

PRODUCT NAME(S): SolarMax® 21-50 Resin

SECTION 1 – IDENTIFICATION

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

Product name: SolarMax® 21-50 Resin
Recommended use: Spray Elastomer

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 07

Classification of the substance or mixture:

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Acute Toxicity, Oral	4	H302	Harmful if swallowed
Skin corrosion / irritation	2	H315	Causes skin irritation
Serious eye damage / Eye irritation	2A	H319	Causes serious eye irritation
Skin Sensitization	1B	H317	May cause an allergic skin reaction
Reproductive Toxicity	2	H361	Suspected of damaging fertility or the unborn child
Specific target organ toxicity, repeated exposure	1	H372	Causes damage to kidney and central nervous system through prolonged or repeated exposure by ingestion May cause damage to lungs and blood through prolonged or repeated exposure by inhalation
	2	H373	
Aquatic Hazard, Acute	3	H402	Harmful to aquatic life
Aquatic Hazard, Long term	3	H412	Harmful to aquatic life with long lasting effects

Precautionary Statements:

Prevention:	P201 P202 P281 P260 P270 P264 P272 P273	Obtain special instruction before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe the mist, vapors, spray. Do not eat, drink, and smoke when using this product. Wash exposed area with plenty of water and soap thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.
Response:	P301 + P330 + P312 P302 + P352 P333 + P313 P362 P305 + P351 + P338 P337+P313 P308 + P313 P314	IF SWALLOWED: Rinse mouth. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. 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 advice/attention. IF exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell.
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: Not known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Concentration, %
Polyether Polyol	9082-00-2	618-655-1	50 – 75
Confidential Component 1	Trade Secret	Trade Secret	10 – 20
Zeolites	1318-02-1	930-915-9	1 – 10
Confidential Component 2	Trade Secret	Trade Secret	1 – 3
Confidential Component 3	Trade Secret	Trade Secret	1 – 3
Confidential Component 4	Trade Secret	Trade Secret	1 – 3
Polyoxypropylenediamine	9046-10-0	618-561-0	1 – 3

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

Inhalation: Remove the exposed person to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if you feel unwell. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and 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.

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 develops.

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 cornea injury. Get medical advice/attention if eye irritation persists.

Ingestion: Remove exposed person to fresh air and keep at rest in a position comfortable for breathing. Remove dentures if any. Get medical advice/attention if you feel unwell.
If the exposed person is conscious, rinse mouth with water and then give plenty of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Do not induce vomiting unless directed to do so by medical personnel.
If unconscious, place in recovery position and 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 victim is unconscious or having convulsions.

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: Water fog or fine spray, alcohol-resistant foam, dry chemical or carbon dioxide fire extinguishers.

Unsuitable extinguishing media: Direct water stream may cause frothing, splattering of burning material and spreading of fire.

Specific hazards arising from the chemical: Material may be ignited only if preheated to high temperatures (such in fire conditions). Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area. Hazardous combustion products: carbon and nitrogen oxides, amines, formaldehyde, hydrogen cyanide, lower molecular weight organic molecules.

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. Spilled product will cause very slippery walking surfaces.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary and unprotected personnel from entering. Ensure adequate ventilation/exhaust extraction. Avoid breathing vapors or mist during clean up. Use protective equipment as described in Section 8. 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. Water polluting material. May be harmful to the environment if released in large quantities. See Section 12.

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

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spill site with soap and water. Cover container and remove 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. Never return spills to original containers for re-use.

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: Protect chemical from atmospheric moisture. Avoid prolonged exposure to heat and air. Keep away from sources of ignition. Do not reseal if contamination is suspected.

Use adequate ventilation to keep airborne levels below the exposure limits. Do not breathe vapors and mists. Wear respiratory protection if material is heated, mixed, sprayed or used in a confined space. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. 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. See Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in original or approved alternative container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) 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. Protect it against physical damage and moisture. Normal temperature and pressures do not affect the material. Keep liquid away from heat, sparks and flame. Do not cut, drill, grind, weld or perform similar operations on or near containers. Use appropriate containment to avoid environmental contamination. Segregate from acids and acid forming substances.

Storage stability: Stable under normal conditions.

Storage temperature: 60 - 90°F (16 – 32°C)

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.

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 liquid product, eye protection is required. Examples of eye protection include safety glasses and goggles or full face shield when there is a greater risk of splash. Contact lenses should not be worn when working with chemicals.

Skin/body protection:

Impervious gloves (nitrile butyl rubber, neoprene and PVC) should be worn always when working with this product. 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. 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 local or general ventilation to control exposures below applicable exposure limits. When ventilation is inadequate, use either an atmosphere supplying respirator or NIOSH or OSHA approved air-purifying respirator for organic vapors. Respirator must be properly fitted and its selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits 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. Emergency eyewash fountains and safety shower are recommended in close proximity as a matter of good work practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow Liquid
Odor:	Not available
Odor threshold:	Not available
pH:	7 - 9
Melting point/ freezing point:	Not available

Initial boiling point and boiling range:	>200°C
Flash point:	>200°C
Evaporation rate:	Negligible
Flammability (solid, gas):	Not available
Upper/ lower flammability or explosive limits:	Not available
Vapor pressure:	Not available
Vapor density:	Not available
Relative density:	1.00-1.05 @ 25°C (77°F)
Solubility (water):	Very slightly soluble
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	>250°C
Decomposition temperature:	Not available
Viscosity:	Not available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Product will not undergo hazardous polymerization. Corrosive effects to metal are not anticipated. Based on its structural properties the product is not classified as oxidizing. Does not form flammable gases in the presence of water.

Chemical stability: Stable under recommended storage conditions. Product is hygroscopic; contamination with moisture will negatively affect product performance. Avoid unintended contact with isocyanates; the reaction will generate heat.

Conditions to avoid: Unintentional contact with moisture, excessive heat, open flame and sparks. Avoid mist formation.

Incompatible materials: Strong oxidizing agents. Water, alcohols, amines, bases, acids, copper, aluminum and zinc alloys.

Hazardous decomposition products: Depend upon temperature, air supply and presence of other materials. Can include, but are not limited to carbon and nitrogen oxides, amines, formaldehyde, hydrogen cyanide, lower molecular weight organic molecules.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Symptoms of exposure:

Acute toxicity:

Oral: Harmful if swallowed. Adverse symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Dermal: Not classified; however, adverse symptoms may include irritation and redness.

Inhalation: Inhalation is unlikely due to the low vapor pressure. However, if handled at elevated temperatures, it may give off-gas, vapor or mist that is irritating to the respiratory system. Adverse symptoms may include nausea, headache, difficulties with breathing.

Skin corrosion / irritation:

Causes skin irritation. Symptoms: redness and itching.

Serious eye damage / eye irritation:

Causes 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 contains components that are reported to be a skin sensitizer.

- Confidential Component 2, CAS #: Trade Secret
- Confidential Component 3, CAS #: Trade Secret

Germ cell mutagenicity:

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

Carcinogenicity:

This product does not contain component(s) known or reported to be carcinogenic by IARC, NTP, EPA, OSHA, ACGIH.

- Zeolites, CAS #: 1318-02-1: IARC: Group 3 (Not Classifiable as to its Carcinogenicity to Humans)

Reproductive toxicity:

This product contains component reported to be reproductive hazard.

- Confidential Component 4, CAS #: Trade Secret

Specific target organ toxicity, repeated exposure:

Kidney, central nervous system, lungs, blood.

Medical conditions aggravated by overexposure:

Kidney, central nervous system, lungs and blood diseases if product is handled without adequate protection.

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

Components	Test Results
Polyether Polyol, CAS #: 9082-00-2	<p>Non-hazardous</p> <p><u>Acute Toxicity</u> Oral LD50 (Rat): >5,000 mg/kg; may cause mild gastrointestinal effects including nausea and diarrhea. Dermal LD50 (Rabbit): >2,000 mg/kg Inhalation LC50 (Rat), 1hr: >200 mg/L; not expected to cause any significant respiratory tract effects. Skin corrosion/irritation (Rabbit): may cause slight irritation, but not expected to cause serious damage. Serious eye damage/eye irritation (Rabbit): may cause irritation (redness), but not expected to cause serious damage. STOT, SE: risk to humans is not expected from exposure to this product. Aspiration hazard: No</p> <p><u>Chronic toxicity</u> Sensitization, skin and respiratory: Not sensitizer Germ cell mutagenicity: Risk to humans is not expected from exposure to this product. Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, OSHA and ACGIH. Reproductive toxicity: Risk to humans is not expected from exposure to this product. STOT, RE: No known or reported target organs from repeated exposure.</p>
Confidential Component 1, CAS #: Trade Secret	<p><u>Acute Toxicity</u> Oral LD50 (Rat): 300-2,000 mg/kg; moderately toxic after single ingestion. Dermal LD50 (Rabbit): >5,000 mg/kg Inhalation LC50 (Rat, aerosol), 4hr: ~5 mg/L; not expected to cause any significant respiratory tract effects. Skin corrosion/irritation (Human), 24hrs: not irritating (Patch test) Serious eye damage/eye irritation (Rabbit): not irritating STOT, SE: No data available. Aspiration hazard: No</p> <p><u>Chronic toxicity</u> Sensitization, skin and respiratory (Guinea pig): Not skin sensitizer (GPMT) Germ cell mutagenicity: negative in vitro and in vivo test Carcinogenicity (Rat, Oral), 108 weeks: NOAEL: 1,210 mg/kg bwt; No evidence of carcinogenicity. Reproductive toxicity: Fertility (Rat, Oral) two generation study: NOAEL: 2,200 mg/kg bwt; Fetal Development (Rabbit, Oral), 30days: NOAEL: 1,000 mg/kg bwt; No reproductive effects. STOT, RE (Rat, Oral), 4weeks/daily: NOAEL: 10,000 mg/kg - Kidney damage; Category 2</p>
Zeolites, CAS #: 1318-02-1	<p><u>Acute Toxicity</u> Oral LD50 (Rat): >5,110 mg/kg (OECD Guideline 401); May cause gastrointestinal tract irritation. Dermal LD50 (Rabbit): Not data available Inhalation LC50 (Rat)(dust/aerosol), 4hrs : >5.3 mg/L. Slightly irritant. Skin corrosion/irritation (Rabbit): Slightly irritant. May cause dehydration. Serious eye damage/eye irritation (Rabbit): Slightly irritant. May cause abrasion or mechanical irritation. STOT, SE: risk to humans is not expected from exposure to this product. Aspiration hazard: No</p> <p><u>Chronic toxicity</u> Sensitization, skin and respiratory: Not sensitizer (Guinea pig maximization test) Germ cell mutagenicity: Risk to humans is not expected from exposure to this product. Carcinogenicity: IARC: Group 3 (Not Classifiable as to its Carcinogenicity to Humans) Reproductive toxicity: No adverse effects in rats and rabbits or their offspring following administration in the drinking water during pregnancy. STOT, RE: Effects on kidney were observed in rats and dogs administered high dose levels in their feed for one month. Effect on blood, chronic pneumonitis and acute bronchopneumonia were observed in dogs. Long-term inhalation by rats and dogs produced inflammation in the lungs associated with accumulation of particulate.</p>
Confidential Component 2, CAS #: Trade Secret	<p><u>Acute Toxicity</u> Oral LD50 (Rat): >5,000 mg/kg (OECD Guideline 401) Symptoms: drowsiness, gastrointestinal disturbance, liver and kidney disorders, muscle weakness. Dermal LD50 (Rat): >2,000 mg/kg (OECD Guideline 402) Inhalation LC50 (Rat), 4hrs: >5.0 mg/L (OECD Guideline 403). No mortality was observed. Skin corrosion/irritation (Rabbit): not irritating (OECD Test Guideline 404) Serious eye damage/eye irritation (Rabbit): not irritating (OECD Test Guideline 405) STOT, SE: no specific target organ toxicity to be expected after a single exposure.</p> <p><u>Chronic toxicity</u> Respiratory or skin sensitization (Guinea pig): sensitizing (OECD Guideline 406) Mutagenicity: Not mutagenic in bacteria, mammalian cell culture and mammals. Reproductive toxicity: The results of animal studies gave no indication of a fertility impairing effect. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. Teratogenicity: In animal studies the substance did not cause malformations. STOT, RE: May cause damage to the liver after repeated ingestion. Effect found in rodents only. The relevance to humans is questionable. Due to the species specific mode of action, the effects are not expected to occur in humans.</p>
Confidential Component 3, CAS #: Trade Secret	<p><u>Acute Toxicity</u> Oral LD50 (Rat): 2,000-5,000 mg/kg (OECD Guideline 401) Skin corrosion/irritation (Rabbit): not irritating (OECD Test Guideline 404) Serious eye damage/eye irritation (Rabbit): not irritating (OECD Test Guideline 405) STOT, SE: no specific target organ toxicity to be expected after a single exposure.</p> <p><u>Chronic toxicity</u> Respiratory or skin sensitization (Guinea pig): skin sensitizing (OECD Guideline 406)</p>
Confidential Component 4, CAS #: Trade Secret	<p><u>Acute Toxicity</u> Oral LD50 (Rat): 300-2,000 mg/kg; Harmful if swallowed. Based on laboratory data, ingestion may cause gastrointestinal irritation, nausea, vomiting, diarrhea, hunched posture, eye squinting, labored breathing, hyperactivity, depression, lack of coordination, and skinniness. Dermal LD50 (Rabbit): No data available. Inhalation: Excessive inhalation of vapor or mist may irritate the nose, throat and lungs; causing headache and nausea. Skin corrosion/irritation (Rabbit): causes irritation. Absorption through intact skin is possible. Serious eye damage/eye irritation (Rabbit): causes irritation. STOT, SE: No data available. Aspiration Hazard: No data available.</p> <p><u>Chronic toxicity</u></p>

	Respiratory or skin sensitization: No sensitizing effect known. Germ cell mutagenicity: No data available Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, OSHA and ACGIH. Reproductive Toxicity: Developmental effects were seen in animal testing, but only at doses that were toxic to the mother. STOT, RE: Based on animal data, prolonged or repeated overexposure by ingestion may affect the kidneys and thymus gland. Neurological and neurobehavioral effects have been observed.
Polyoxypropylenediamine, CAS #: 9046-10-0	<u>Acute Toxicity</u> Oral LD50 (Rat): 480 mg/kg Dermal LD50 (Rabbit): 2,090 mg/kg Skin corrosion/irritation (Rabbit): Corrosive. Causes severe burns. Serious eye damage/eye irritation (Rabbit): Corrosive. Causes serious eye damage.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Acutely and chronically hazardous for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Persistence and degradability: Not readily biodegradable by OECD criteria. In contact with water the substance will hydrolyze slowly. After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Bioaccumulative potential: No significant accumulation in organisms is expected.

Mobility in soil: Not expected.

Other adverse effects: Not known.

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

Components	Test Results
Polyether Polyol, CAS #: 9082-00-2	<u>Acute Toxicity</u> Fish: LC 50, 96hrs: >100 mg/L (based on available data and comparison to similar compounds)
Confidential Component 1, CAS #: Trade Secret	<u>Acute Toxicity</u> Fish: LC50 (fathead minnow), 96hrs: ~75,000mg/L (flow-through test) Aquatic invertebrates: EC50 (Daphnia magna), 24hrs: >10,000 mg/L (static test) Aquatic plants: EC50 (green algae), 96hrs: 5,000 – 15,000 mg/L (growth rate inhibition) (similar substance) <u>Ecological Data</u> Biodegradability (Activated sludge, aerobic), 28days: 90-100% - Readily biodegradable (OECD Test Guideline 301B) Bioaccumulative potential: log Pow: ~-2 Mobility in soil: No data available.
Zeolites, CAS #: 1318-02-1	<u>Acute Toxicity:</u> Fish (fathead minnow), 96hrs: LC50: >680 mg/L (EPA 72-1, static). The details of the toxic effect relate to the nominal concentration. The LC50 is higher than the solubility limit. Aquatic invertebrates (Daphnia magna), 24hrs: EC50: 2,808 mg/L (OECD Test Guideline 202, part 1, static) Aquatic plants (Green algae), 96hrs: EC50: >328 mg/L (OECD Test Guideline 201, static). The details of the toxic effect relate to the nominal concentration. Tested above maximum solubility. The product has low solubility in the test medium. An eluate has been tested. Microorganisms (Bacteria), 16hrs: EC50: 950 mg/L (Growth inhibition) (DIN 38412, Part 8). The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The details of the toxic effect relate to the nominal concentration. The product has low solubility in the test medium. An eluate has been tested. <u>Chronic toxicity:</u> Fish (fathead minnow), 30days: NOEC: ≥86.7 mg/L (OPP 72-5, EPA-Guideline, Flow through). The statement of the toxic effect relates to the analytically determined concentration. Aquatic invertebrates (Daphnia magna), 21days: NOEC: 32 mg/L (OECD Test Guideline 211, semistatic). The details of the toxic effect relate to the nominal concentration. The product has low solubility in the test medium. An eluate has been tested. <u>Ecological Data:</u> Biodegradability: Not readily biodegradable. The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants. It cannot be eliminated from water by biological purification processes. Mobility in soil: Transport between environmental compartments: Study scientifically not justified.
Confidential Component 2, CAS #: Trade Secret	<u>Aquatic toxicity</u> Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. <u>Acute Toxicity</u> Fish: LC50 (Rainbow trout), 96hrs: 1-10 mg/L (OECD 203, static) Aquatic invertebrates: EC50 (Daphnia magna), 24hrs: 1-10 mg/L Aquatic Plants: EC50 (algae), 72hrs: >100 mg/L (growth rate), (OECD Guideline 201, static) EC10 (algae), 72hrs: 10 mg/L (growth rate) (OECD Guideline 201, static) <u>Chronic toxicity</u> No observed effect concentration at: Aquatic invertebrates (Daphnia magna), 21 days: ≤1mg/L (OECD Guideline 202, part 2, semistatic) Soil living organisms LC0, (redworm) 14 days: >1,000 mg/kg, (OECD Guideline 207, artificial soil) LC0, (redworm) 56 days: >100 mg/kg, (OECD Guideline 222, artificial soil) <u>Ecological Data</u> Activated sludge, EC0, 3hrs: 1,000 mg/L (OECD Guideline 209, static) Bioaccumulative potential (golden orfe): Does not significantly accumulate in organisms. Mobility in soil: expected adsorption to solid soil phase.
Confidential Component 3, CAS #: Trade Secret	<u>Aquatic toxicity</u> Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. <u>Acute Toxicity</u> Fish: LC50 (Rainbow trout), 96hrs: 1-10 mg/L (OECD 203, static) LC50 (Zebrafish), 96hrs: ≤1mg/L (OECD 203, semistatic) LC50 (Bluegill), 96hrs: ≤1 mg/L (OECD 203, static)

	<p>Aquatic invertebrates: EC50 (Daphnia magna), 24hrs: 10-100 mg/L Aquatic Plants: EC50 (algae), 72hrs: 1-10 mg/L (growth rate), (OECD Guideline 201, static) <u>Chronic toxicity</u> No observed effect concentration at: Aquatic invertebrates (Daphnia magna), 21 days: 1.0 mg/L (OECD Guideline 211, semistatic) <u>Ecological Data</u> Activated sludge, EC0, 3hrs: >100 mg/L (OECD Guideline 209, static) Bioaccumulative potential: Not expected Mobility in soil: expected adsorption to solid soil phase. Not readily biodegradable. Elimination info: 38% DOC reduction, 28days</p>
Confidential Component 4, CAS #: Trade Secret	<p>Highly toxic to aquatic organisms. <u>Acute Toxicity:</u> Fish, 96hrs: LC50: 10 - 100 mg/L (OECD Guideline 203) Aquatic Invertebrates (Daphnia magna), 48hrs: EC50: 10 - 100 mg/L (OECD Guideline 202, Acute Immobilisation Test) Aquatic Plants (green algae), 72hrs: EC50: 10 - 100 mg/L (OECD Guideline 201, Growth Inhibition Test) <u>Ecological Data:</u> Persistence and degradability: Unlikely to persist in the environment. While not considered readily biodegradable, it is susceptible to biodegradation and hydrolysis in water. Bioaccumulative potential: The substance is unlikely to accumulate in the food chain (bioaccumulation potential is low), and is considered highly toxic to aquatic organisms. Mobility in soil: Insoluble in water and highly adsorptive to particulates, soils, and sediments. Consequently, it will be removed via adsorption in wastewater treatment facilities. Results of PBT and vPvB assessment: No data available. Other adverse effects: No further relevant information available.</p>
Polyoxypropylenediamine, CAS #: 9046-10-0	<p><u>Acute toxicity</u> Fish: LC50, 96hrs: >15 mg/L (OECD Guideline 203, semistatic) LC50, 96hrs: 772.14mg/L (OECD Guideline 203, static) Aquatic invertebrates: EC50, 48hrs: 80 mg/L (OECD Guideline 202, part 1, static) EC50, 48hrs: 418.34mg/L (Daphnia test acute, static) Aquatic plants: EC50, 72hrs: 15 mg/L (growth rate) (OECD Guideline 201, static) EC50, 72hrs: 141.72 mg/L (ISO/DIS 10253, static) No observed effect concentration, 72hrs: 100 mg/L (ISO/DIS 10253, static) <u>Chronic toxicity</u> Fish: Study does not need to be conducted. Aquatic invertebrates: Study does not need to be conducted. <u>Ecological Data</u> Activated sludge EC20, 3hrs: 380 mg/L (OECD Guideline 209)</p>

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. Empty containers should be completely drained 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):

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:

Released: June 7, 2016

Substance		Regulatory Limits			Recommended Limits	
		OSHA PEL		Cal/OSHA PEL	NIOSH REL	ACGIH® 2015 TLV®
		mppcf	mg/m ³	8-hour TWA, mg/m ³	Up to 10-hour TWA, mg/m ³	8-hour TWA, mg/m ³
Hydrated Aluminum Silicate (Kaolin), CAS #: 1332-58-7	Total dust	-	15	-	10	-
	Respirable fraction	-	5	2 *	5	2 *
Aluminum Oxide, CAS #: 1344-28-1	Total dust	-	15	10	-	-
	Respirable fraction	-	5	5	-	1

mppcf - millions of particles per cubic foot; *- no asbestos and <1% Crystalline Silica;

Clean Water Act:

- Section 307(a)(1) (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: 1 Reactivity: 1 Special: 0

HMIS rating: Health: 2* Flammability: 1 Physical hazard: 1

State Regulations:

California Prop. 65 Components:

This product does not contain components known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

International Regulations/Inventories:

Canada: All ingredients of this product are listed or are exempt from the DSL.

WHMIS Classification (Controlled Products Regulations): Class D2B: Material causing other toxic effects

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
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: June 7, 2016 – Preparation of SDS in accordance to the GHS requirements

Date of the previous revision: June 2, 2014

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.