



MATERIAL SAFETY DATA SHEET

RESORCINOL

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name: Resorcinol, Technical Grade
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: [C₆H₄ (OH) ₂]
CAS Number: 108-46-3
Supplier: Castle Chemicals Ltd, Peak House
6 Oxford Road, Altrincham, Cheshire WA14 2DY
Tel: +44 161 608 8800 Fax: +44 161 608 1910
Email: Info@castlechemicals.com

2. HAZARD IDENTIFICATION

Risk Phrases According to Council Directive 67/548/EEC
R Phrases:
R22 Harmful if Swallowed
R36/38 Irritating to Eyes and Skin
R50 Very Toxic to Aquatic Organisms
Signal Word Harmful Xn
Dangerous for the Environment

3. COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients Resorcinol
Percent 100
Hazard Class R22, 36/38, 50 Xn
US TSCA 108-46-3
EC EINECS 203-585-2
Japan ENCS (3)-543
Korea KECL KE-02557
China IECSC Yes

4. FIRST AID MEASURES

Eye Contact:	Remove contact lenses. Immediately flush eyes and surrounding areas with large amounts of lukewarm water for at least 15 minutes. Seek immediate medical aid.
Skin Contact:	Remove contaminated clothing. Wipe material from skin. Immediately flush area with large amounts of water for at least 15 minutes. If any irritation is present seek 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 substance from patient's mouth. If victim is conscious and alert, give 8-12 ounces of water or milk. Immediately seek medical aid.
Note To Physician:	Further treatment may be necessary. Contact local Poison Control Center.

5. FIREFIGHTING MEASURES

TDG Flammability Classification:	None
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 / Static Discharge	Not Defined

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedure:	Stop spill/leak if no risk involved. Stay upwind. Shovel back into original dry container or waste receptacle. Flush area with water. Contain runoff from fire control and dilution water.
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7. HANDLING AND 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. Store in a closed, properly labeled, 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 manufacturer's 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).

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 vapor 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.

Hazardous Ingredients	Exposure Limit	PPM	MG/M3
Resorcinol	ACGIH-TLV	10	45
	ACHIG-STEL	20	90

9. PHYSICAL AND CHEMICAL PROPERTIES

Flash Point & 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
Bulk Density:	1.2 @ 20° C
% Volatile By Vol:	0 @ 21°C (70° F)
Boiling Point:	277° C (530° F)
Evaporation Rate (ETHER=1):	NA
Melting Point:	110° C (230° F)
Viscosity:	NA

Vapor Pressure:	1 mm @ 21°C (70° F)
pH:	4-5 (10% solution)
Vapor Density (AIR=1):	3.8
Solubility (WATER):	Appreciable
VOC:	ND
Coefficient of Water/Oil Distribution:	Water soluble
Appearance / odor:	White to off-white flake with a faint characteristic odor.

10. STABILITY AND REACTIVITY

Conditions Contributing to Instability:	None
Compatibility:	Acid/alkaline catalyzed reaction with formaldehyde is exothermic.
Hazardous Reactions / Decomposition / Combustion Products:	Carbon Monoxide
Conditions Contributing to Hazardous Polymerization:	None

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	
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 24 hrs.
Skin Corrosion/Irritation:	Score 4.4 – Moderate Irritation Rabbit 24 hrs
Serious Eye Damage/Irritation	Score 110 @24, @48 and @72 hrs. - Corrosive Rabbit
Respiratory Sensitization:	Not Determined
Skin Sensitization:	Positive
Mutagenicity:	Negative
Carcinogenicity:	Negative
Reproductive Toxicity:	Negative
Specific Target Organ Systemic Toxicity	Repeat Exposure - Individual with pre-existing disease, or a history of ailments involving skin, mucus membranes, thyroid or eyes may be at greater risk of adverse health effects when exposed to resorcinol. Animal studies have indicated that exposure to high doses of resorcinol can result in reversible damage to the thyroid gland. In other animal 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.

12. ECOLOGICAL INFORMATION

Water Pollution:	Biological Effects:
BOD: 61% ThOD	Bacteria-E. Coli: LDO <1000 mg/1
COD: 100% ThOD	Algae-Scenedesmus: LDO 60 mg/1
ThOD:1.89	Arthropoda-Daphnia: LDO 0.8 mg/1
Biodegradation:	
Adapted culture /89% removal	
after Fathead Minnows:	96 hr. LC50 53 mg/1
	48 hr. incubation, feed 446 mg/1
	Grass Shrimp 96 hr. 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 in accordance with national and regional regulations.
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14. TRANSPORT INFORMATION

IMO/ADR/RID/IATA:	
Proper Shipping Name:	Resorcinol
Hazard Class:	Class 6.1, Toxic, Packaging Group III
UN/NA Number:	UN2876
Required Marking:	TOXIC

15. REGULATORY INFORMATION

Labeling according to Council Directive 67/548/EEC	
R&S Phrases	Symbol
R22 Harmful if Swallowed	Xn; St. Andrews Cross for Harmful
Dangerous for the Environment	
R36/38	Irritating to Eyes and Skin
R50	Very Toxic to Aquatic Organisms
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28	After contact with skin, wash immediately with plenty of water and seek medical advice.
S61	Avoid release to the environment. Refer to special

16. OTHER INFORMATION

Disclaimer

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 Annual Report on Carcinogens or OSHA 29 CFR 1910 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 restrooms. Do not wear contact lenses without proper eye protection when using this product.

MSDS DOCUMENT NO: RESORCINOL

ISSUE: 2

ISSUE DATE: 12.4.2011