



Castle Chemicals Limited

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MATERIAL SAFETY DATA SHEET

RESORCINOL

1. IDENTIFICATION OF THE SUBSTANCE PREPARATION AND OF THE COMPANY UNDERTAKING.

Product Name	Resorcinol, Technical Grade Flake
Synonym	1, 3 dihydroxybenzene
Product use	RFL dip Formulation for tire cords, dry bonding Agent for Rubber compounding, wood adhesives and an Intermediate for other chemicals.
Chemical Family:	Benzenediol
Formula:	(C ₆ H ₄ (OH) ₂)
CAS Number:	108 - 46 - 3
Supplier	Castle Chemicals Ltd, Peak House 6 Oxford Road, Altrincham, Cheshire WA142DY Tel: +44 161 608 8800 Fax: +44 161 608 1910 Email: sales@castlechemicals.com
HS Code:	2907 21 00 10

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS Number	Percent	Exposure Limit	PPM	
				PPM	MG /M3
Resorcinol	108-46-3	100	ACGI H - TLV	10	45
			ACGI H - STEL	20	90

3. HAZARD IDENTIFICATION

Eye	Direct contact or contact with dust may cause severe irritation.
Skin	Direct contact or contact with dust may cause severe irritation and allergic skin rash. Material may penetrate skin and cause systemic toxicity
Inhalation	May cause irritation to airways.

Ingestion May cause gastrointestinal irritation. Ingestion could produce dizziness, weakness, collapse, and respiratory failure.

4. FIRST AID MEASURES

Eye contact Remove contact lenses. Immediately flush eyes and surrounding skin with large amounts of lukewarm water for 15 minutes. Seek immediate medical aid.

Skin contact Remove contaminated clothing. Wipe material from skin. Immediately flush area (s) with large amounts of water for 15 minutes. If any irritation is present seek immediate medical aid. Wash contaminated clothing before reuse.

Inhalation Remove from exposure. If breathing has stopped or is difficult, administer artificial respiration or oxygen as indicated. Seek medical aid.

Ingestion DO NOT ATTEMPT TO GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Remove any evidence of the substance from the patient's mouth. If the victim is conscious and alert give 8-12 ounces of water or milk. Seek immediate medical aid.

Note to Physician Further treatment may be necessary. Contact the local Poison Control Centre.

5. FIRE FIGHTING MEASURES

Flash point and method 127°C (261°F) CC

Auto ignition temp 608°C (1126 °F)

Flammable limits (% by volume/air)

Lower 1.4 @ 200°C (392°F)

Upper ND

Extinguishing media Use dry chemical, carbon dioxide, steam or water fog.

Fire fighting procedures Solid or straight stream water may be "ineffective", use spray or fog. Wear complete fire service protective equipment, including full face MSHA/NIOSH approved self contained breathing apparatus. Use water to cool fire-exposed container/structure/protect personnel.

Fire and explosion hazards Dust (powder) may form explosive mixture in air. Closed containers may explode or rupture when exposed to extreme heat (fire).

Sensitivity to mechanical impact	ND
Sensitivity to static discharge	ND

6. ACCIDENTAL RELEASE MEASURES

Spill or leak procedures (product)	Stop spill/leak if no risk is involved. Stay upwind. Shovel back into original dry container or waste receptacle. Flush area with water. Contain runoff from fire control and dilution water.
Confined or solidified spills	Shovel or vacuum into dry containers and cover. Flush area with water. Contain runoff from fire control and dilution water

7. HANDLING & STORAGE

Handling	Avoid contact with skin or eyes. Avoid prolonged or repeated breathing of dusts. Minimize generation of dust. Observe good personal hygiene practices and recommended procedures.
Storage	Protect from physical damage. Keep in a closed, properly labeled container within a cool (shaded), dry, well ventilated area. Store in a cool, well ventilated area away from possible sources of ignition.
Other:	DO NOT TAKE INTERNALLY. Not for use or storage in or around the home. Do not use until manufacturers precautions have been read/understood. Vacuum or wet down dust as a good housekeeping practice. Provide suitable facilities for quick drenching or flushing of the eyes and body as per 29 CFR 1910.151 (c). See section XI I – Comments of additional information.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection	Safety glasses, chemical goggles, face shield, as necessary.
Skin protection	Thermal protective and / or rubber gloves as required. In dusty areas wear necessary resistant protective apparel, including necessary head, hand and footwear protection.
Respiratory Protection	If ventilation is inadequate to maintain personal inhalation exposures below TLV (PEL), use appropriate MSHA / NIOSH approved respiratory protection to comply with current

29 CFR 1910.134 and manufacturer's "Instructions" and "Warnings".
If within OSHA protection factor, air purifying organic vapour cartridge/canister with particulate filter is acceptable.

Ventilation

Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits and areas below explosive dust concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling point	277°C (530°F)
Melting point	110°C (230° F)
Vapour pressure	<1mm @ 70°F
Vapour density (AIR =1)	3.8
Solubility (Water)	appreciable
VOC	ND
Coefficient of water/oil	Water soluble
Distribution	
Appearance/Odor	White to off-white flakes with faint characteristic odor
Specific Gravity	1.2 @ 20° C
% Volatile by vol	0 @ 70° F
Evaporation rate (Ether=1)	NA
Viscosity	NA
pH	4 - 5 (10% solution)

10. STABILITY AND REACTIVITY

Conditions contributing to instability	None
Incompatibility	Acid/alkaline catalyzed reaction with formaldehyde is exothermic.
Hazardous reaction/Decomposition/combustion products	Carbon monoxide
Conditions contributing to Hazardous polymerization.	None

11. TOXICOLOGY INFORMATION

Oral toxicology	301 mg/kg Oral Rat LD50, 29 mg/kg Oral-Human LDLO
Dermal toxicology	3.36 g/kg Intact and Abraded Skin-Rabbit LD50 24Hrs
Skin Irritation	Score 4, 4 - Moderate Irritation

Eye Irritation

Score 110 @24, @48 and @72 hrs - Corrosive

12. ECOLOGICAL INFORMATION

Water Pollution

BOD	61% ThOD
COD	100% ThOD
ThOD	1.89
Biodegradation	Adapted culture /89% removal after 48hr incubation, feed 446 mg/1

Biological Effects

Bacteria	E. Coli: LDO < 1000 mg/1
Algae	Scenedesmus LDO 60 mg/1
Arthropoda	Daphnia LD0 0.8 mg/1
Fathead Minnows	96 hr LC50 53 mg/1
Grass shrimp	96hr LC50 42 mg/1

13. DISPOSAL CONSIDERATIONS

Waste disposal	This product is a hazardous waste when it is discarded or intended to be discarded. Dispose of as a hazardous waste in accordance with national and regional regulations.
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14. TRANSPORT INFORMATION

IMO Proper shipping name	Resorcinol
IMO Hazard Class	Class 6.1, Toxic, Packaging Group III
ADR/RID Hazard Class	Class 6.1, Item Number 14 deg C
UN/NA Number	UN2876
Required marking	Toxic

15. REGULATORY INFORMATION

R phrases	22 Harmful if swallowed 36/38 Irritating to eyes and skin 50 Very Toxic to aquatic organisms
S phrases	26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 28 After contact with skin, wash immediately with plenty of water and seek medical advice. 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
Symbol	St Andrews Cross for harmful Dangerous for the environment.

16. OTHER INFORMATION

Individuals with pre-existing disease, or a history of ailments involving skin, mucous membranes, thyroid or eyes, may be at greater risk of developing adverse health effects when exposed to this material.

Animal studies have indicated that exposure to high doses can result in reversible damage to the thyroid gland. In other animals' studies, high doses of resorcinol caused damage to the following target organs/tissues: blood, G.I. tract, spleen, liver, kidneys, lungs, nervous system, and skin. No known ingredients occur at greater than 0.1% and are listed as a carcinogen in the IARC Monographs on the evaluation of the Carcinogenic Risk of Chemicals to humans, the NTP Report on Carcinogens or OSHA 29 CFR 1910.1001-1048 subpart Z Toxic and Hazardous Substances (specifically regulated substances). Do not use until manufacturer's precautions have been read/understood. Wash exposed areas promptly and thoroughly after skin contact from working with this product and before eating, drinking, using tobacco products or rest rooms. Do not wear contact lenses without proper eye protection when using this product.

Notice: While the information and recommendations set forth herein are believed to be accurate as of the date hereof. CASTLE CHEMICALS LTD makes no warrant with respect thereto and disclaims all liability from reliance thereon.

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