

SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

Casco-Resin CR-5H

Section 1. Product and company identification

GHS product identifier : Casco-Resin CR-5H **MSDS Number** : 00000000387

Product type : Urea Formaldehyde Resin

Recommended use and restrictions

Material uses : Wood Adhesives, Composites, Laminates or Related Board Products

Manufacturer/Supplier/Impor

ter

Hexion Inc.

180 East Broad Street Columbus, Ohio 43215 USA

Contact person : 4information@hexion.com

Telephone : For additional health and safety or regulatory information, call

1 888 443 9466.

Emergency telephone number : 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

Part of the CASCO® Brand of Adhesives and Resins from Hexion Inc.

Section 2. Hazards identification

Classification of the substance or mixture (WHMIS 2015)

: ACUTE TOXICITY:inhalation - Category 4

EYE IRRITATION - Category 2B

RESPIRATORY SENSITIZATION - Category 1

SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 1B

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [respiratory tract, skin] - Category 2

GHS label elements

Hazard pictograms

Signal word : Danger

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Hazard statements

H332 Harmful if inhaled.

H320 Causes eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties

if inhaled.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H373 May cause damage to organs through prolonged or repeated

exposure. (respiratory tract, skin)

Precautionary statements

General : Not applicable.

Prevention : Obtain special instructions before use.

Do not handle until all safety precautions have been read and

understood.

Wear protective gloves. Wear eye or face protection. Wear protective clothing. Wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Do not breathe vapor.

Wash hands thoroughly after handling.

Contaminated work clothing should not be allowed out of the

workplace.

Response : Get medical attention if you feel unwell.

IF exposed or concerned:

Get medical attention.

IF INHALED:

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

If experiencing respiratory symptoms: Call a POISON CENTER or physician.

IF ON SKIN:

Wash with plenty of soap and water.

Take off contaminated clothing and wash it before reuse.

If skin irritation or rash occurs:

Get medical attention.

IF IN EYES:

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical attention.

Storage : Store locked up.

Disposal: Dispose of contents and container in accordance with all local,

regional, national and international regulations.

Other hazards which do not result

in classification

None known.

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Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% by weight	CAS number
Formaldehyde	1 - 2	50-00-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Skin contact

Ingestion

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.

Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortation.

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. Get medical attention. If necessary, call a poison center or physician. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms,

: Wash with plenty of soap and 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes

thoroughly before reuse.

avoid further exposure.

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. 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.

Indication of immediate medical attention and special treatment needed, if necessary

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Notes to physician

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments

Protection of first aid personnel

: No specific treatment.

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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.

Most important symptoms and effects, both acute and delayed

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Unsuitable extinguishing media

- : Use an extinguishing agent suitable for the surrounding fire.
- None known.

Specific hazards arising from the chemical

Hazardous thermal decomposition products

- : In a fire or if heated, a pressure increase will occur and the container may burst.
- Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides metal oxide/oxides

Special protective actions for firefighters 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.

Special protective equipment for fire-fighters

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

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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

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or air).

Methods and material for containment and cleaning up

Small spill

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

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 of SDS). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see section 8 of SDS). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. 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.

Section 8. Exposure controls/personal protection

Control parameters

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Occupational exposure limits

Ingredient name	Exposure limits
Formaldehyde	OSHA PEL (1993-06-30)
	TWA 0.75 ppm
	STEL 2 ppm
	ACGIH TLV (2000-03-01)
	CEIL 0.37 mg/m3 0.3 ppm
	Notes: Inhalation sensitizer Skin sensitizer

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. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls

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.

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.

Individual protection measures

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

: 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves

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cannot be accurately estimated.

Body protection : 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.

Other skin protection : Appropriate footwear and any additional skin protection measures

should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this

product.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that

meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper

fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid

Color : Opaque, white

Odor : slight formaldehyde

Odor threshold : Not available

pH : 7.4 - 7.9 @ 21 °C (70 °F)

Melting point/ Freezing point : Not determined

Boiling point : $102 \, ^{\circ}\text{C} \, (216 \, ^{\circ}\text{F})$

Flash point : Not determined

Burning time : Not available
Burning rate : Not available

Evaporation rate : 0.3 ((n-Butyl acetate=1))

Flammability (solid, gas) : Not available

Lower and upper explosive : Lower: Not applicable. (flammable) limits : Upper: Not applicable.

Vapor pressure : $22 \text{ mm Hg } @ 25 ^{\circ}\text{C} (77 ^{\circ}\text{F})$

Vapor density : Not available

Relative density : 1.2700 - 1.2900 @ 21 °C (70 °F)

Solubility: Not availableSolubility in water: Soluble

Partition coefficient: n- : Not available

octanol/water

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available **SADT** : Not available

Viscosity : Dynamic: 400 - 640 cPs (Brookfield)

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Kinematic: Not available

Other information

No additional information.

Section 10. Stability and reactivity

Reactivity: Hazardous polymerization may occur under certain conditions of

storage or use.

Chemical stability : The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will

not occur.

Conditions to avoid : Strong oxidizer,

Incompatible materials: Reactive or incompatible with the following materials:

oxidizing materials

acids

Hazardous decomposition products: Decomposition products may include the following materials:, carbon

monoxide, carbon dioxide, aldehydes (including formaldehyde), hydrogen cyanide, particulate matter, other organic compounds

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Formaldehyde				
	LD50 Oral	Rat	800 mg/kg	-
	LC50 Inhalation	Rat	0.578 mg/l	2 h
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	LD50 Oral	Rat	> 2,001 mg/kg	-
	LC50 Inhalation	Rat		4 h
	LD50 Dermal	Rabbit	> 2,001 mg/kg	-

Conclusion/Summary : Not available

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Formaldehyde	Skin -	Rabbit	2.5	20 hrs	-
	Erythema/E				
	schar				
	Skin -	Rabbit	3	20 hrs	-
	Edema				
	eyes -	Mouse	> 3		-
	Cornea				
	opacity				

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Conclusion/Summary

Skin:Not availableeyes:Not availableRespiratory:Not available

Sensitization

Conclusion/Summary

Skin: Not availableRespiratory: Not available

Mutagenicity

Conclusion/Summary : Not available

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Formaldehyde		-		
Remarks:	to be a human ca cancer and myel Cancer (IARC) of OSHA regulates OSHA Formaldo Standard"). Safi in the OSHA Sta hour time-weigh Please review ar to the OSHA Sta your operation a performed conce some of these st www.osha.gov/s server.niehs.nih.	arcinogen" with re- loid leukemia. The classifies formalde formaldehyde as ehyde Workplace handling and use andard. OSHA ha lited average ("TW and understand the landard for regulate and use. Many stu berning formaldehy udies and for furth SLTC/formaldehy gov; http://epa.go	espect to nasophary en International Age ehyde as "carcinog a potential human Standard at 29 CF en instructions are pussible identified 0.5 pp (A**) concentration guidance container or requirements the dies and other evaluated evaluated in the concentration goode; http://monograv/iris/subst/0419.htm.	phs.iarc.fr; http://ntp-

Conclusion/Summary : Not available

Reproductive toxicity

Conclusion/Summary : Not available

Teratogenicity

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Formaldehyde	Category 3		Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

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Product/ingredient name	Category	Route of exposure	Target organs
Formaldehyde	Category 2		respiratory tract skin

Aspiration hazard

Not available

Information on likely routes of

exposure

Not available

Potential acute health effects

Eye contact : Causes eye irritation.

Inhalation : Harmful if inhaled. May cause allergy or asthma symptoms or

breathing difficulties if inhaled.

Skin contact : May cause an allergic skin reaction.

Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

irritation watering redness

Inhalation : Adverse symptoms may include the following:

wheezing and breathing difficulties

asthma

Skin contact : Adverse symptoms may include the following:

irritation redness

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Long term exposure

Potential immediate effects: Not availablePotential delayed effects: Not available

Potential chronic health effects

Conclusion/Summary : Not available

General: May cause damage to organs through prolonged or repeated exposure.

Once sensitized, a severe allergic reaction may occur when

subsequently exposed to very low levels.

Carcinogenicity: May cause cancer. Risk of cancer depends on duration and level of

exposure.

Mutagenicity: No known significant effects or critical hazards.Teratogenicity: No known significant effects or critical hazards.

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Developmental effects Fertility effects No known significant effects or critical hazards.No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (vapors)	32.17 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
formaldehyde			
	Acute LC50 6.7 mg/l -	Fish - Striped bass	96 h
	Acute LC50 6.9 mg/l -	Fish - Zebra danio	6 d
	Acute No-observable-effect-	Fish - Medaka, high-	28 d
	concentration > 47.9 mg/l -	eyes	
	Acute EC50 5.8 mg/l Fresh water	Aquatic invertebrates.	2 d
		Water flea	
	Acute EC50 4.9 mg/l Fresh water	Aquatic plants - Algae	72 h
	Acute EC50 4.3 mg/l Fresh water	Aquatic plants - Algae	48 h
	Acute EC50 19 mg/l -	Micro-organism - Soil	3 h
		organisms	

Conclusion/Summary : Not available

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
		-		
Remarks:	Biodegradation is expected to be very slow.			

Conclusion/Summary : Not available

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Formaldehyde	0.35	< 1	low

Mobility in soil

Soil/water partition coefficient

(KOC)

: Not available

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

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Disposal methods

The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 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 UN/NA Proper shipping name Classes/*PG Reportable information number Quantity (RQ)

TDG Non-regulated

IMO/IMDG Non-regulated

IATA (Cargo) Non-regulated

*PG: Packing group

Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Canada

Canadian NPRI : The following components are listed: Formaldehyde

CEPA Toxic substances: The following components are listed: Formaldehyde

Canada inventory : All components are listed or exempted.

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International regulations

International lists

: Australia inventory (AICS): All components are listed or exempted.

Canada inventory: All components are listed or exempted.

Japan inventory: Not determined.

China inventory (IECSC): All components are listed or exempted.

Korea inventory: All components are listed or exempted.

New Zealand Inventory (NZIoC): All components are listed or exempted. Philippines inventory (PICCS): All components are listed or exempted. United States inventory (TSCA 8b): All components are listed or exempted.

Taiwan inventory (CSNN): All components are listed or exempted.

Section 16. Other information

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

Health	*	2
Flammability		1
Physical hazards		0

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.

Full text of abbreviated H

statements

Not applicable.

History

Date of printing: 06/01/2017Date of issue/Date of revision: 05/24/2017Date of previous issue: 05/18/2017

Version : 4.1

Prepared by : Product Safety Stewardship Key to abbreviations : ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

 $IATA = International \ Air \ Transport \ Association$

IBC = Intermediate Bulk Container

 $IMDG = International \ Maritime \ Dangerous \ Goods$

 $LogPow = logarithm\ of\ the\ octanol/water\ partition\ coefficient$

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973

as modified by the Protocol of 1978. ("Marpol" = marine pollution)

RID = The Regulations concerning the International Carriage of Dangerous Goods by

Rail

 $UN = United \ Nations$

References : Not available

Notice to reader

The information provided herein was believed by Hexion Inc. ("Hexion") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and

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