Rhino Linings®

SAFETY DATA SHEET

Part No.: TGCC2E B-D

Date Released: May 16, 2017

PRODUCT NAME(S): ThermalGuard CC2 Eco, B Component

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

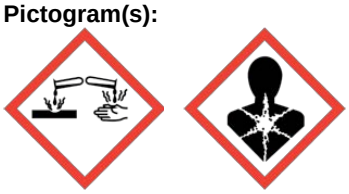
Product name: ThermalGuard CC2 Eco, Part B
Product Category: Polyurethane Resin Blend
Chemical Family: Recommended use: For 2 component SPF

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 05 GHS 08

Classification of the substance or mixture:

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Acute Toxicity, Oral	4	H302	Harmful if swallowed
Acute Toxicity, Dermal	5	H313	May be harmful in contact with skin
Skin corrosion / irritation	1A-1C	H314	Causes severe skin burns and eye damage.
Serious eye damage / Eye irritation	2B	H320	Causes eye irritation.

Precautionary Statements:

Prevention:	P280	Wear protective gloves/ protective clothing / eye protection/ face protection.
	P264	Wash exposed area with plenty of water and soap thoroughly after handling.
	P270	Do not eat, drink, and smoke when using this product.
	P260	Do not breathe mist, vapors, spray.
	P273	Avoid release to the environment.
Response:	P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P303 + P361 + P352	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a POISON CENTER or doctor/physician.
	P314	Get medical advice/attention if you feel unwell.
	P332 + P313	If skin irritation occurs: Get medical advice/attention.
	P363	Wash contaminated clothing before reuse.
Storage:	P405	Store locked up.
Disposal:	P501	Dispose of contents/container to hazardous or special waste collection point.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Concentration %
Polyether Polyol	52019-35-9	N/A	50 – 75%
Amine Catalyst Blend	Trade Secret	N/A	3 – 12%
2-Propanol, 1-chloro-, phosphate (3:1)	13674-84-5	N/A	<15
Ethylene Glycol	107-21-1	N/A	0.1 – 1.0%

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SECTION 4 – FIRST-AID MEASURES

Description of First Aid measures:

Inhalation: Immediate medical attention required. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. The exposed person should be kept under medical surveillance for 48 hours.

Skin: Immediate medical attention required. Call a poison center or physician. Chemical burns must be treated promptly by a physician or dermatologist. 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.

Eye: Immediate medical attention required. Call a poison center or physician. Chemical burns must be treated promptly by a physician or ophthalmologist.
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.

Ingestion: Immediate medical attention required. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove dentures if any.
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 get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

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

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

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: 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 dioxide, Carbon monoxide, nitrogen oxides, 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: For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. 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. sawdust, sand, earth, vermiculite or diatomaceous earth). After approximately one hour, transfer into properly labeled chemical waste containers. Cover container, but do not seal, and remove from work area. Keep in a well ventilated area. Wash the spill site with soap and water.
For major spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or contain and collect with an absorbent material as described in the previous paragraph.

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 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.

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:
USA

Components	CAS #	OSHA PEL	ACGIH TWA	NIOSH
Ethylene Glycol	107-21-1	None	No data	50ppm ceiling
Amine Catalyst Blend	Trade Secret	None	TLV: 0.05 ppm STEL: 0.15 ppm	No data

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.

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Skin/body protection:

Avoid contact with skin. Impervious gloves (nitrile butyl rubber, neoprene and PVC) should be worn always when working with this product. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact. Dispose contaminated gloves after use in accordance with good laboratory practices. 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. Emergency eyewash fountains and safety shower should be in close proximity as a matter of good practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber Liquid
Odor:	Ammonia-like
Odor threshold:	Not available
pH:	9-10
Melting point/ freezing point:	< - 30°C (<-22°F) becomes highly viscous at low temperatures
Initial boiling point and boiling range:	Decomposed before boiling
Flash point:	Closed cup: >200°C (392°F)
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:	1.2 @ 25°C (77°F)
Solubility (water):	partially soluble
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	>200°C (392°F)
Decomposition temperature:	>200°C (392°F)
Viscosity:	750 - 900 cP @ 25°C (77°F)

*Where data are not known for mixture, they are stated for components, if available.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity:
Hazardous Polymerization: Product will not undergo hazardous polymerization.
Corrosion to metals: Corrosive effects to metal are not anticipated.
Oxidizing properties: Based on its structural properties the product is not classified as oxidizing.
Formation of flammable gases: 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.

Hazardous decomposition products: Depend upon temperature, air supply and presence of other materials. Can include, but are not limited to carbon dioxide, carbon monoxide, alcohols, ethers, ketones, hydrocarbons, polymer fragments.

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SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity: Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Likely Routes of Exposure: Skin contact. Eye contact.
Eye: Causes serious eye damage.
Skin: Causes skin irritation.
Ingestion: Not an expected route of exposure. Expected to be a low ingestion hazard.
Inhalation: Not an expected route of exposure. Not an expected route of exposure. No adverse effects due to inhalation are expected.

Calculated overall chemical acute toxicity values for this formulation:

Calculated overall Chemical Acute Toxicity Values		
LC50 (inhalation)	**LD50 (oral)**	**LD50 (dermal)**
>5 mg/kg (dust and mist)	>2000 mg/kg	>2000 mg/kg

DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion/Irritation: Causes skin irritation.
Serious Eye Damage/Irritation: Causes serious eye damage.
Respiratory Sensitization: Based on available data, this product is not expected to cause respiratory sensitization.
Skin Sensitization: Based on available data, this product is not expected to cause skin sensitization.
Symptoms and Target Organs: Causes severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
Chronic Health Effects: No chronic health effects known.
Carcinogenicity: This product is not classified as a carcinogen.

Material	OSHA(O)	ACGIH(G)	NTP(N)	IARC(I)
Ethylene Glycol	not listed	A4	not listed	not listed
2-Butoxyethanol	Yes	A3	not listed	3
1,4- Dioxane	Yes	A3	R	2B
Diethylene glycol	Yes	A3	not listed	3

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

OSHA (O) =Occupational Safety and Health Administration
Yes = Expected to be carcinogenic
not listed = Not expected to be carcinogenic

ACGIH (G) =American Conference of Governmental Industrial Hygienists
A1 =Confirmed human carcinogen
A2 =Suspected human carcinogen
A3 =Animal carcinogen
A4 =Not classifiable as a human carcinogen
A5 =Not suspected as a human carcinogen
not listed = Not expected to be carcinogenic

NTP (N) =National Toxicology Program
1 =Known to be a carcinogen
2 = Reasonably anticipated to be a carcinogen
not listed = Not expected to be carcinogenic

IARC (I) =International Agency for Research on Cancer
1 =Carcinogenic to humans
2A =Probably carcinogenic to humans
2B =Possibly carcinogenic to humans
3 =Not classifiable as to its carcinogenicity to humans
4 =Probably not carcinogenic to humans
not listed = Not expected to be carcinogenic

Mutagenicity:
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Reproductive Toxicity:
Suspected of damaging the unborn child

Specific Target Organ Toxicity (STOT):
Single Exposure: Not classified as an STOT - Single Exposure.
Repeated Exposure: Not classified as an STOT - Repeated Exposure.

Aspiration Toxicity:
Based on available data, this product is not expected to cause aspiration toxicity.

Other Information:
Not available.

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SECTION 12 – ECOLOGICAL INFORMATION

Ethylene glycol (107-21-1)

LC50 fishes 1	**41000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)**
EC50 Daphnia 1	**46300 mg/l (Exposure time: 48 h - Species: Daphnia magna)**
LC50 fish 2	**14 - 18 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])**

2-Propanol, 1-chloro-, phosphate (3:1) (13674-84-5)

LC50 fishes 1	**56.2 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])**
EC50 Daphnia 1	**63 mg/l (Exposure time: 48 h - Species: Daphnia magna)**
EC50 other aquatic organisms 1	**45 mg/l (Exposure time: 72 h - Species: Desmodesmus subspicatus)**
LC50 fish 2	**180 mg/l (Exposure time: 96 h - Species: Leuciscus idus [static])**
EC50 other aquatic organisms 2	**4 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)**

Do not discharge product into the environment.

Assessment of aquatic toxicity: Not tested. Do not discharge product into the environment.
Assessment of terrestrial toxicity: Study not necessary due to exposure considerations.
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.

Ethylene glycol (107-21-1)
Log Pow -1.93

2-Propanol, 1-chloro-, phosphate (3:1) (13674-84-5)
BCF fish 1 1.9 - 4.6
Log Pow 2.59

Mobility in soil: Not expected.
Other adverse effects: No known significant effects or critical hazards.

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 (US DOT): Not regulated
Land Transport (Canadian TDG): Not regulated
Land Transport (European ADR/RID): Not regulated
Marine Transport (IMDG/IMO): Not regulated
Air Transport (ICAO/IATA): Not regulated

SECTION 15 – REGULATORY INFORMATION

U.S. Regulations:
U.S. OSHA (Occupational Safety and Health Administration) Specifically Regulated Substances (29 CFR 1910.1001-1050): No component of this product is present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
SARA/CERCLA reporting requirements:
The following components of this product are subject to the CERCLA/SARA reporting requirements.

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Material	SARA 302 (EHSs) TPQ	SARA 304 EHSs RQ	CERCLA RQ	SARA 313 listed	CRA CODE	CAA 112(r) TQ	CAA TQ Ozone-Depleting Substances
Ethylene Glycol	Not listed	Not listed	5000	Listed	Not listed	Not listed	Not listed
1,4- Dioxane	Not listed	Not listed	100	Listed	U108	Not listed	Not listed
2-ethoxyethanol	Not listed	Not listed	1000	Listed	U359	Not listed	Not listed

The following components of this product are subject to state Right-to-Know reporting requirements.

Material	California Proposition 65	Massachusetts Right- to-Know	Minnesota Employee Right-to-Know	New Jersey Community Environmental Hazard Right-to-Know	New Jersey Right-to- Know Substance	Pennsylvania Right-to-Know	Rhode Island Right-to-Know
Ethylene Glycol	Not listed	Listed	Listed	Not listed	Listed	Listed	Listed
2-Butoxyethanol	Not listed	Listed	Not listed	Not listed	Not listed	Listed	Not listed
1,4- Dioxane	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Diethylene glycol	Not listed	Not listed	Listed	Not listed	Not listed	Listed	Not listed
2-ethoxyethanol	Listed	Listed	Listed	Not listed	Listed	Listed	Listed

Global Inventories:

Notification status:	
US - TSCA	Yes
Canada -DSL	Yes
Canada - NDSL	No
EU - EINECS	No
EU - ELINCS	No
EU - NLP	No
Australia - AICS	Yes
China - EICSC	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
Taiwan - NECI	Yes
New Zealand - NZIoC	Yes
Philippine - PICCS	No

EU - REACH Status:

A registration number is not available for substances in this mixture as the substances are exempted from registration, the annual tonnage does not require a registration or the registration is envisioned for a later registration deadline.

HMIS rating: Health: 1 Flammability: 1 Physical Hazard: 1

SECTION 16 – OTHER INFORMATION

LEGEND KEY

Abbreviation	Meaning
GHS	Globally harmonized System
CAS	Chemical Abstracts Services
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
OES	Occupational exposure standard
DNEL	Derived No Effect Level
MAK	Maximale Arbeitsplatz-Konzentration (maximum workplace concentration)
TRGS	Technische Regeln fur Gefahrstoffe (regulatory limits)
IARC	International Agency for Research on Cancer

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NTP	National Toxicology Program
COD	Chemical Oxygen Demand
BOD	Biological Oxygen Demand
PACs	Polycyclic Aromatic Compounds
PAH	Polycyclic Aromatic Hydrocarbon Content
DOT	Department of Transportation
IMDG	International maritime dangerous goods code
IATA, ICAO	International Air Transport Association, International Civil Aviation Organization
EPCRA	Emergency Planning and Community Right-to-Know Act
SARA	State Authorization Reciprocity Agreements
DSL	Domestic Substance List
WHMIS	Workplace Hazardous Materials Information System
TDG	Transport of Dangerous Goods
HCS	Hazard Communication Standard
CEPA	Center for European Policy Agreements
EINECS	European Inventory of Existing Commercial Chemical Substances
CPR	Controlled Products Regulations

Latest revision date: May 16, 2017 – Preparation of SDS in accordance to the GHS requirements
Date of the previous revision:

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.