: Mr. Annamaneni Venkaiah

E-mail: product safety@atul.co.in Telephone: (+91 2632) 230473 Mobile: (+91) 96873 69677

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International

Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard - Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3