

P.O. Box 4980
The Woodlands, TX 77387-4980

8 am to 5 pm Phone: (800) 257-5547
24-Hour Emergency Phone: (800) 328-8501
International Emergency Phone: (409) 727-0831
Asia Pacific Emergency Phone: (65) 6336-6011

Effective Date: 2/18/10

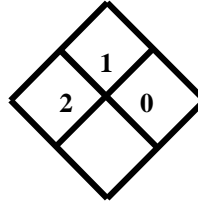
Material Safety Data Sheet

MSDS No: 5704

1. PRODUCT IDENTIFICATION

Trade Name: RenLam 5052

Chemical Family: Epoxy



NFPA RATING

Health:	2
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING

Synonyms:
RP 5052 Resin

Intended Use or Product Type: Epoxy Resin

2. COMPOSITION / INFORMATION ON INGREDIENTS

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS				CARCINOGEN STATUS			
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	2425-79-8	Oxirane, 2,2'-[1,4-Butanediylbis(Oxymethylene)]bis-Butanediol diglycidyl ether Common Name: Concentration 30.00 - 60.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	28064-14-4	Phenol, polymer with formaldehyde, glycidyl ether Epoxy Phenol Novolac Common Name: Concentration 60.00 - 90.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Causes skin and eye irritation. May cause allergic skin reaction.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

4. FIRST AID MEASURES



Effective Date: 2/18/10

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

Inhalation: Remove to fresh air. Seek immediate medical attention.

Eyes: Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

Overexposure Effects: Corrosive - causes skin and eye burns. May cause allergic skin reaction.

Medical Conditions Aggravated by Exposure: Skin and eye conditions.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point:	> 140°C (> 284 °F) (pmcc)
Flash Point Method Used:	DIN 51758
Flammable Limits in Air (Lower - % by volume):	Not established
Flammable Limits in Air (Upper - % by volume):	Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

7. HANDLING AND STORAGE

Signal Word: Warning!

Precautions: Corrosive - causes skin and eye burns. Can cause allergic skin reaction. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or mist. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: Use NIOSH approved organic vapor cartridge respirator when vapor/mist exposure is likely.



Effective Date: 2/18/10

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear
Odor:	Slight
Physical State:	Liquid
Solubility in Water:	Negligible
Viscosity:	1000 - 1500 mPa at 25°C (77 °F)
Vapor Pressure:	> 0.2 Pa at 20°C (68 °F)
Specific Gravity:	1.16 - 1.18 g/cm ³
Boiling Point:	> 200°C (> 392 °F)
Decomposition Temperature:	> 200°C (> 392 °F)
Evaporation Rate:	Not Determined
Vapor Density:	Not Determined
VOC:	0 g/L
pH:	~ 7 at 20°C (68 °F) (1:1 in water)

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Sensitization: Skin sensitizer.

Skin Irritation: Irritant.

Eye Irritation: Irritant.

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.

Effective Date: 2/18/10

14. TRANSPORT INFORMATION**DOT: Non-Bulk**

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.): epoxyphenol novolac resin
Hazard Class: 9
ID Number: UN 3082
Packing Group: PG III
Marine Pollutant: Marine Pollutant

IMDG: Non-Bulk

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.): epoxyphenol novolac resin
Hazard Class: 9
ID Number: UN 3082
Packing Group: PG III
Marine Pollutant: Marine Pollutant

IATA: Non-Bulk

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.): epoxyphenol novolac resin
Hazard Class: 9
ID Number: UN 3082
Packing Group: PG III
Marine Pollutant: Marine Pollutant

TDG: Non-Bulk

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.): epoxyphenol novolac resin
Hazard Class: 9
ID Number: UN 3082
Packing Group: PG III
Marine Pollutant: Marine Pollutant

Department of Transportation: Under 49 CFR 171.4 (c) NONBULK shipments of marine pollutants are not regulated for transport by motor vehicles, rail cars or aircraft. NONBULK shipments of marine pollutants are regulated when transported by vessel (ship).

15. REGULATORY INFORMATION**US Federal Regulations:**

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 304 - CERCLA: This product does not contain any chemicals regulated under Section 304 (40 CFR 302) as hazardous chemicals for emergency release notification ("CERCLA" List).

SARA Title III: Section 311/312 - Hazard Communication Standard (HCS): This product is not regulated under Section 311-312 (40 CFR 370).



Effective Date: 2/18/10

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain any chemicals for routine annual toxic chemical release reporting under Section 313 (40 CFR 372).

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

International Regulations:

Australian Inventory Status: This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status: This product contains only chemicals that are currently listed on the Canadian Domestic Substance List.

Canadian WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. D2B

European Inventory Status (EINECS): This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Japanese Inventory Status: This product contains only chemicals currently listed on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

State Regulations:

California Proposition 65: This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-to-Know: The following is required composition information:

Chemical Name: Phenol, polymer with formaldehyde, glycidyl ether
Common Name: Epoxy Phenol Novolac
CAS Number: 28064-14-4
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Oxirane, 2,2'-[1,4-Butanediylbis(Oxymethylene)]bis-
Common Name: Butanediol diglycidyl ether
CAS Number: 2425-79-8
Comment: Not on Pennsylvania Hazardous Substance List

16. OTHER INFORMATION

MSDS No:	5704
Reason Issued:	2/10 update DOT
Approved By:	Matt Austin
Title:	EHS Chemist

Other Information: DLW (D10020030) [D24]



Effective Date: 2/18/10

Disclaimer: The information and recommendations contained herein are based upon tests in controlled laboratory conditions, are believed to be correct, and are provided for the sole purpose of hazard communication as part of Huntsman's product safety program. This product has not been tested for, and therefore is not recommended or suitable for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended or likely, or for uses for which implantation within the human body is intended, and Huntsman assumes no liability for any such uses.

The information and recommendations contained herein are not intended to constitute performance information concerning the product, which is available in separate technical data sheets available from Huntsman upon request. Users are urged, and are urged to urge others who may come in contact with the product, to obtain and consult data sheets prior to purchase, use, transportation or storage of the product.

HUNTSMAN MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE. HUNTSMAN'S LIABILITY IS STRICTLY LIMITED TO REIMBURSEMENT OF BUYER'S PURCHASE PRICE, OR IN HUNTSMAN'S DISCRETION REPLACEMENT, OF THE PRODUCT IN RESPECT OF WHICH SUCH CLAIM IS MADE. HUNTSMAN'S LIABILITY IS STRICTLY LIMITED BY LEGAL NOTICES IN TECHNICAL DATA SHEETS, PRODUCT LITERATURE, AND/OR SALE DOCUMENTS. The foregoing DISCLAIMERS and LIMITATION OF LIABILITY supercede inconsistent or contradictory provisions in Buyer's documents.

USER SHOULD CONSULT A LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENTAL AGENCY TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT. HUNTSMAN DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.



P.O. Box 4980
The Woodlands, TX 77387-4980

8 am to 5 pm Phone: (800) 257-5547
24-Hour Emergency Phone: (800) 328-8501
International Emergency Phone: (409) 727-0831
Asia Pacific Emergency Phone: (65) 6336-6011

Effective Date: 7/24/09

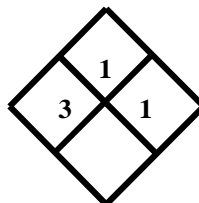
Material Safety Data Sheet

MSDS No: 5822

1. PRODUCT IDENTIFICATION

Trade Name: Ren 5052

Chemical Family: Amine



NFPA RATING

Health:	3
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING

Synonyms:

Hardener HY 5052
RP 5052 Hardener

Intended Use or Product Type: Amine hardener

2. COMPOSITION / INFORMATION ON INGREDIENTS

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS				CARCINOGEN STATUS			
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	2855-13-2	Cyclohexanemethanamine, 5-Amino-1,3,3-Trimethyl-Isophorone diamine Common Name: Concentration: 30.00 - 60.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	6864-37-5	Cyclohexanamine, 4,4'-methylenebis[2-methyl-Cycloaliphatic diamine Common Name: Concentration: 30.00 - 60.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	69-72-7	Benzoic acid, 2-hydroxy-Salicylic acid Common Name: Concentration: 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	90-72-2	Phenol, 2,4,6-tris[(dimethylamino)methyl]- Common Name: Concentration: 1.00 - 5.00 % by wt	NE	NE	NE	NE	TLV 5 ppm	NR	NR	NR



NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Highly toxic by inhalation. Toxic by dermal contact or ingestion. Corrosive. Severe eye, skin and respiratory irritant.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

Acute Exposure: Corrosive. Causes skin and eye burns.

Chronic: Overexposure may have effects on kidney and nervous system.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

Inhalation: Remove to fresh air. Seek immediate medical attention.

Eyes: Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

Overexposure Effects: Corrosive - causes eye burns. Causes skin irritation. May cause allergic skin and respiratory reactions.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point: > 110°C (> 230 °F)

Flash Point Method Used: DIN 51758

Flammable Limits in Air (Lower - % by volume): Not established

Flammable Limits in Air (Upper - % by volume): Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

Effective Date: 7/24/09

7. HANDLING AND STORAGE

Signal Word: Danger! Corrosive. Toxic.

Precautions: Highly toxic by inhalation. Toxic by dermal contact or ingestion. Corrosive. Severe eye, skin and respiratory irritant.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: Use NIOSH approved organic vapor cartridge respirator when vapor/mist exposure is likely.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear
Color:	Amber
Odor:	Amine
Physical State:	Liquid
Solubility in Water:	Moderate
Vapor Pressure:	Not Determined
Specific Gravity:	0.94 (water = 1)
Boiling Point:	Not Determined
Evaporation Rate:	Not Determined
Vapor Density:	Not Determined
VOC:	13.95 g/L
pH:	Not Determined

Percent Volatile: Negligible.

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Printed: 5/20/2010

Page 3 of 3

Distributed By
Freeman Manufacturing & Supply Co.
www.freemansupply.com 800-321-8511

Effective Date: 7/24/09

Acute Oral Effects (LD50): Cyclohexanamine, 4,4'-methylenebis[2-methyl- = 320 - 460 mg/kg (rat)**Acute Dermal Toxicity (LD50):** Cyclohexanamine, 4,4'-methylenebis[2-methyl- = 200 - 400 mg/kg (rabbit)**Inhalation Toxicity (LC50):** Cyclohexanamine, 4,4'-methylenebis[2-methyl- = 0.42 mg/l (rat) (4 hr.)**Sensitization:** Possible in susceptible individuals.**Skin Irritation:** Corrosive. Causes burns.**Eye Irritation:** Corrosive. Causes burns.**12. ECOLOGICAL INFORMATION****13. DISPOSAL CONSIDERATIONS****Waste Disposal Method:** Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.**14. TRANSPORT INFORMATION****DOT: Non-Bulk**

Proper Shipping Name:	Corrosive liquids, toxic, n.o.s.
Technical Shipping Name (If n.o.s.):	Cycloaliphatic diamine, Isophorone diamine
Hazard Class:	8 (6.1)
ID Number:	UN 2922
Packing Group:	PG II
Label:	Corrosive & Toxic

IMDG: Non-Bulk

Proper Shipping Name:	Corrosive liquids, toxic, n.o.s.
Technical Shipping Name (If n.o.s.):	Cycloaliphatic diamine, Isophorone diamine
Hazard Class:	8 (6.1)
ID Number:	UN 2922
Packing Group:	PG II
Label:	Corrosive & Toxic

IATA: Non-Bulk

Proper Shipping Name:	Corrosive liquids, toxic, n.o.s.
Technical Shipping Name (If n.o.s.):	Cycloaliphatic diamine, Isophorone diamine
Hazard Class:	8 (6.1)
ID Number:	UN 2922
Packing Group:	PG II
Label:	Corrosive & Toxic

TDG: Non-Bulk

Proper Shipping Name:	Corrosive liquids, toxic, n.o.s.
Technical Shipping Name (If n.o.s.):	Cycloaliphatic diamine, Isophorone diamine
Hazard Class:	8 (6.1)
ID Number:	UN 2922
Packing Group:	PG II
Label:	Corrosive & Toxic



Effective Date: 7/24/09

15. REGULATORY INFORMATION**US Federal Regulations:**

Occupational Safety and Health Act (OSHA): This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.

Resource Conservation and Recovery Act (RCRA): This product is not considered to be a P or U listed hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 304 - CERCLA: This product does not contain any chemicals regulated under Section 304 (40 CFR 302) as hazardous chemicals for emergency release notification ("CERCLA" List).

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain any chemicals for routine annual toxic chemical release reporting under Section 313 (40 CFR 372).

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

International Regulations:

Australian Inventory Status: This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status: This product contains only chemicals that are currently listed on the Canadian Domestic Substance List.

Canadian WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations .D1B, D2A, E

European Inventory Status (EINECS): This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Japanese Inventory Status: This product contains only chemicals currently listed on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

State Regulations:

California Proposition 65: This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-to-Know: The following is required composition information:

Chemical Name: Cyclohexanamine, 4,4'-methylenebis[2-methyl-

Common Name: Cycloaliphatic diamine

CAS Number: 6864-37-5

Comment: Not on Pennsylvania Hazardous Substance List



Effective Date: 7/24/09

Chemical Name: Cyclohexanemethanamine, 5-Amino-1,3,3-Trimethyl-
Common Name: Isophorone diamine
CAS Number: 2855-13-2
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Phenol, 2,4,6-tris[(dimethylamino)methyl]-
Common Name: 2,4,6-tris(Dimethylaminomethyl)phenol
CAS Number: 90-72-2
Comment: Not on Pennsylvania Hazardous Substance List

16. OTHER INFORMATION

MSDS No: 5822
Reason Issued: 7/09 update transport -1/07 change tech
ship names
Approved By: Matt Austin
Title: EHS Chemist

Other Information: S/ - / KC/ - (S10020830) [S10]

Disclaimer: The following supercedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled or lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.