



# MATERIAL SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

DESCRIPTION: Cascophen RS-240MD

## 1. Chemical Product and Company Identification

DESCRIPTION: **Cascophen RS-240MD**  
 PRODUCT CODE: 304464  
 PRODUCT TYPE: Liquid PRF Resin  
 APPLICATION: General Purpose Wood Gluing

*CASCOPHEN® is a trademark of Borden Chemical Investments, Inc., registered in the USA.*

### Manufacturer/Supplier Information

MSDS prepared by:  
 Hexion Specialty Chemicals, Inc.  
 155 West A Street, Bldg. A-1  
 Springfield, OR  
 97477

**For Emergency Medical Assistance**  
 Call Health & Safety Information Services  
 1-866-303-6949

For additional health and safety or regulatory information, call (541)744-3256.

## 2. Composition, Information on Ingredients

The ingredients listed below have been associated with one or more immediate and/or delayed(\*) health hazards. Risk of damage and effects depends upon duration and level of exposure. BEFORE USING, HANDLING, OR EXPOSURE TO THESE INGREDIENTS, READ AND UNDERSTAND THE MSDS.

		% by weight
64-17-5	*Ethanol	5.0 - 10.0
108-95-2	*Phenol	5.0 - 10.0
108-46-3	Resorcinol	1.0 - 5.0
50-00-0	*Formaldehyde	0.01 - 0.1

*Any applicable Canadian trade secret numbers will be listed in Section 15.2.*

## 3. Hazards Identification

### 3.1 Emergency Overview

Appearance: Reddish brown clear liquid  
 Odor: Slight alcoholic

#### **WARNING!**

#### **COMBUSTIBLE**

Will polymerize at high temperatures with some evolution of heat.

Hazardous polymerization may occur.

Overexposure may cause central nervous system depression. May cause irritation of nose, throat and lungs if allowed to become airborne.

Causes chemical burns to eyes.

NORTH AMERICAN EMERGENCY RESPONSE GUIDE, 2000, NO: 127

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### HMIS Rating

HEALTH = 3 (serious)  
FLAMMABILITY = 2 (moderate)  
REACTIVITY = 1 (slight)  
CHRONIC = \*

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## 3.2 Potential Health Effects

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### Immediate Hazards

INGESTION: Not expected to be harmful under normal conditions of use.  
INHALATION: Not expected to be harmful under normal conditions of use. However, overexposure may cause central nervous system effects. Also, if allowed to become airborne, may cause irritation of nose, throat and lungs.  
SKIN: May cause irritation on prolonged or repeated contact.  
EYES: Causes chemical burns.

#### 64-17-5 Ethanol

Can cause central nervous system depression. Signs and symptoms may include headache, dizziness, nausea, vomiting and drowsiness.

#### 108-95-2 Phenol

Can cause central nervous system effects. Signs and symptoms may include headache, dizziness, nausea, vomiting, motor difficulties and unconsciousness.

#### 108-46-3 Resorcinol

This chemical is slightly to moderately toxic by ingestion, inhalation and skin absorption. Signs of acute poisoning in rats include central nervous system stimulation, tremors and convulsions followed by depression and death, or complete recovery within 8-24 hours. Animal studies have further indicated that high acute doses have caused reversible damage to the thyroid as well as damage to the blood, spleen, liver, kidney and lungs. Since it is rapidly absorbed and rapidly eliminated from the body, there are no identified chronic or cumulative adverse effects.

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### Delayed Hazards

#### 64-17-5 Ethanol

Ingestion may cause liver damage.  
-- See Footnote

#### 108-95-2 Phenol

Can cause liver and kidney damage. Signs and symptoms of chronic poisoning may include vomiting, difficulty in swallowing, diarrhea, lack of appetite, jaundice, fatigue, bleeding or easy bruising and sometimes pain and swelling in the upper right abdomen, changes in urine output or dark urine, pain upon urination or in the lower back, or general edema. Can also cause cardiac damage evidenced by shortness of breath and in severe cases cardiac arrest. Preexisting medical conditions of the heart, kidney, liver, lung, eyes and skin may be aggravated by exposure.  
-- See Footnote

**50-00-0 Formaldehyde**

May cause cancer. OSHA regulates formaldehyde as a potential human carcinogen. See the OSHA Formaldehyde Workplace Standard at 29CFR 1910.1048. Rats chronically exposed to 14 ppm formaldehyde contracted nasal cancer. The National Toxicology Program (NTP) has listed formaldehyde as a probable human carcinogen. The International Agency for Research on Cancer (IARC) has concluded formaldehyde is carcinogenic to humans.

Safe handling and use instructions are provided in this MSDS and in the OSHA Formaldehyde Workplace Standard at 29CFR1910.1048. OSHA has identified 0.5 ppm as the "Action Level". Please review and understand the guidance contained in this MSDS and refer to the OSHA Formaldehyde Standard for regulatory requirements that may be applicable to your operation and use.

For further information and a review of various studies, go to [www.osha.gov/SLTC/formaldehyde](http://www.osha.gov/SLTC/formaldehyde), [www.iarc.fr](http://www.iarc.fr) and other authoritative websites.

May cause allergic skin reaction. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that preexisting respiratory and skin disorders may be aggravated by exposure.

Footnote: As of the date of issuance of this document, this material has not been listed by NTP, classified by IARC nor regulated by OSHA as a carcinogen.

**4. First Aid Measures**

<b>INGESTION:</b>	If accidentally swallowed, dilute by drinking large quantities of water. If the individual is drowsy or unconscious, do not give anything by mouth. Immediately contact poison control center or hospital emergency room for advice on whether to induce vomiting or for any other additional treatment directions.
<b>INHALATION:</b>	Remove to fresh air.
<b>SKIN:</b>	In case of irritation, flush with water.
<b>EYES:</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held apart during irrigation to ensure water contact with entire surface of eyes and lids. Call a physician.

**5. Fire Fighting Measures**

Flash point	54 °C (129 °F) Pensky-Martens Closed Cup ASTM D 93
Lower explosion limit	Not available
Upper explosion limit	Not available
Autoignition temperature	Not available

COMBUSTIBLE. Keep away from heat and flame.

**6. Accidental Release Measures**

Eliminate all ignition sources. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. For large spills, use water spray to disperse vapors and flush spill area. Prevent runoff from entering waterways or sewers. Use appropriate Personal Protective Equipment (PPE).

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## 7. Handling and Storage

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### 7.1 Handling

Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of the material from eyes, skin and clothing. Wash thoroughly after handling. Always use appropriate Personal Protective Equipment (PPE).

<b>INHALATION:</b>	Avoid prolonged or repeated breathing of vapor.
<b>SKIN:</b>	Avoid prolonged or repeated contact with skin and clothing.
<b>EYES:</b>	Do not get in eyes.

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### 7.2 Storage

Keep container closed.  
 Store in a cool, dry place.  
 Not harmed by freezing. If frozen, resin should be thawed slowly at room temperature and agitated thoroughly before use.

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## 8. Exposure Controls/Personal Protection

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### 8.1 Exposure Controls

**ENGINEERING CONTROLS:** The following exposure control techniques may be used to effectively minimize employee exposure: local exhaust ventilation, enclosed system design, process isolation and remote control in combination with appropriate use of personal protective equipment and prudent work practices. These techniques may not necessarily address all issues pertaining to your operations. We, therefore, recommend that you consult with experts of your choice to determine whether or not your programs are adequate.

If airborne contaminants are generated when the material is heated or handled, sufficient ventilation in volume and air flow patterns should be provided to keep air contaminant concentration levels below acceptable criteria.

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### 8.2 Personal Protection

Where air contaminants can exceed acceptable criteria, use NIOSH (42 CFR Part 84) approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminants in air in accordance with OSHA laws and regulations or other applicable standards or guidelines, including ANSI standards regarding respiratory protection. Use goggles if contact is likely. Wear impervious gloves as required to prevent skin contact.

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### 8.3 Exposure Guidelines

64-17-5		Ethanol	
ACGIH TLV	8-hr TWA	1,000 ppm	1,880 mg/m <sup>3</sup>
OSHA PEL		1,000 ppm	1,900

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		mg/m3		
<b>108-95-2</b>	<b>Phenol</b>			
ACGIH TLV	8-hr TWA	5 ppm	19 mg/m3	Skin
OSHA PEL	8-hr TWA	5 ppm	19 mg/m3	Skin
<b>108-46-3</b>	<b>Resorcinol</b>			
ACGIH TLV	8-hr TWA	10 ppm	45 mg/m3	
	STEL (15 min)	20 ppm	90 mg/m3	
OSHA PEL	None Established			
	Remanded TWA	10 ppm	45 mg/m3	1989 PEL remanded, but in effect in some states
	Remanded STEL	20 ppm	90 mg/m3	
<b>50-00-0</b>	<b>Formaldehyde</b>			
ACGIH TLV	Ceiling	0.3 ppm	0.37 mg/m3	A2 - Suspected Human Carcinogen; SEN
OSHA PEL	8-hr TWA	0.75 ppm	0.9 mg/m3	
	STEL (15 min)	2 ppm	2.5 mg/m3	

## 9. Physical and Chemical Properties

Appearance	Reddish brown clear liquid
Odor	Slight alcoholic
Odor threshold	Not available
Specific gravity	1.135 - 1.145
pH	7.5 - 7.9
Viscosity	150 - 250 cPs Brookfield
Solubility in water	Slightly
Octanol/water partition coefficient	Not available
Vapor pressure	Approx. 50 mm Hg @25 °C (77 °F)
Vapor density	Not available
Evaporation rate	Approx. 0.6 (Butyl Acetate = 1)
Boiling point, 760 mm Hg	Approx. 102 °C (216 °F)

## 10. Stability and Reactivity

Normally stable, but will polymerize at high temperatures with some evolution of heat.

### Incompatibilities:

Oxidizers, acids

### Decomposition products may include:

CO, CO<sub>2</sub>, aldehydes (including formaldehyde), particulate matter and other organic compounds.

### Hazardous polymerization:

May occur.

## 11. Toxicological Information

**INGESTION:** A similar product was found to have an LD<sub>50</sub> >0.5 g/kg when tested as described in 16 CFR Part 1500.3 (c)(1) and (2).

**INHALATION:** A similar product was found to be non-toxic by inhalation when tested

as described in 16 CFR Part 1500.3 (c)(1) and (2).

- SKIN ABSORPTION:** A similar product was found to be non-toxic dermally when tested as described in 16 CFR Part 1500.3 (c)(1) and (2).
- SKIN:** A similar product was not a primary irritant (primary skin irritation index less than 5.0/8.0) when tested as described in 16 CFR Part 1500.41.
- EYES:** A similar product was severely irritating when tested as described in 16 CFR Part 1500.42.

**64-17-5 Ethanol**

LC50: rat=20,000 mg/l/10 h (Sax)

LD50: Oral-rat= 7,060 mg/kg (Sax)

**108-95-2 Phenol**

LC50: rat=0.316 mg/l (RTECS)

LD50: Oral-rat= 414 mg/kg (Sax); Skin-rabbit= 850 mg/kg (Sax)

**108-46-3 Resorcinol**

LC50: Not available

LD50: Oral-rat= 301 mg/kg (Sax); Skin-rabbit= 3,360 mg/kg (Sax)

**50-00-0 Formaldehyde**

LC50: rat=0.59 mg/l (Sax)

LD50: Oral-rat= 800 mg/kg (Merck); Skin-rabbit= 270 mg/kg (Sax)

## 12. Ecological Information

No data for ecotoxicity has been found. Effects are expected to be minimal. Phenol-formaldehyde polymers have a very low rate of biodegradation. Bioaccumulation is expected to be minimal. Product is initially a mobile liquid which will solidify on aging. Unreacted monomer may be leached into ground water even after normal curing has occurred.

## 13. Disposal Considerations

Recover free liquid. Absorb residue and dispose of according to local, state/provincial, and federal requirements. Empty container: May contain explosive vapors. DO NOT cut, puncture or weld on or nearby.

## 14. Transport Information

### 14.1 U.S. Department of Transportation (DOT)

The data provided in this section is for information only and may not be specific to your package size. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

<b>Proper shipping name</b>	RESIN SOLUTION, flammable
<b>UN/NA number</b>	1866
<b>Class</b>	3
<b>Packing group</b>	III
<b>Label</b>	3
<b>RQ Ingredients</b>	Formaldehyde

### 14.2 Canadian Transportation of Dangerous Goods (TDG)

<b>Proper shipping name</b>	RESIN SOLUTION, flammable
<b>UN number:</b>	1866
<b>Class</b>	Class 3

Packing group III  
Label 3

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## 15. Regulatory Information (Selected Regulations)

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### 15.1 U.S. Federal Regulations

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#### OSHA Hazards Communication Standard 29CFR1910.1200

This material is a "health hazard" and/or a "physical hazard" as determined when reviewed according to the requirements of the Occupational Safety and Health Administration 29 CFR Part 1910.1200 "Hazard Communication" Standard.

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#### SARA Title III: Section 311/312

Immediate health hazard  
Delayed health hazard  
Fire hazard  
Reactivity hazard

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#### SARA Title III: Section 313 and 40 CFR Part 372

This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.

Phenol	108-95-2	5.09%
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#### TSCA Section 8(b) Inventory

All reportable chemical substances are listed on the TSCA Inventory. We rely on certifications of compliance from our suppliers for chemical substances not manufactured by us.

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### 15.2 Canadian Regulations

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#### Workplace Hazardous Materials Information System (WHMIS)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

Class B3  
Class D2B

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#### Canadian Environmental Protection Act (CEPA)

All reportable chemical substances are listed on the Domestic Substances List (DSL) or otherwise comply with CEPA new substance notification requirements.

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#### National Pollutant Release Inventory (NPRI)

This product contains the following chemical(s) subject to the reporting requirements of the Canadian Environmental Protection Act (CEPA) subsection 16(1), National Pollutant Release Inventory.

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## 16. Other Information

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### User's Responsibility

The OSHA Hazard Communication Standard 29CFR 1910.1200 and the Workplace Hazardous Materials Information System (WHMIS) require that the information contained on these sheets be made available to your workers. Educate and train your workers regarding OSHA and WHMIS precautions. Instruct your workers to handle this product properly. Consult with appropriate experts to guard against hazards associated with use of this product and its ingredients.

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### Disclaimer

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE, except that the product shall conform to contracted specifications, and that the product does not infringe any valid United States or Canadian patent. No claim of any kind shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

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