

**PRODUCT NAME(S): Pipeliner™ 5000 11-70 PW Resin**

**SECTION 1 – IDENTIFICATION**

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

**Product name:** Pipeliner™ 5000 11-70 PW Resin

**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:**  
WARNING

**Pictogram(s):**



GHS 08



GHS 07



GHS 09

**Classification of the substance or mixture:**

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Acute Toxicity, Oral	5	H303	May be harmful if swallowed
Skin corrosion / irritation	3	H316	Causes mild skin irritation
Serious eye damage / Eye irritation	2A	H319	Causes serious eye irritation
Skin Sensitization	1B	H317	May cause an allergic skin reaction
Carcinogenicity	2	H351	Suspected of causing cancer by inhalation
Specific target organ toxicity, repeated exposure	2	H373	May cause damage to kidney, liver and central nervous system through prolonged or repeated exposure May cause damage to lungs/respiratory system through prolonged or repeated exposure by inhalation
Aquatic Hazard, Acute	2	H401	Toxic to aquatic life
Aquatic Hazard, Chronic	2	H411	Toxic to aquatic life with long lasting effects

**Precautionary Statements:**

<b>Prevention:</b>	P201 P202 P281 P260 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 mist, vapors, spray. 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.
<b>Response:</b>	P302 + P352 P333 + P313 P363 P305 + P351 + P338  P337 + P313 P308 + P313 P314 P391	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing 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. Collect spillage.
<b>Storage:</b>	P405	Store locked up.
<b>Disposal:</b>	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.

**Note:** Negative effects of the component classified as carcinogen are minimized since it is dispersed in a liquid as opposed to an inhalable fine powder form. However, precautions should be taken to avoid breathing mists created by heating, mixing or spraying and dust from cutting or grinding of cured product containing this component.

**SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS**

Components	CAS #	EC #	Concentration, %
Polyether Polyols Blend	Trade Secret	Trade Secret	70 – 90
Diethyltoluenediamine	68479-98-1	270-877-4	10 – 20
Zeolites	1318-02-1	930-915-9	1 – 5
Titanium Dioxide	13463-67-7	236-675-5	0.1 – 2
Confidential Component 1	Trade Secret	Trade Secret	0.1 – 2
Confidential Component 2	Trade Secret	Trade Secret	0.1 – 2

**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 for at least 15 minutes. Remove contaminated clothing and shoes immediately and wash them before reuse. Get medical advice/attention if irritation persists.

**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:** 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:** 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:** 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.

Certain ingredient of this product may cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom may include cyanosis. Immediately give oxygen if victim turns blue (lips, ears, fingernails). Since reversion of methemoglobin to hemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need to be treated only by supportive measures.

**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, hydrogen cyanide, lower molecular weight organic molecules, oxides of metals present in mixture (Section 3).

**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 for more details.

**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.

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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.

**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. 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. 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 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

<b>Appearance:</b>	White Liquid
<b>Odor:</b>	Slightly ammonia-like
<b>Odor threshold:</b>	Not available
<b>pH:</b>	8 – 10
<b>Melting point/ freezing point:</b>	Not available
<b>Initial boiling point and boiling range:</b>	>200°C
<b>Flash point:</b>	>200°C
<b>Evaporation rate:</b>	Not applicable
<b>Flammability (solid, gas):</b>	Not applicable

<b>Upper/ lower flammability or explosive limits:</b>	Not applicable
<b>Vapor pressure:</b>	Negligible
<b>Vapor density:</b>	Not available
<b>Relative density:</b>	1.00-1.10 @ 25°C (77°F)
<b>Solubility (water):</b>	Very slightly soluble
<b>Partition coefficient n-octanol/water:</b>	Not available
<b>Auto-ignition temperature:</b>	>250°C
<b>Decomposition temperature:</b>	Not available
<b>Viscosity:</b>	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, hydrogen cyanide, lower molecular weight organic molecules, oxides of metals present in mixture (Section 3).

### SECTION 11 – TOXICOLOGICAL INFORMATION

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

**Symptoms of exposure:**

**Acute toxicity:**

**Oral:** May be harmful if swallowed. Adverse symptoms may include abdominal pain, nausea and diarrhea.

**Dermal:** Not anticipated, 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 very irritating to the respiratory system. Adverse symptoms may include nausea, headache, difficulties with breathing.

- DETDA, CAS #: 68479-98-1: Inhalation, skin absorption or ingestion may cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom may include cyanosis (purplish-blue coloring of the skin, fingernails, and lips).

**Skin corrosion / irritation:**

Causes mild skin irritation. Adverse symptoms may include irritation and 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 contains a component that is reported to be a skin or respiratory sensitizer.

- Confidential Component 1, CAS #: Trade secret: skin sensitizer.

**Germ cell mutagenicity:**

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

**Carcinogenicity:**

This product contains components reported to be possibly carcinogenic to humans by IARC.

- Titanium Dioxide, CAS #: 13463-67-7: IARC: Group 2B (Possibly Carcinogenic to Humans)
- Zeolites, CAS #: 1318-02-1: IARC: Group 3 (Not Classifiable as to its Carcinogenicity to Humans)

Negative effects of Titanium Dioxide on health are minimized, considering that it is dispersed in liquid. However, precautions should be taken to avoid breathing mists created by heating, mixing or spraying and dust from cutting or grinding of cured product containing this component.

**Reproductive toxicity:**

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

**Specific target organ toxicity, repeated exposure:**

Liver, kidney, pancreas, respiratory system/lungs.

**Medical conditions aggravated by overexposure:**

Liver, kidney, pancreas, respiratory system/lungs and skin disorders if product is handled without adequate protection.

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

Components	Test Results
Polyether Polyols Blend CAS #: Trade secret	<p>Non-hazardous</p> <p><u>Acute Toxicity</u>            Oral LD50 (Rat): &gt;5,000 mg/kg; may cause mild gastrointestinal effects including nausea and diarrhea.            Dermal LD50 (Rabbit): &gt;2,000 mg/kg            Inhalation LC50 (Rat), 1hr: &gt;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>
Diethyltoluenediamine (DETA), CAS #: 68479-98-1	<p><u>Acute Toxicity</u>            Oral LD50 (Rat): 738 mg/kg (OECD Test Guideline 401)            Dermal LD50 (Rat): &gt;2,000 mg/kg (OECD Test Guideline 402)            Skin corrosion/irritation (Rabbit): Non-irritating (OECD Test Guideline 404)            Eye Irritation (Rabbit): Irritating (US-EPA)</p> <p><u>Chronic toxicity</u>            Skin Sensitization (guinea pig): Negative (intracutaneous test)            Germ cell mutagenicity: Positive and negative results were seen in various in Vitro and in Vivo studies.            Reproductive toxicity: Oral (Rat, females), Dose: 0, 50, 150, 500 mg/kg            General Toxicity Maternal: No observed adverse effect level: 50 mg/kg body weight            Teratogenicity: No observed adverse effect level: 500 mg/kg body weight            Embryo-fetal toxicity: No observed adverse effect level: 150 mg/kg body weight            Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses (OECD Test Guideline 414)            STOT, RE: Oral (Rat), 90 days, Dose: 50-125-320ppm, NOEL: ≥8 mg/kg; LOEL: ≥21 mg/kg;            Dermal (Rabbit), 21 day, Dose: 1-10-100mg/kg, NOEL: ≥10 mg/kg            Chronic ingestion may cause liver damage. Pancreas damage.</p>
Zeolites, CAS #: 1318-02-1	<p><u>Acute Toxicity</u>            Oral LD50 (Rat): &gt;5,110 mg/kg (OECD Guideline 401); May cause gastrointestinal tract irritation.            Dermal LD50 (Rabbit): Not data available            Inhalation LC50 (Rat)(dust/aerosol), 4hrs : &gt;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>
Titanium Dioxide, CAS #: 13463-67-7	<p><u>Acute toxicity</u>            Oral LD50 (Rat): &gt;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): &gt;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.</p> <p><u>Chronic Toxicity</u>            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</p>
Confidential Component 1, CAS #: Trade secret	<p>Toxicity data are based on similar products.</p> <p><u>Acute Toxicity</u>            Oral LD50 (Rat): &gt;2,000 mg/kg (Directive 67/548/EEC, Annex V.B.1)            Dermal LD50 (Rat): &gt;2,000 mg/kg (Directive 67/548/EEC, Annex V.B.3)            Inhalation LC50 (Rat), 4hr: &gt;4 mg/L dust/mist (OECD Guideline 403);            Skin corrosion/irritation (Rabbit): slightly irritating (OECD Test Guideline 404)            Serious eye damage/eye irritation (Rabbit): slightly irritating (OECD Test Guideline 405)            STOT, SE: No data available</p> <p><u>Chronic toxicity</u>            Sensitization (Guinea pig): Skin-sensitizer (OECD Test Guideline 406)            Germ cell mutagenicity: negative in vitro and in vivo tests            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: Teratogenicity (Rat, Oral): NOAEL: 1,000 mg/kg            STOT, RE (Rat, Oral): NOAEL: &gt;1,000 mg/kg</p>

Confidential Component 2, CAS #: Trade secret	<p><u>Acute Toxicity</u>            Oral LD50 (Rat): 1,000-2,000 mg/kg; Harmful if swallowed. May cause gastrointestinal effects including nausea, lethargy and diarrhea.            Dermal LD50 (Rabbit): &gt;2,000 mg/kg            Inhalation LC50 (Rat), 1hr: No data available.            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>
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### SECTION 12 – ECOLOGICAL INFORMATION

**Ecotoxicity:** Acutely and chronically hazardous for aquatic organisms. Do not release into natural waters.

**Persistence and degradability:** Not readily biodegradable by OECD criteria. In contact with water the substance will hydrolyze slowly.

**Bioaccumulative potential:** No significant accumulation in organisms is expected.

**Mobility in soil:** Not known.

**Other adverse effects:** Not known.

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

Components	Test Results
Polyether Polyols Blend CAS #: Trade secret	<p><u>Acute Toxicity:</u>            Fish: LC 50, 96hrs: &gt;100 mg/L (based on available data and comparison to similar compounds)</p>
Diethyltoluenediamine (DETD), CAS #: 68479-98-1	<p><u>Aquatic toxicity:</u> Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.  <u>Acute Toxicity</u>            Fish: LC50 (Fathead minnow), 96hrs: &gt;106 mg/L (OECD Guideline 203)            Aquatic Invertebrates: EC50 (Daphnia magna), 48hrs: 5.8 mg/L (OECD Guideline 202)            Algae:ErC50 (Green algae), 72hrs: 104 mg/L (OECD Guideline 201)  <u>Ecological Data</u>            Microorganisms, EC50 (bacterium), 24hrs: &gt;170 mg/L (DIN 38412 Part 8)            Biodegradation, 28days: &lt;1 % (OECD Guideline 301D); COD: 2,370 mg/g</p>
Zeolites, CAS #: 1318-02-1	<p><u>Acute Toxicity:</u>            Fish (fathead minnow), 96hrs: LC50: &gt;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: &gt;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.</p>
Titanium Dioxide, CAS #: 13463-67-7	<p><u>Aquatic toxicity:</u> Fish LC0 (orfe, freshwater fish), 48h: &gt;1,000 mg/L.  <u>Ecological Data:</u>            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.</p>
Confidential Component 1, CAS #: Trade secret	<p>*Toxicity data are taken from studies of similar products  <u>Acute toxicity</u>            Fish: LC50 (zebra fish), 96hrs: 10-100 mg/L            Aquatic invertebrates: EC50 (Daphnia magna), 48hrs: 10-100 mg/L            Aquatic plants: EC50 (green algae), 72hrs: &gt;100 mg/L            Terrestrial plants (Oats), NOEC: ≥100 mg/kg            Microorganisms: EC50 (activated sludge), 3hrs: &gt;3,000 mg/L  <u>Ecological Data</u>            Biodegradation: DOC reduction, 28days: 0% not readily biodegradable            Bioaccumulation: calculated value 1.872 BCF; hydrolyze rapidly in water</p>
Confidential Component 2, CAS #: Trade secret	<p><u>Aquatic toxicity:</u> High probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Product not tested; The statement has been derived from substances/products of a similar structure or composition.  <u>Acute Toxicity:</u></p>

Fish (zebra fish), 96hrs: LC50: >100 mg/L  
 Aquatic Invertebrates (Daphnia magna), 48hrs: EC50: >100 mg/L  
 Aquatic Plants (algae), 72hrs: EC50: >100 mg/L (Guideline 92/69/EEC, C.3)  
 Microorganisms (activated sludge), 0.5hrs: EC20: >1,000 mg/L  
Ecological Data:  
 Biodegradation: Not readily biodegradable.  
 Bioaccumulative potential: Does not significantly accumulate in organisms.  
 Mobility in soil: Not expected.  
 Product does not contain organically bound halogen.

### 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/CAO:** 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 or impurities of this product are present above De Minimis level and therefore do not require 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: The following components are listed:

Substance		Regulatory Limits			Recommended Limits	
		OSHA PEL		Cal/OSHA PEL	NIOSH REL	
		ppm	mg/m <sup>3</sup>	8-hour TWA, mg/m <sup>3</sup>	Up to 10-hour TWA, mg/m <sup>3</sup>	ACGIH® 2015 TLV®
					8-hour TWA, mg/m <sup>3</sup>	
Hydrated Aluminum Silicate (Kaolin), CAS #: 1332-58-7	Total dust	-	15	-	10	-
	Respirable fraction	-	5	2 *	5	2 *
Titanium Dioxide, CAS #: 13463-67-7	Total dust	-	15	10 (as PNOR)	2.4 mg/m <sup>3</sup> (fine) 0.3 mg/m <sup>3</sup> (ultrafine), Ca See Appendix A & C	10

ppm-parts per million; \*- no asbestos and <1% Crystalline Silica; Ca - Potential occupational carcinogens; Appendix A, C and D 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<sup>3</sup>, 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: 1 Reactivity: 1 Special: 0

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

**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:**

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
EHS	Extremely Hazardous Substances
DSL	Domestic Substance List
WHMIS	Workplace Hazardous Materials Information System

**Latest revision date:** August 3, 2016

**Date of the previous revision:** November 23, 2015 – Preparation of SDS in accordance to the GHS requirements

**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.