PRODUCT NAME(S): Concrete Polymer Powder

SECTION 1 – IDENTIFICATION

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

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

Product name: **Concrete Polymer Powder**

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:** WARNING

Pictogram(s):

GHS 08 GHS 07

Classification of the substance or mixture:

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Skin corrosion / irritation	2	H315	Causes skin irritation
Serious eye damage / Eye irritation	2A	H319	Causes serious eye irritation
Carcinogenicity	2	H351	Suspected of causing cancer by inhalation
Specific target organ toxicity, repeated exposure	2	H373	May cause lung damage through prolonged or repeated exposure by inhalation

Precautionary Statements:

Prevention:	P201	Obtain special instruction before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P281	Use personal protective equipment as required.
	P260	Do not breathe dusts.
	P264	Wash exposed area with plenty of water and soap thoroughly after handling.
Response:	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P332 + P313	If skin irritation occurs: Get medical advice/attention.
	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.
	P362	Take off contaminated clothing and wash before reuse.
	P308 + P313	IF exposed or concerned: Get medical advice/attention.
Storage:	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: Combustible dust.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Concentration, %
Polyvinyl Alcohol	25213-24-5	Not available	10 – 20
Hydrated Aluminum Silicate (Kaolin)	1332-58-7	310-194-1	10 – 20
Titanium Dioxide	13463-67-7	236-675-5	0.1 – 1

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.

Skin: Wash material off of the skin with plenty of soap and water. Remove contaminated clothing and shoes and wash them before reuse. Get medical advice/attention if irritation develops or persists.

Eye: Immediately rinse 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 develop or persists.

Ingestion: Move to fresh air and keep at rest in a position comfortable for breathing. Remove dentures if any. Rinse mouth thoroughly with water and then drink 60 to 240 mL (2 to 8 oz). Get medical advice/attention if symptoms occur.

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

General advice for First Aid responders: 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 24 hours.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media: Do not use water jet.

Specific hazards arising from the chemical: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Hazardous combustion products: carbon, silica and metal oxides, organic acids, aldehydes, alcohols, etc.

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.

Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Ensure adequate ventilation/exhaust extraction. Avoid breathing dust during clean up. Use protective equipment as described in Section 8.

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

Methods and materials for containment and cleaning up: Move containers from spill area. Avoid dust generation. Do not dry sweep. Use approved industrial vacuum cleaner for removal. Do not use compressed air for cleaning purposes. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Properly dispose of the waste material in accordance with existing federal, state and local regulations.

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: Avoid generating and do not breathe dust. Do not rely on your sight to determine if dust is in the air. Use adequate ventilation and dust collection methods to keep airborne levels below the exposure limits. Maintain and test ventilation and dust collection equipment. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Take precautionary measures against static discharges. Use all available work practices to control dust exposures, such as water sprays. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Avoid breakage of bagged material or spills of bulk material. Wear appropriate respiratory, eye and skin protection. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Hands and/or face should be washed before eating, drinking and smoking and at the end of the shift. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Store in a dry, cool and well-ventilated area, protected from direct sunlight and away from incompatible materials (see Section 10 for details), food and drink.
Store bags to avoid accidental tearing, breaking, or bursting. Avoid windblown dust by shielding or covering outdoor stockpiles. Protect from atmospheric moisture.

Storage stability: Stable under normal conditions.

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 and wet methods 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 liquid product, eye protection is required. Examples of eye protection include safety glasses and goggles. Contact lenses should not be worn when working with chemicals.

Skin/body protection:

Impervious gloves should be worn 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. Appropriate footwear should be also selected based on the task being performed and the risks involved. Wash contaminated clothing when becomes dusty.

Respiratory protection:

Use local or general ventilation to control exposures below applicable exposure limits.

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.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White Powder
Odor:	Sweet
Odor threshold:	Not available
pH:	Not applicable
Melting point/ freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash point:	Not available
Evaporation rate:	Not available
Flammability (solid, gas):	May form combustible dust concentrations in air
Upper/ lower flammability or explosive limits:	Not available
Vapor pressure:	Not available
Vapor density:	Not available
Relative density:	2.80
Solubility (water):	Dispersible
Partition coefficient n-octanol/water:	Not applicable
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not applicable

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Product will not undergo hazardous polymerization. Corrosive effects to metal are anticipated. Based on its structural properties the product is not classified as oxidizing.

Chemical stability: Stable under recommended storage conditions. Product is hygroscopic; contamination with moisture will negatively affect product performance.

Conditions to avoid: Unintentional contact with moisture, high humidity, generation of dust, open flame and sparks.
Incompatible materials: Strong oxidizing agents; alcohols, amines, bases, acids, metal alloys.

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 carbon, silica and metal oxides, organic acids, aldehydes, alcohols, etc.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity:

Oral: Not anticipated.

Dermal: Not anticipated, however, adverse symptoms may include temporary irritation and redness.

Inhalation: Not anticipated, however, dust may be irritating to the respiratory system. Adverse symptoms coughing and difficulties with breathing.

Skin corrosion / irritation:

May cause temporary skin irritation. Adverse symptoms may include redness.

Serious eye damage / eye irritation:

May cause serious eye irritation. Adverse symptoms may include tearing and redness.

Specific target organ toxicity, single exposure:

Not expected.

Aspiration hazard: Not an aspiration hazard.

Chronic toxicity:

Respiratory and Skin Sensitizer:

This product does not contain component(s) known or reported to be a skin or respiratory sensitizer.

Germ cell mutagenicity:

Based on available info, risk to humans is not expected from exposure to this product**.**

Carcinogenicity:

This product contains component that is suspected to be carcinogenic to humans.

Titanium Dioxide, CAS #: 13463-67-7: IARC: Group 2B (Possibly Carcinogenic to Humans)
ACGIH: Not classifiable as human carcinogen

Reproductive toxicity:

Risk to humans is not expected from exposure to this product**.**

Specific target organ toxicity, repeated exposure:

Respiratory system (lungs).

Medical conditions aggravated by overexposure:

Respiratory system (lungs) disorders, if product is handled without adequate protection.

Toxicity test results: Not available for mixture. Results for components:

Components	Test Results
Polyvinyl Alcohol, CAS #: 25213-24-5	Acute toxicity Oral LD50 (Rat): >5,000 mg/kg Dermal LD50 (Rat): >5,000 mg/kg Inhalation (dust with 3-5 micron particle size) LC50 (Rat), 1hr: >20 mg/L; causes discomfort if inhaled. Skin corrosion/irritation (Rabbit): In powder form-nonirritating, in aqueous solution-slightly irritating. Serious eye damage/eye irritation (Rabbit): The powder and aqueous solutions are slightly irritating to rabbit eyes; irritation subsided by 48 hrs after exposure. STOT, SE: not expected. Chronic Toxicity Sensitization (Guinea pigs): Not a skin sensitizer when dosed as a 10% aqueous solution. Germ cell mutagenicity: Non genotoxic. Carcinogenicity: Not classifiable as to (its) carcinogenicity in humans. Reproductive/Developmental Effects: No information available. STOT, RE: None.
Hydrated Aluminum Silicate (Kaolin), CAS #: 1332-58-7	Acute Toxicity Skin corrosion/irritation: May cause skin irritation. Serious eye damage/eye irritation: May cause eye irritation. When introduced directly into trachea or pleural cavity has acute effect on lungs, respiratory system, brain (changes in cerebral spinal fluid, other degenerative changes), and immune system. Chronic Toxicity Carcinogenicity: IARC: Not carcinogenic to humans. Reproductive toxicity: Oral (Rat): LPTD: 590 gm/kg (37 day prior to copulation/1-22 day pregnant); Effects on newborn: reduced weight gain LPTD: 370 gm/kg (37 day prior to copulation/1-22 day pregnant); Effects on female and newborn: Other. STOT, RE: Causes chronic pulmonary fibrosis, stomach granuloma.
Titanium Dioxide, CAS #: 13463-67-7	Acute toxicity Oral LD50 (Rat): >5,000 mg/kg; a very insoluble compound. The studies in several species, including man, show neither significant absorption nor tissue storage following ingestion of titanium dioxide. Inhalation LC50 (Rat): >6.82 mg/L Skin corrosion/irritation (Rabbit): Slight or no skin irritation. Not dermally absorbed by humans. Serious eye damage/eye irritation (Rabbit): Slight or no eye irritation. Chronic Toxicity Sensitization (Mouse): Not sensitizing on laboratory animals. Germ cell mutagenicity: Non genotoxic. Carcinogenicity: IARC: Group 2B: Possibly carcinogenic to humans; No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by NTP, ACGIH and OSHA. Titanium dioxide is a frequently used compound in lung clearance studies, where a biologically inert substance is required, however inhalation of high concentrations of fine or ultrafine titanium dioxide particles has been shown to result in pulmonary inflammation, fibrosis, and lung tumors in rats. The same inhalation effects were not observed in mice and hamsters and may be a rat-specific threshold phenomenon, dependent upon lung overloading at high exposure concentrations and possibly of little relevance to humans. Epidemiological data suggest that there is no carcinogenic effect associated with workplace exposure to titanium dioxide dust. STOT, RE: Inhalation: Lung fibrosis; potential occupational carcinogen

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.

Persistence and degradability: Not known.
Bioaccumulative potential: Not known.

Mobility in soil: Not known.
Other adverse effects: Not known.

Ecotoxicity test results: Not available for the mixture. Results for components, where available:

Components	Test Results
Titanium Dioxide, CAS #: 13463-67-7	Acute toxicity: Fish LC0 (orfe, freshwater fish), 48h: >1,000 mg/L. Ecological Data: Persistence and degradability: Methods for the determination of biodegradability are not applicable to inorganic substances. Bioaccumulative potential: The product is practically insoluble in water and not biodegradable. Mobility in soil: No data available. PBT and vPvB assessment is not required for inorganic substances. Titanium dioxide is a stable compound that is insoluble in water and therefore would not be expected to be present in drinking water. Based on the lack of absorption as well as no identified toxicological effects of concern in animal testing, there are also no risk concerns for non-target terrestrial organisms resulting from the use of titanium dioxide as an inert ingredient.
Polyvinyl alcohol, CAS #: 25213-24-5	Acute toxicity: Fish (Bluegill sunfish), 96hrs: LC50=10,000 mg/L; (Fathead minnow), 96hrs: LC50=40,000 mg/L Aquatic invertebrates (Daphnia magna), 48hrs: EC50=8,300 mg/L Ecological Data: Biodegradability: > 90% (Zahn-Wellens Test); COD: 1,800 mg/g, BOD5: 0-5%; BOD30 = 100%

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
Sea transport, 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):
No components are subject to the reporting.
EPCRA Section 304 (40 CFR Part 355) (Emergency Release Notification Requirements):
No components are subject to the reporting.
EPCRA Sections 311 & 312 (Hazardous Chemical Inventory Reporting, Hazard Categories):
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
EPCRA Section 313 (40 CFR Part 372) (Toxic Chemical Release Inventory Reporting):
No components are subject to the reporting.
CERCLA Sections 102-103 (40 CFR Part 302) (Hazardous Substances Release Notification):
No components are subject to the reporting.
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:
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Substance		Regulatory Limits			Recommended Limits	
		OSHA PEL		Cal/OSHA PEL (as of 4/26/13)	NIOSH REL (as of 4/26/13)	ACGIH® 2015 TLV®
		ppm	mg/m^3	8-hour TWA, mg/m^3	Up to 10-hour TWA, mg/m^3	8-hour TWA, mg/m^3
Titanium Dioxide, CAS #: 13463-67-7	Total dust	-	15	10 (as PNOR)	2.4 mg/m^3 (fine) 0.3 mg/m^3 (ultrafine), Ca See Appendix A & C	10

Hydrated Aluminum Silicate (Kaolin), CAS #: 1332-58-7	Total dust	-	15	-	10	-
	Respirable fraction	-	5	2 *	5	2 *

ppm-parts per million; Ca - Potential occupational carcinogens; (C) – Ceiling; *- no asbestos and <1% Crystalline Silica; Appendix A and C refers to Appendixes of Hazardous Air Pollutants List, Section 112(b) of Clean Air Act

NIOSH IDLH: Titanium dioxide, CAS #: 13463-67-7: 5,000 mg/m^3, Ca

Clean Water Act:

- Section 307(a) (Toxic pollutants): No components are listed.
- Section 311(b)(2): Table 116.4A (Hazardous chemicals) / Table 117.3 (RQ): No components are listed.

NFPA rating: Health: 2 Fire: 3 Reactivity: 0 Special: 0
HMIS rating: Health: 2* Flammability: 3 Physical hazard: 0

State Regulations:
California Prop. 65 Components:
This product contains chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
- Titanium dioxide (airborne, unbound particles of respirable size), CAS #: 13463-67-7
  - causes cancer; Date listed: September 2, 2011

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

International Regulations/Inventories:
Canadian Regulations: All components of this product are listed or are exempt from the DSL.
WHMIS Classification (Controlled Products Regulations): Class D-2B: Material causing other toxic effects (Toxic)
WHMIS Label Information:

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
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
COD / BOD	Chemical Oxygen Demand / Biological Oxygen Demand
PACs / PAH	Polycyclic Aromatic Compounds / Polycyclic Aromatic Hydrocarbon Content
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
TQ	Threshold Quantity
TPQ	Threshold Planning Quantity
EHS	Extremely Hazardous Substances
DSL	Domestic Substance List
WHMIS	Workplace Hazardous Materials Information System

Latest revision date: March 2, 2016 – Preparation of SDS in accordance to the GHS requirements
Date of the previous revision: September 7, 2011

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.