

Material Safety Data Sheet

PC Rot Terminator, Hardener

MSDS No. 120612-13

Date of Preparation: 6/12/2012

Revision: 13

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: PC ROT TERMINATOR, HARDENER

Chemical Formula: Mixture

CAS Number: Mixture

General Use: Adhesive

Manufacturer: Protective Coating Company, 221 S. Third St., Allentown, PA 18102-4922, Emergency Phone 1-800-255-3924, International + 01 or +001-813-248-0585 (Please call collect if necessary) (24 Hr) CHEM-TEL
Contact Phone (610)432-3543, FAX (610)432-5043 (9AM-5PM EST)

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number
TOFA, reaction products with TEPA	68953-36-6
Tetraethylenepentamine	112-57-2

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Potential Health Effects

Target organs: Eye, skin, respiratory system, central nervous system.

Acute Effects

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

Eye: Severe eye irritation

Skin: If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Causes skin irritation.

Ingestion:

Chronic Health Hazard: This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Repeated or prolonged contact causes sensitization, asthma, and eczemas.

Medical Conditions Aggravated by Long-Term Exposure: skin disorders, asthma, allergies and eye conditions.

HMIS
H 2
F 1
R 0
PPE[†]B
[†]Sec. 8

Section 4 - First Aid Measures

General advice: Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

Inhalation: If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

Eye Contact: Rinse immediately with plenty of water for at least 15 minutes.

Skin Contact: Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.

Ingestion: Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in recovery position. Prevent aspiration of vomit. Turn victim's head to the side.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures

Flash Point: 195 C

Flash Point Method: Closed Cup

Autoignition Temperature: Not available.

LEL: Not available.

UEL: Not available.

Flammability Classification: Class IIIB

Extinguishing Media: Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical. Dry sand. Limestone powder.



Unusual Fire or Explosion Hazards: May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Downward personnel must be evacuated. Burning produces obnoxious and toxic fumes.

Hazardous Combustion Products: CO, CO₂, ammonia, and nitrogen compounds.

Fire-Fighting Instructions: Keep containers cool with water spray. Avoid skin contact. Wear butyl rubber boots, gloves, and body suit and a self-contained breathing apparatus. Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

Section 6 - Accidental Release Measures

Personal precautions: Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

Spills Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: Soak up in adsorbent material such as sand and collect in suitable containers. Residual resin may be removed using steam or hot soapy water.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Section 7 - Handling and Storage

Ventilation: Provide general or local exhaust ventilation systems if product is sanded or ground.

Respiratory Protection: Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator.

Protective Clothing/Equipment: Wear chemically protective gloves to prevent skin contact. Wear protective eyeglasses or chemical safety goggles.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Handling Precautions: None

Storage Requirements: Storage temperature: <90°F(32°C). Store in a cool, dry, well ventilated area.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 8 - Exposure Controls / Personal Protection

Ventilation: Provide general or local exhaust ventilation systems if possible.

Respiratory Protection: Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator.

Protective Clothing/Equipment: Wear chemically protective gloves to prevent skin contact. Wear protective eyeglasses or chemical safety goggles.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Exposure limit(s)

Section 9 - Physical and Chemical Properties

Physical State: liquid

Appearance and odor: light yellow, amine odor.

Vapor Pressure: <5.17mm Hg @ 21C

Vapor Density (Air=1): no data

Specific Gravity (H₂O=1, at 4 °C): 0.95

Water Solubility: slightly soluble

Boiling Point: >204 °C

Freezing/Melting Point: no data

V.O.C. : 0 gram/liter

Section 10 - Stability and Reactivity

Stability: PC ROT TERMINATOR, HARDENER is stable
Polymerization: Hazardous polymerization will not occur.
Chemical Incompatibilities: Strong acids or bases, oxidizing agents
Conditions to Avoid: Not applicable.
Hazardous Decomposition Products: Thermal oxidative decomposition can produce CO, CO2 in a fire.

Section 11- Toxicological Information

Toxicity Data:*

Lethal Dose Information LC50		Oral (mg/kg)	Skin (mg/kg)	Inhale (mg/l)	LC50
PC Rot Terminator Hardener		>2000 (rat)	8550 rabbit	No data	No data

Section 12 - Ecological Information

Ecotoxicity:
 Aquatic toxicity: No data
Environmental Fate: No data
Environmental Degradation: No data
Soil Absorption/Mobility: No data

Section 13 - Disposal Considerations

Disposal: Incinerate in furnace or bury in landfill according to applicable regulations; not a hazardous waste.
 Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):
Shipping Name: Not regulated
Shipping Symbols: Not required.
Hazard Class: Not Hazardous
ID No.: Not applicable.
Packing Group: Not determined
Label: Not required
Special Provisions (172.102):
 None

IMDG
Proper Shipping Name:
 Environmentally hazardous substance, liquid, n.o.s. (Tofa, reaction products with TEPA)
Hazard Class: 9
ID Number: UN3082
Packing Group: PG III

ICAO/IATA
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Polyamidoamine)
Hazard Class: 9
ID Number: UN3082
Packing Group: PG III

Section 15 - Regulatory Information

Country	Regulatory list	Notification
USA	TSCA	Included on inventory
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Included on inventory
Australia	AICS	Included on inventory
Japan	ENCS	Included on inventory
South Korea	ECL	Included on inventory
China	SEPA	Included on inventory
Philippines	PICCS	Included on inventory

WHMIS Hazard Classification

Very toxic material causing other effects

WHMIS Trade Secret Registry Number(s)

5017 Grant date 1/4/2005

EPA Regulations:

RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.): Not classified

CERCLA Hazardous Substance (40 CFR 302.4) listed/unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112 Not listed

CERCLA Reportable Quantity: Not listed

SARA 311/312 Codes: Not listed

SARA Toxic Chemical (40 CFR 372.65): Not listed

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ): Not listed

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

OSHA Specifically Regulated Substance (29CFR 1910.): Not listed

State Regulations:**Section 16 - Other Information****Storage Requirements:** Storage temperature: <90°F(32°C). Store in a cool, dry, well ventilated area.**Personal Hygiene:** Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities.

Wash contaminated goggles, faceshield, and gloves.

Prepared By: Charles Moloney**Notes:** A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions- in addition to those described herein- are required. Any health hazard and safety information herein should be passed on to your customers or employees as the case may be.**Disclaimer:** The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other natures are made hereunder with respect to the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

Material Safety Data Sheet

PC Rot Terminator, Resin

MSDS No. 120612-12

Date of Preparation: 6/12/2012

Revision: 11

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: PC ROT TERMINATOR, RESIN

Chemical Formula: Mixture

CAS Number: Mixture

General Use: Adhesive

Manufacturer: Protective Coating Company, 221 S. Third St., Allentown, PA 18102-4922, Emergency Phone 1-800-255-3924, International + 01 or +001-813-248-0585 (Please call collect if necessary) (24 Hr) CHEM-TEL
Contact Phone (610)432-3543, FAX (610)432-5043 (9AM-5PM EST)

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number
Polymer of epichlorohydrin and bisphenol A	25085-99-8
Alkylglycidyl ether (C12-C14)	68609-97-2
Neopentyl Glycol diglycidyl ether	17557-23-2

Trace Impurities:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Polymer of epichlorohydrin and bisphenol A	None estab.	None estab.	None estab.	None estab.	None estab.	None estab.	None estab.
Alkyl glycidyl ether	None estab.	none estab.	None estab.	none estab.	none estab.	none estab.	None estab.
Neopentyl Glycol diglycidyl ether	None estab.	None estab.	None estab.	None estab.	None estab.	None estab.	None estab.

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Color: colorless to yellow

Physical state: liquid

Odor: odorless to mild

Warning! May cause allergic skin reaction. May cause eye irritation.

HMIS

H 1

F 1

R 0

PPE[†]B

[†]Sec. 8

Potential Health Effects

Target organs: Eye, skin

Acute Effects

Inhalation: moderate irritation possible.

Eye: moderate eye irritation or sensitization.

Skin: moderate skin irritation or sensitization.

Ingestion: moderate irritation of mouth, throat, abdominal pain, nausea, vomiting, diarrhea, dizziness, possible coma.

Carcinogenicity: IARC, NTP, and OSHA do not list PC Rot Terminator, Resin as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: skin disorders and allergies and eye conditions.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air.

Eye Contact: Flush with water for at least 15 minutes, consult a physician.

Skin Contact: Wash with water, consult a physician.

Ingestion: Seek medical advise immediately. Remove stomach contents by medical personnel only.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures

Flash Point: 177°C (350°F)

Flash Point Method: Closed Cup

Autoignition Temperature: Not available.

LEL: Not available.

UEL: Not available.

Flammability Classification: Class IIIB

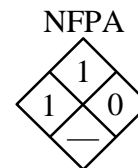
Extinguishing Media: Ignition will give rise to a Class B fire. In case of fire use: Carbon Dioxide (CO₂), Dry Chemical, Alcohol Foam.

Unusual Fire or Explosion Hazards: May generate toxic or irritating combustion products. May generate carbon monoxide gas.

Hazardous Combustion Products: CO, CO₂ and various phenolic compounds.

Fire-Fighting Instructions: Keep containers cool with water spray. Avoid skin contact. Wear butyl rubber boots, gloves, and body suit and a self-contained breathing apparatus. Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.



Section 6 - Accidental Release Measures

Spills Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: Soak up in adsorbent material such as sand and collect in suitable containers. Residual resin may be removed using steam or hot soapy water.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Section 7 - Handling and Storage

Handling Precautions: Wear chemically protective gloves to prevent skin contact. Wear protective eyeglasses or chemical safety goggles.

Storage Requirements: Storage temperature: <90°F(32°C). Store in a cool, dry, well ventilated area.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 8 - Exposure Controls / Personal Protection

Ventilation: Provide general or local exhaust ventilation systems if possible.

Respiratory Protection: Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator.

Protective Clothing/Equipment: Wear chemically protective gloves to prevent skin contact. Wear protective eyeglasses or chemical safety goggles.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Physical and Chemical Properties

Physical State: liquid

Appearance and odor: .colorless, epoxy odor.

Vapor Pressure: 0.06 mm Hg @ 70F

Vapor Density (Air=1): no data

Specific Gravity (H₂O=1, at 4 °C): 1.11

Water Solubility: insoluble.

Boiling Point: >300 °F

Freezing/Melting Point: 32 °F

Viscosity: same water.

pH: no data

V.O.C. : 0 gram/liter

Section 10 - Stability and Reactivity

Stability: PC Rot Terminator, Resin is stable.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Strong acids or bases, oxidizing agents

Conditions to Avoid: Not applicable.

Hazardous Decomposition Products: Thermal oxidative decomposition of PC Rot Terminator, Resin can produce CO, CO₂ in a fire.

Section 11- Toxicological Information

Toxicity Data:*

Lethal Dose Information(mg/kg)		Oral (mg/kg)	Skin (mg/kg)	Inhale	LC50
Polymer of epichlorohydrin and bisphenol A		>5000 rat	>20000 rabbit	No data	No data
Alkyl glycidyl ether		>10000 rat	No data	No data	No data
Neopentyl Glycol diglycidyl ether		No data	2150 rabbit	No data	No data

Section 12 - Ecological Information

ENVIRONMENTAL FATE

Movement & Partitioning

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Potential for mobility in soil is low (Koc between 500 and 2000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): <= 6.94E-09 atm*m³/mole; 25 °C Estimated.

Partition coefficient, n-octanol/water (log Pow): 3.7 - 3.9 Measured

Partition coefficient, soil organic carbon/water (Koc): 1,800 - 4,400 Estimated.

Persistence and Degradability

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Indirect Photodegradation with OH Radicals Rate Constant Atmospheric Half-life Method
6.69E-11 cm³/s 1.92 h Estimated.

OECD Biodegradation Tests:

Biodegradation Exposure Time Method
12 % 28 d OECD 302B Test

Theoretical Oxygen Demand: 2.35 mg/mg

ECOTOXICITY

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). Toxicity to aquatic species occurs at concentrations above material's water solubility.

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*), 96 h: 3.1 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, 48 h, immobilization: 1.4 - 1.7 mg/l

Toxicity to Micro-organisms

IC50; bacteria, Growth inhibition, 18 h: > 42.6 mg/l

Section 13 - Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Not regulated
Shipping Symbols: Not required.
Hazard Class: Not Hazardous
ID No.: Not applicable.
Packing Group: Not determined
Label: Not required
Special Provisions (172.102):
 None

IMDG

Proper Shipping Name:
 Environmentally hazardous substance, liquid, n.o.s. (Epoxy resin)
Hazard Class: 9 ID Number:
 UN3082 **Packing Group:** PG III
EMS Number: F-A,S-F
Marine pollutant.: Yes

ICAO/IATA

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Epoxy resin)
Hazard Class: 9 ID Number: UN3082 **Packing Group:** PG III
Cargo Packing Instruction: 914
Passenger Packing Instruction: 914
Additional Information
 MARINE POLLUTANT

Section 15 - Regulatory Information

OSHA Hazard Communication Standard

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

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes
Delayed (Chronic) Health Hazard No
Fire Hazard No
Reactive Hazard No

Sudden Release of Pressure Hazard No
Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous

Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

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

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

Remarks:

Liquid Epoxy Resins (LERs) are made by reacting bisphenol A and epichlorohydrin. Dow uses both CAS No. 25085-99-8 and 25068-38-6 for its LERs. Other manufacturers use CAS No. 25068-38-6 for their LERs. Accordingly, LER manufacturers consider that derivatives of LERs may be described using either CAS number as a starting material. **EPA**

Section 16 - Other Information

Storage Requirements: Storage temperature: <90°F(32°C). Store in a cool, dry, well ventilated area.

Personal Hygiene: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, faceshield, and gloves.

Prepared By: Charles Moloney

Notes: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions- in addition to those described herein- are required. Any health hazard and safety information herein should be passed on to your customers or employees as the case may be.

Disclaimer: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other natures are made hereunder with respect to the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.