



Material Safety Data Sheet

FOR INDUSTRIAL USE ONLY

Cascophen LT-5212

Revision Date 28-DEC-2011

1. Product and company identification

Product name Cascophen LT-5212
MSDS Number 000000104570
Product Type Phenol Resorcinol Formaldehyde Resin
Product use Wood Adhesives, Composites, Laminates or Related Board Products

Manufacturer, Importer, Supplier Momentive Specialty Chemicals Inc.
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Columbus OH 43215

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Print date 07-FEB-2013

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

For Emergency Transportation Information
CHEMTREC US Domestic (800) 424-9300
CHEMTREC International (703) 527-3887
CANUTEC CA Domestic (613) 996-6666

For additional health and safety or regulatory information, call 1 888 443 9466 .

Part of the CASCO® Brand of Adhesives and Resins from Momentive Specialty Chemicals

2. Hazards identification

Form Liquid
Odor Slight alcoholic
OSHA/HCS status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview DANGER !
COMBUSTIBLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE MIXTURES WITH AIR. CAUSES SEVERE RESPIRATORY TRACT BURNS. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES EYE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. INHALATION CAN CAUSE CENTRAL NERVOUS SYSTEM (CNS) EFFECTS.

Potential acute health effects

Inhalation	Can cause central nervous system (CNS) depression. Severely corrosive to the respiratory system. Can cause central nervous system (CNS) effects.
Ingestion	Can cause central nervous system (CNS) depression. May cause burns to mouth, throat and stomach.
Skin	May cause irritation on prolonged or repeated contact. May cause skin irritation.
Eyes	Severely irritating to eyes. Risk of serious damage to eyes. Direct contact with the eyes can cause irreversible damage, including blindness.

Potential chronic health effects

Chronic effects Contains material that can cause target organ damage. Signs and symptoms of chronic phenol 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.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Target organs Contains material which causes damage to the following organs: blood, kidneys, liver, heart, spleen, skin, eyes, central nervous system (CNS), thyroid, Review Section 2 and 11 for any additional assessments.

Over-exposure signs/symptoms

Inhalation Adverse symptoms may include the following: nausea or vomiting, respiratory tract irritation, coughing, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness, cyanosis, motor difficulties, convulsion, confusion,

Ingestion Adverse symptoms may include the following: nausea or vomiting, dizziness/vertigo, drowsiness/fatigue, headache, unconsciousness,

Skin No specific data.

Eyes Adverse symptoms may include the following: pain or irritation, watering, redness,

Medical conditions aggravated by over-exposure Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See section 11 for more detailed information on health effects and symptoms.

3. Composition/Information on ingredients

<u>Ingredient name</u>	<u>CAS number</u>	<u>WT %</u>
2/7/2013		2/10

Resorcinol	108-46-3	5.0 - 10.0
Phenol	108-95-2	5.0 - 10.0
Ethanol	64-17-5	1.0 - 5.0
Sodium Hydroxide	1310-73-2	1.0 - 5.0

*** Any applicable Canadian trade secret numbers will be listed in Section 15.*

4. First aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician. Get medical attention immediately.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first aid personnel	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. If it is suspected that dust, vapor, mist or gas are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Flammability of the product	Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
Extinguishing media	
Suitable	Use dry chemical, CO2, water spray (fog) or foam.
Not suitable	Do not use water jet.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed

containers cool.

Hazardous combustion products

Decomposition products may include the following materials: carbon oxides, metal oxide/oxides,

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Do not breathe dust, vapor, mist or gas.

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling)

equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Follow US NFPA 30, "Flammable & Combustible Liquids Code", or other national, state and local codes on safe handling of flammable liquids. Train workers in the recognition and prevention of hazards associated with the storage, handling and transfer of flammable liquids in the plant. Empty containers retain product residue and can be hazardous. Do not reuse container. Do not breathe dust, vapor, mist or gas.

Storage

Store in an area designated for storage of flammable liquids (See NFPA 30 and OSHA 29 CFR 1910.106). Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient name
Resorcinol

Occupational exposure limits

ACGIH TLV Time Weighted Average (TWA)
45 mg/m³ 10 ppm

ACGIH TLV Short Term Exposure Limit (STEL)
90 mg/m³ 20 ppm

Phenol

ACGIH TLV Time Weighted Average (TWA)
19 mg/m³ 5 ppm

OSHA PEL Time Weighted Average (TWA)
19 mg/m³ 5 ppm

Ethanol

ACGIH TLV Short Term Exposure Limit (STEL)
1,880 mg/m³ 1,000 ppm

OSHA PEL Time Weighted Average (TWA)
1,900 mg/m³ 1,000 ppm

Sodium Hydroxide

ACGIH TLV Ceiling Limit Value
2 mg/m³

OSHA PEL Time Weighted Average (TWA)
2 mg/m³

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures

Use only with adequate ventilation. Use process enclosures, local

exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Respiratory	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eyes	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical state	: Liquid
Color	: Clear, reddish-brown
Odor	: Slight alcoholic
Odor threshold	: Not available
pH	: Not available
Freezing Point	: Less than 0 °C(32 °F)
Boiling point	: Approx. 102 °C (216 °F)
Flash point	: 67 °C (153 °F) Pensky-Martens Closed Cup ASTM D 93
Evaporation rate	: Approx. 0.6 (n-Butyl acetate=1)
Flammable limits	
Upper:	: Not available
Lower:	: Not available
Vapor pressure	: Approx. 50 mm Hg @21 °C (70 °F)
Vapor density	: Not available

Relative density	:	Approx. 1.16
Solubility	:	Slightly
Partition coefficient: n-octanol/water	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
Typical % solids	:	Not available

Other information

Not applicable.

10. Stability and reactivity

Reactivity	Normally stable, but will polymerize at high temperatures with some evolution of heat.
Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Materials to avoid	Reactive or incompatible with the following materials: oxidizing materials, acids,
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Acute toxicity

Product name

Cascophen LT-5212

LD50 Oral	Rat	> 2,001 mg/kg Estimated.
LC50 Inhalation	Rat	> 2501 ppm/1 h Estimated.
LD50 Dermal	Rabbit	> 2,001 mg/kg Estimated.

Acute toxicity

Ingredient name

Resorcinol

LD50 Oral	Rat	301 mg/kg
LD50 Oral	Mouse	200 mg/kg
LD50 Dermal	Rabbit	3,360 mg/kg

Phenol

LD50 Oral	Rat	317 mg/kg
LD50 Oral	Mouse	270 mg/kg
LC50 Inhalation	Rat	0.316 mg/l/
LD50 Dermal	Rat	669 mg/kg
LD50 Dermal	Rabbit	630 mg/kg

Ethanol

LD50 Oral	Mouse	3,450 mg/kg
LD50 Oral	Rabbit	6,300 mg/kg
LD50 Oral	Guinea pig	5,560 mg/kg
LC50 Inhalation	Rat	20000 ppm/10 h
LC50 Inhalation	Mouse	39 mg/l/4 h

Sodium Hydroxide

LD50 Oral	Rat	500 mg/kg
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Conclusion/Summary

Resorcinol: 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.

Other Toxicological Information

Carcinogenicity

Classification

Ingredient name

Resorcinol

ACGIH Not classifiable as to its carcinogenicity to humans.
 IARC IARC Group 3, not classifiable as to carcinogenicity to humans
 NTP Not listed
 OSHA Not classified

Phenol

ACGIH Not classifiable as to its carcinogenicity to humans.
 IARC IARC Group 3, not classifiable as to carcinogenicity to humans
 NTP Not listed
 OSHA Not classified

Ethanol

ACGIH Confirmed animal carcinogen with unknown relevance to humans.
 IARC Not classified.
 NTP Not listed
 OSHA Not classified

Sodium Hydroxide

ACGIH Not classified
 IARC Not classified
 NTP Not listed
 OSHA Not classified

12. Ecological information

Environmental effects

No known significant effects or critical hazards.

Aquatic ecotoxicity

Ingredient name

Resorcinol

Fresh water	Acute LC50 > 100 mg/l/96 h	Rainbow trout,donaldson trout
Fresh water	Acute LC50 40 mg/l/96 h	Fathead minnow
Fresh water	Acute LC50 24 mg/l/96 h	Fathead minnow
Fresh water	Acute LC50 42 mg/l/96 h	Rainbow trout,donaldson trout
Fresh water	Acute LC50 > 100 mg/l/96 h	Fathead minnow

Other adverse effects

No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed

waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

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

International transport regulations

Regulatory information	UN/NA number	Proper shipping name	Classes/*PG	Reportable Quantity (RQ)
CFR	1993	COMBUSTIBLE LIQUID, N.O.S. (Phenol, Ethanol)	Class CBL III	Phenol

TDG Non-regulated

IMO/IMDG Non-regulated

*PG : Packing group

15. Regulatory information

US regulations

HCS Classification Combustible liquid, Corrosive material, Target organ effects

U.S. Federal regulations

SARA 311/312 Classification Immediate (acute) health hazard, Delayed (chronic) health hazard, Fire hazard

SARA 313 - Supplier Notification

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 (6.78%),

SARA 302 Extremely Hazardous Substances The following components are listed:
Phenol,

State regulations

Massachusetts RTK Substances The following components are listed: Resorcinol, Phenol, Ethanol, Sodium Hydroxide,

New Jersey RTK Hazardous Substances The following components are listed:
Sodium Hydroxide, Ethanol, Phenol, Resorcinol,

Pennsylvania RTK Hazardous Substances The following components are listed:
Sodium Hydroxide, Ethanol, Resorcinol, Phenol,

California Prop. 65: WARNING: This product contains a chemical known to the State of California to cause cancer. Ethanol - 64-17-5, Methyl Isobutyl Ketone - 108-10-1,

Canada

WHMIS (Canada)

Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).
Class E: Corrosive material

Canadian lists

Canadian NPRI: The following components are listed: Ethanol, Phenol,

International regulations

Chemical inventories

Australia inventory (AICS) Not determined.
 Canada inventory All components are listed or exempted.
 Japan inventory Not determined.
 China inventory (IECSC) Not determined.
 Korea inventory Not determined.
 New Zealand Inventory (NZIoC) Not determined.
 Philippines inventory (PICCS) Not determined.
 United States inventory (TSCA 8b) All components are listed or exempted.

16. Other information

**Hazardous Material
 Information System III
 (U.S.A.)**

Health : 3
 Flammability: 2
 Physical hazards : 0
 Chronic : *

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

Prepared by Product Safety & Regulatory Compliance Group, (614)225-4778
Date of issue 28-DEC-2011
Date of printing 07-FEB-2013
Version 5.0

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