



MATERIAL SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

DESCRIPTION: CELLOBOND FRP RESIN J2027LV

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1. Chemical Product and Company Identification

DESCRIPTION: CELLOBOND FRP RESIN J2027LV
 PRODUCT CODE: 82413
 PRODUCT TYPE: Liquid Phenolic Resin
 APPLICATION: Composites

Manufacturer/Supplier Information

MSDS Prepared by:
 Borden Chemical UK Ltd.
 North Baddesley
 Southampton SO52 9ZB

Emergency Phone Number
 Poison Control Center
 1-800-228-5635 ext 261

For additional health, safety or regulatory information call 44-2380732131.

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
50-00-0 *Formaldehyde	1-5
108-95-2 *Phenol	5-10

3. Hazards Identification

3.1 Emergency Overview

Appearance: Free flow liquid
 Odor: Not available

WARNING!

Will burn.
 Causes chemical burns to eyes.
 Overexposure may cause central nervous system depression.

HMIS Rating

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

3.2 Potential Health Effects

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 depression. 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.

Phenol 108-95-2

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

Delayed Hazards

Formaldehyde 50-00-0

POTENTIAL CANCER HAZARD.

Rats chronically exposed to 14 ppm formaldehyde contracted nasal cancers. Based on animal data and limited epidemiological evidence, NTP and IARC have listed formaldehyde as a probable human carcinogen. OSHA regulates formaldehyde as a potential human carcinogen.

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

OSHA has identified 0.5 ppm as the "Action Level", 29CFR 1910.1048. Please refer to the OSHA Standard for guidance applicable to your specific operations.

Phenol 108-95-2

POSSIBLE BIRTH DEFECT HAZARD. May cause birth defects based on animal data. Has been toxic to the fetus in laboratory animals at doses non-toxic to the mother. An increased incidence of cleft palate has been reported in mice at maternally lethal doses and may be due to the conditions of stress. At excessive levels toxic to the maternal animal, toxicity and lethality to the newborn animal were observed.

Can cause liver damage.

Can cause kidney damage.

Can cause cardiac damage. Pre-existing heart or circulatory disorders may be aggravated by exposure.

Can cause bladder damage.

-- See Footnote C.

Delayed Hazards

Footnote C: 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

INGESTION: If accidentally swallowed, dilute by drinking large quantities of water. Immediately contact poison control center or hospital emergency room for any other additional treatment directions.

INHALATION: Remove to fresh air.

SKIN: In case of irritation, flush with water.

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held apart during irrigation to insure water contact with entire surface of eyes and lids. Call a physician.

5. Fire Fighting Measures

Flash point (Seta)	>200 F
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Autoignition temperature	Not available

Will burn.

In case of fire, use water spray, dry chemical, foam or CO2. Use water to keep fire-exposed containers cool.

6. Accidental Release Measures

Large quantities: Enclose with diking material to prevent seepage into natural bodies of water, then consult Borden, Inc. Small quantities: Soak up with absorbent material and remove to a chemical disposal area.

7. Handling and Storage

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.

INHALATION: Avoid prolonged or repeated breathing of vapor.

SKIN: Avoid prolonged or repeated contact with skin and clothing.

EYES: Do not get in eyes.

7.2 Storage

Keep container closed.

Keep under refrigeration; temperature should not exceed 50 F for maximum storage life.

8. Exposure Controls/Personal Protection

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.

8.2 Personal Protection

Where air contaminants can exceed acceptable criteria, use NIOSH/MSHA approved full facepiece respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminants in air in accordance with OSHA 29CFR 1910.1048(g) Respiratory Protection, OSHA 29CFR 1910.134 or other applicable standards or guidelines, including ANSI standards regarding respiratory protection. Wear chemical splash goggles or some other type of complete protection for the eye if contact is likely. Wear protective (impervious) gloves as required to prevent skin contact. Where high concentrations of hazardous ingredients may be present, such as in an emergency, full body protection should be worn.

Other protective equipment: Eye wash fountain, safety shower. Reusable protective clothing should be cleaned and ventilated after any formaldehyde contamination.

See OSHA 29CFR 1910.1048(h) Protective Equipment and Clothing and OSHA 29CFR 1910.1048(i) Hygiene Protection for other specific requirements based on the form of formaldehyde, the conditions of use and the hazards to be prevented.

8.3 Exposure Guidelines

Formaldehyde 50-00-0
ACGIH TLV: 0.3 ppm (0.37 mg/m³) Ceiling, A2 - See Appendix A
OSHA PEL: 0.75 ppm(0.9 mg/m³) TWA; 2 ppm(2.5mg/m³)15min STEL

8.3 Exposure Guidelines

Phenol 108-95-2
ACGIH TLV: Skin - 5 ppm (19 mg/m³) TWA
OSHA PEL: Skin - 5 ppm (19 mg/m³) TWA

9. Physical and Chemical Properties

Physical state	Liquid
Appearance	Free flow liquid
Color	Clear amber
Odor	Not available
Odor threshold	Not available
Specific gravity	1.125
pH	7.3-7.8
Freezing point	Not available
Solubility in water	50%
Octanol/water partition coefficient	Not available
Vapor pressure @ 25 C	16 mm Hg
Vapor density (air=1)	1.0
Evaporation rate (butyl acetate=1)	Not available
Boiling point, 760 mm Hg	116 C

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, CO₂, aldehydes (including formaldehyde), phenols and aromatic compounds including benzo[a]pyrene.

Hazardous polymerization:

Will not occur.

Other Hazards:

During processing, vapors of phenol, formaldehyde, alcohols, glycols or other solvents may be released.

11. Toxicological Information

INGESTION: A similar product was found to have an LD50 >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

11. Toxicological Information

1500.3 (c)(1) and (2).

SKIN: A similar product was found to be non-toxic dermally

ABSORPTION: 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.

Formaldehyde 50-00-0
LC50: rat=203 mg/m³ (RTECS)
LD50: orl-rat=0.8 g/kg (Merck); skn-rbt=0.27 g/kg (Sax)

Phenol 108-95-2
LC50: rat=316 mg/m³ (RTECS)
LD50: orl-rat=414 mg/kg; skn-rbt=850 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.

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.

All shipments regulated as:

Environmentally Hazardous Substances, Liquid, N.O.S.
(Formaldehyde), 9, UN3082, III

14.2 Canadian Transportation of Dangerous Goods (TDG)

Not determined.

15. Regulatory Information (Selected Regulations)

15.1 U.S. Federal Regulations

OSHA Hazard 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.

SARA Title III: Section 311/312

Immediate health hazard
Delayed health hazard

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.

Formaldehyde	50-00-0	2.50%
Phenol	108-95-2	9.99%

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 Borden.

15.2 Canadian Regulations

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 D, DIV 2A, 2B

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.

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.

Formaldehyde	50-00-0	2.50%
Phenol (and its salts)	108-95-2	9.99%

15.3 State Regulations**New Jersey Worker & Community RTK Act (NJSA 34:5A-1 et seq.)**

The listing of a chemical does not necessarily indicate it is hazardous.

Formaldehyde	50-00-0
Phenol	108-95-2
Sodium p-Toluenesulfonate	657-84-1
Water	7732-18-5
Phenol-Formaldehyde Copolymer	9003-35-4

16. Other Information**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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