

PRODUCT NAME(S): TAP 4-1 Super Hard Epoxy Hardener

SECTION 1 – IDENTIFICATION

Manufacturer's Info:
Rhino Linings Corporation
9747 Businesspark Avenue
San Diego, CA 92131

Product name:
Chemical Name

Rhino 3102 Epoxy Hardener
Epoxy Hardener

Information phone: (858) 450 0441
Emergency contact: CHEMTREC (800) 424 9300

SECTION 2 – HAZARD(S) IDENTIFICATION

OSHA Hazard Communication Standard:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

GHS-Label Elements:

Signal Word:
Danger

Pictogram(s):



GHS 08



GHS 05



GHS 06

Classification of the substance or mixture:

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Acute Toxicity, Inhalation	3	H331	Toxic if inhaled
Skin corrosion	2	H312	Harmful in contact with skin
Skin irritation	2	H315	Causes skin irritation
Skin sensitization	1	H317	May cause an allergic skin reaction
Serious eye damage / Eye irritation	1	H318	Causes serious eye damage
Germ Cell mutagenicity	2	H341	Suspected of causing genetic defects
Specific target organ toxicity-repeat exposure	2	H372	May cause damage to organs through prolonged or repeated exposure

Precautionary Statements:

Prevention:	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P280	Wear eye protection/face protection.
	P280c	Wear protective gloves/clothing.
	P260	Do not breathe mist, dusts, fumes, gas, vapors or spray.
	P270	Do not eat, drink or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.
	P264	Wash exposed area with plenty of water and soap thoroughly after handling.
	P281	Use personal protective equipment as required.
	Response:	P302 + P352
P304 + P340		IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333 + P313		If skin irritation or rash occurs: Get medical advice/attention.
P310		Immediately call POISON Center/doctor.
P362		Take off contaminated clothing and wash before reuse.
P305 + P351 + P338		IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313		If eye irritation persists: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/attention.	
P314	Get medical advice/attention if you feel unwell.	
Storage:	P403 + P233	Store in well-ventilated place. Keep container tightly closed.
	P405	Store locked up.
Disposal:	P501	Dispose of contents/container to hazardous or special waste collection point in accordance with local/regional/national/international regulations.

Hazards not otherwise classified:

Keep away from heat and sources of ignition

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Severe respiratory irritant.
Moderate skin irritant.
Severe eye irritant.
May cause sensitization by skin contact

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Concentration, %
Teta, reaction products with phenol / formaldehyde	32610-77-8	500-083-8	55-65
Triethylenetetramine	112-24-3	203-950-6	15-20
Phenol	108-95-2	203-632-7	15-20

SECTION 4 – FIRST-AID MEASURES**Description of First Aid measures:**

- Inhalation:** Move to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory problems, seek medical attention. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Skin:** Wash material off of the skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes immediately and wash them before reuse. Get medical advice/attention if irritation occurs.
- Eye:** Rinse cautiously with water for several minutes, especially under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Do not rub eyes in order to prevent corneal injury. Get medical advice/attention if eye irritation persists.
- Ingestion:** Remove the exposed person to fresh air and keep at rest in a position comfortable for breathing. Remove dentures if any. Rinse mouth thoroughly with water and then give 60 to 240 mL (2 to 8 oz) of water to drink. 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. 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. Never induce vomiting or give anything by mouth if the person is unconscious or having convulsions.

Most important symptoms/effects, acute and delayed: See Section 11 for more details.

General advice for First Aid responders: No action should be taken involving any personal risk or without suitable training. If potential for exposure exist refer to Section 8 for specific personal protective equipment. Show this SDS to physician.

Note to physician: Specific antidotes or neutralizers do not exist. Treatment should be supportive and based on the judgment of the physician in response to the reaction of the patient. Recommended medical monitoring for at least 24hours.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire. Alcohol-resistant foam, Carbon dioxide (CO₂), Dry Chemical, Dry sand or limestone power are recommended.

Unsuitable extinguishing media: Do Data Available

Specific hazards arising from the chemical: This product is non-flammable and non-combustible. Containers at risk from fire should be cooled with water spray and, if possible, removed from the danger area. Hazardous combustion products: Ammonia gas. May generate toxic nitrogen oxide gases. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes.

Special Protective Equipment and Precautions for fire-fighters: Wear NIOSH or OSHA approved self-contained breathing apparatus in positive pressure mode with full face piece and full protective gear. Isolate the scene by removing all persons from the incident area. No action should be taken involving any personal risk or without suitable training.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary and unprotected personnel from entering. Use self-contained breathing apparatus and chemical protective clothing. Wear suitable protective clothing, gloves, and eye/face protection. Evacuate personnel to safe areas. Do not touch or walk through spilled material; spilled material may cause a slipping hazard.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Inform the relevant authorities if the product has caused environmental pollution. See Section 12 for more details.

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Methods and materials for containment and cleaning up: Remove mechanically; cover the remainder with non-combustible absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth). Following absorption, transfer into properly labeled chemical waste containers. If necessary, repeat application of absorbent material until all liquid has been removed from the surface. Wash the spill site with soap and water. Cover container and remove from work to a well ventilated area. Properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations. For major spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Wash spillages into an effluent treatment plant or contain and collect with an absorbent material as described in the previous paragraph. For minor spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly with soap and water to remove residual contamination.

Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, see Section 1 for the Emergency contact; for further disposal measures, see Section 13.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling: Do not use nitrosating agents in formulation containing this product. Suspected cancer-causing nitrosamines could be formed. Emergency showers and eye wash stations should be readily accessible. Do NOT breathe vapors and mists. Avoid contact with skin and eyes. Wear appropriate respiratory, eye and skin protection. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10 for details), food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed. Keep out of the reach of children. Do not store near acids.

Storage stability: Stable under normal conditions. Do not store in reactive metal containers.

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200. Employees and consumers should be warned of health risks associated with product use. See Section 8 for additional information on hygiene measures.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters/Occupational exposure limit values: Not available for mixture. Results for components are listed in Section 15.

Appropriate engineering controls: Good local and general ventilation should be sufficient to control worker exposure to airborne contaminants below recommended exposure limits. Local exhaust may be required in some areas.

Personal protective equipment:

Eye/face protection:

When directly handling the product, chemical goggles are required. Contact lenses should not be worn when working with chemicals.

Skin/body protection:

Impervious, waterproof, abrasion and alkali-resistant such as Neoprene, PVC disposable gloves, Butyl-rubber or Nitrile gloves should be worn always when working with this product. Do not rely on barrier creams in place of impervious gloves. Do not get product inside gloves.

Body should be covered with appropriate clothing (apron, arm covers or full body suit) depending on the task being performed and the risks involved. Protective clothing should be selected and used in accordance with “Guidelines for the Selection of Chemical Protective Clothing” published by ACGIH. Remove clothing and protective equipment that becomes saturated with the product and immediately wash exposed areas of the body. Wash contaminated clothing before reuse. Store work clothing separately. Appropriate footwear should be also selected based on the task being performed and the risks involved.

Respiratory protection:

Use properly fitted, particulate filter 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 assigned protection factor of the selected respirator.

Additional Protective Measures: Educate and train employees in safe handling of this product. Follow all label instructions. As a general hygiene practice, wash hands and face after use. Clean water should always be readily available for emergency skin and eye washing. Use administrative controls such job rotation to supplement engineering controls. Emergency eyewash fountains and safety shower should be in close proximity as a matter of good practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Viscous amber liquid
Odor:	Phenolic
Odor threshold:	Not available
pH:	~10
Melting point/ freezing point:	Not available / 0°C
Initial boiling point and boiling range:	>230°C (>446 °F)

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Flash point:	135.56°C (276 °F)
Evaporation rate:	Not available
Flammability (solid, gas):	Not available
Upper/ lower flammability or explosive limits:	Not available
Vapor pressure:	<1.00 mmHg at 70 °F
Vapor density:	Not available
Relative density:	1.08 (water =1)
Solubility (water):	Not available
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Product will not undergo hazardous polymerization. Based on its structural properties the product is not classified as oxidizing.

Chemical stability: Stable under recommended storage conditions.

Conditions to avoid: Do not freeze. To avoid thermal decomposition, do not overheat.

Incompatible materials: Strong acids or oxidizing agents (strong acids and bases; halogenated compounds), metal alloys, caustics, Oxidizers, and epoxy in an uncontrolled condition. Reactive metals (e.g. sodium, calcium, zinc, etc.), materials reactive with hydroxyl compounds. CAUTION! N-Nitrosamines, many of which are known to the potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrates or atmospheres with high nitrous oxide concentrations.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced. In fire conditions, depending on temperature, air supply and presence of other materials, decomposition products can include, but are not limited to Nitric acid, Nitrogen oxides (NOx), Nitrogen Oxide can react with water vapors to form corrosive nitric acid. Carbon monoxide, Carbon dioxide (Co2), and aldehydes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin and Eye Contact, Inhalation and Ingestion.

Symptoms of exposure:

Acute toxicity:

Oral: LD50 (rat): >2,200 mg/kg.

Dermal: Prolonged or repeated contact may cause skin irritation with local redness.

LD50 (rabbit): >1,000 mg/kg (calculation method)

Inhalation: May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Skin corrosion / irritation:

May cause skin irritation if not removed accordingly. Adverse symptoms may include irritation and redness and/or sensitization.

Serious eye damage / eye irritation:

May cause severe eye irritation.

Specific target organ toxicity, single exposure:

Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: sore throat, Liver disorders (such as jaundice or liver enlargement), Kidney disorders (such as edema, or proteinuria), Asthma, adverse respiratory effects (such as cough, tightness of chest or shortness of breath), skin disorders and allergies, adverse skin effects (such as rash, irritation, or corrosion), adverse eye effects (such as conjunctivitis, or corneal damage), eye disease.

Aspiration hazard: Not an aspiration hazard.

Chronic toxicity:

Respiratory and Skin Sensitizer:

No data available.

Germ cell mutagenicity:

Results from a battery of short term genotoxicity tests on this material or its components indicate mutagenic activity.

Carcinogenicity:

This product contains no listed carcinogens according to IARC, ACGIH, NTP and or OSHA in concentration of 0.1 percent or greater.

Reproductive toxicity:

No data available.

Specific target organ toxicity, repeated exposure:

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Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: sore throat, Liver disorders (such as jaundice or liver enlargement), Kidney disorders (such as edema, or proteinuria), Asthma, adverse respiratory effects (such as cough, tightness of chest or shortness of breath), skin disorders and allergies, adverse skin effects (such as rash, irritation, or corrosion), adverse eye effects (such as conjunctivitis, or corneal damage), eye disease.

Medical conditions aggravated by overexposure:

In some cases this could result in skin sensitization.

Exposure Limit(s)

Triethylenetetramine	Time Weighted Average (TWA): WEEL	1ppm	6mg/m3
Phenol	Time Weighted Average (TWA): ACGIH	5 ppm	-
Phenol	Recommended exposure limit (REL): NIOSH	5 ppm	19 mg/m3
Phenol	Ceiling Limit Value and Time Period (if spicified): NIOSH	15.6 ppm	60 mg/m3
Phenol	Permissible exposure limit: OSHA Z1	5 ppm	19 mg/m3
Phenol	Time Weighted Average (TWA): OSHA Z1	5 ppm	19 mg/m3
Phenol	Time Weighted Average (TWA) Permissible Exposure Limit (PEL): US CA OEL	5 ppm	19 mg/m3
Phenol	Time Weighted Average (TWA) : TN OEL	5 ppm	19 mg/m3

Toxicity test results: Not available for mixture.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Phenol EC50(48 h): 4-7 mg/l Species, Daphnia

Persistence and degradability: Not readily biodegradable by OECD criteria.

Biodegradability: No data available on product itself.

Bioaccumulative potential: No data available on product itself.

Bioaccumulation-Compnents

Phenol: Low bioaccumulation potential.

Mobility in soil: Not known.

Other adverse effects: Not known.

Ecotoxicity test results: Not available for the mixture.

SECTION 13 – DISPOSAL CONSIDERATIONS

Product Disposal: The generation of waste should be avoided or minimized wherever possible. If product becomes a waste, it does not meet criteria of hazardous waste as defined in 40 CFR 261, Subpart C and D. Do not discharge into sewer system. Spill cleanup residues may still be subject to RCRA storage and disposal requirements. Dispose waste in compliance with local, state and federal regulations via licensed waste disposal contractor.

Container disposal: Even after emptying, container may retain residues. Containers should be completely emptied and safely stored until appropriately reconditioned or disposed through licensed contractor in accordance with government regulation. This material and its container must be disposed of in a safe way.

SECTION 14 – TRANSPORT INFORMATION

Land transport, U.S. DOT: Non-regulated

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Sea transport (IMO- IMDG): Non-regulated

Air transport, IATA/ICAO: Non-regulated

SECTION 15 – REGULATORY INFORMATION

U.S. Regulations:

OSHA HCS: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29CFR 1910.1200.

TSCA Regulations:

All components of this product are listed or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

EPCRA Section 302 (40 CFR Part 355) (Emergency Response Planning, Extremely Hazardous Substance):

Phenol is reportable at 1000Lbs. and Threshold planning quantity pounds are 500/10,000 lbs..

EPCRA Section 304 (40 CFR Part 355) (Emergency Release Notification Requirements):

Phenol is listed as Extremely Hazardous.

EPCRA Sections 311 & 312 (Hazardous Chemical Inventory Reporting, Hazard Categories):

Acute Health Hazard, Chronic Health Hazard, Fire

EPCRA Section 313 (40 CFR Part 372) (Toxic Chemical Release Inventory Reporting):

Phenol, CAS # 108-95-2, 1.0% de minimus concentration.

CERCLA Sections 102-103 (40 CFR Part 302) (Hazardous Substances Release Notification):

Phenol is subject to the reporting (1,000 lbs.)

Clean Air Act:

- Ozone Depleting Substances (ODS): This product does not contain and is not manufactured with ozone depleting substances.
- Hazardous Air Pollutants, OSHA, Section 112(b), Table Z-1 and Table Z-3:

Clean Water Act:

- Section 307(a) (Toxic pollutants): Phenol is listed.
- Section 311(b)(2): Table 116.4A (Hazardous chemicals) / Table 117.3 (RQ): Phenol is listed.

NFPA rating: Health: 4 Fire: 2 Reactivity: 0 Special: 0

HMIS rating: Health: 3 Flammability: 2 Physical hazard: 0

State Regulations:

California Prop. 65 Components:

To the best of our knowledge, this product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, as levels which would require a warning label under the statute.

Massachusetts New Jersey or Pennsylvania Right to Know Substance Lists:

This product contains Phenol, CAS # 108-95-2 substance known to the State(s) of Massachusetts (Extrordinarily hazardous), New Jersey (mutagen) or Pennsylvania (Environmental hazard) to cause cancer, birth defects or other reproductive harm, as levels which would require a warning label under the statute.

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

Phenol-Hazardous

Massachusetts Right to Know Extraordinary Hazardous Substance Lists:

Phenol-Hazardous

Instruction: for regulatory information on components of this mixture, check the appropriate state websites.

International Regulations/Inventories:

No data available.

SECTION 16 – OTHER INFORMATION

LEGEND

GHS	Globally Harmonized System
CAS	Chemical Abstracts Services
EC	European Community
EPA	Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute of Occupational Safety and Health
PEL	Permissible Exposure Limits
TLV	Threshold Limit Value
REL	Recommended Exposure Limit
TWA	Time-Weighted Average
STEL	Short-term exposure limit
HEPA	High Efficiency Particulate Air

IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
STOT, SE	Specific Target Organ Toxicity following Single Exposure
STOT, RE	Specific Target Organ Toxicity following Repeated Exposure
DOT	Department of Transportation
IMDG	International maritime dangerous goods code
IATA, ICAO	International Air Transport Association, International Civil Aviation Organization
TSCA	Toxic Substances Control Act
EPCRA	Emergency Planning and Community Right-to-Know Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
RQ	Reportable Quantity
DSL	Domestic Substance List
WHMIS	Workplace Hazardous Materials Information System

Latest revision date: October 16, 2017 – Add GSH label elements and Signal words

Date of the previous revision: March 19, 2015, changed format

Disclaimer: The data set forth in this sheet are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. Rhino Linings Corporation makes no warranty with respect to the accuracy of the information provided by their suppliers, and disclaims all liability of reliance thereof.