



SAFETY DATA SHEET

Section 1 – Identification

Product Identifier: Polyphen Combustion Chamber Coating

Part Number: TL-PTG

Recommended Use: Thin film Thermal Barrier Coating

Restrictions on Use:

Manufacturer / Supplier:

Tech Line Coatings Industries, Inc
10840 Chapmany Hwy Unit A
Seymour, TN 37865
USA
Phone/Fax 1-865-773-0599
www.techlinecoatings.com

Keep out of reach of children.
For Industrial Use Only
Not recommended for use on Medical equipment.
Not recommended for use on Aviation equipment.

Emergency # N. America +1-800-535-5053
Intl. +1-352-323-3500

Section 2 – Hazards Identification

Signal Word: Danger

Symbols:



Table with Hazard Statements: Highly Flammable Liquid and Vapor, Harmful if Swallowed, Harmful if Inhaled, Causes Skin Irritation, Causes Serious Eye Irritation, Suspected of causing cancer, Suspected of causing genetic defects, Suspected of damaging fertility or the unborn child.

Table with GHS Classification and Category: Flammable Liquid (2), Acute Toxicity Oral (3), Acute Toxicity Dermal (3), Acute Toxicity Inhalation (3), Skin Irritation (2), Eye Irritation (2A), Carcinogenicity (2), Germ Cell Mutagenicity (2), Reproductive Toxicity (2).

Precautionary Statements:

Keep away from heat / sparks / open flames / hot surfaces. - No Smoking. Ground / bond container and receiving equipment. Use explosion proof electrical / ventilating / lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

In case of fire use alcohol-resistant foam, dry chemical or carbon dioxide

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Wear protective gloves / protective clothing (chemical proof). Wear eye protection and face protection. Wash hands, face and any exposed skin thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat drink or smoke when using this product. Do not breath fumes / mist / vapors / spray. Use only outdoors or in a well ventilated area.

If swallowed: immediately call a poison center / doctor for medical advice. Rinse mouth with water.

If on skin (or hair): wash with plenty of water. Call a poison center / doctor if you feel unwell or if irritation occurs. Immediately take off all contaminated clothing and wash it before reuse.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center / doctor for medical advice.

If in eyes: Rinse cautiously in water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advise / attention.

If exposed or concerned: Get medical advise / attention, from a poison center / doctor.

Dispose of Contents / container in accordance with regulations in your area. See section 13 for additional information.

Section 3 – Composition / Information On Ingredients

Component Name	Common Name / Synonyms	CAS#	% of Weight
Ethanol	Ethyl Alcohol	64-17-5	30 - 40%
Methyl Ethyl Ketone	MEK	78-93-3	30 - 35%
Methanol	Methyl Alcohol	67-56-1	4 - 5%
Isopropanol	Isopropyl alcohol	67-63-0	3 - 4%
Phenol	Hydroxybenzene	108-95-2	2 - 3%
COPPER, ELEMENTAL		7440-50-8	< 2%
Zinc		7440-66-6	< 1%
Formaldehyde		50-00-0	0.1 - 0.3%
Dimethyl Phthalate		131-11-3	< 0.1%

Section 4 – First Aid Measures**General advise:**

- Consult a physician. Show this Safety Data Sheet to the doctor in attendance. Move out of dangerous area.

After EYE Contact:

- Immediately irrigate with plenty of water for 15 minutes. Obtain medical attention if irritation persists.

After SKIN Contact:

- Remove contaminated clothing without delay. Flush skin thoroughly with water. Do not reuse clothing without laundering.

After INHALATION:

- Administer oxygen if there is difficulty in breathing. Obtain medical attention immediately if necessary.

After SWALLOWING:

- Call a physician immediately, ONLY induce vomiting at the instructions of a physician. Never give anything by mouth to an unconscious person.

See section 11 for additional information

Notes to Physician: Treat symptomatically.

Section 5 – Fire Fighting Measures

Extinguishing Media:

- Water spray, alcohol resistant foam, co2, dry chemical, dry sand. Cool closed containers exposed to fire with water spray.

Special Fire Fighting Procedures:

- Use full protective equipment, including self contained breathing apparatus **Unusual Fire And Explosion Hazards:**
- During emergency conditions, overexposure to decomposition products may cause a health hazard. Hazardous polymerization may take place if exposed to fire conditions. Water runoff can cause environmental damage, dike and collect water used to fight fire.

Specific Hazards Arising from the Chemical:

- Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.
- Containers may explode when heated.

Section 6 – Accidental Release Measures

Methods for Containment and Clean Up

- Turn off all sources of heat or ignition.
- Soak up with inert absorbent material.
- Keep in suitable, marked and closed containers for disposal.
- Use spark-proof tools and explosion-proof equipment.
- Remove sources of ignition.
- Warn other workers of spill.
- Wear protective equipment
- NIOSH Approved Respirator
- Gloves
- Safety Glasses
- Stop leak if you can do so without risk.
- Do not allow material to be released into the environment.
- Retain all contaminated water for removal and treatment. DO NOT flush to sewer.

Additional Information:

- See Section 7 for safe handling information.
- See Section 8 for PPE information
- See Section 13 for disposal information

Section 7 – Handling And Storage

Handling:

Do not breathe vapors or mists from spraying. Avoid contact with skin and eyes. Use with adequate ventilation to maintain exposure levels below established exposure limits. Wear personal protective equipment. If required wear an appropriate NIOSH approved respirator with paint prefilter. Use explosion-proof equipment. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Storage:

Store in area suitable for flammable liquids. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Protect from oxidizers, inorganic acids, aldehydes, and isocyanates.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Component	ACGIH TLV	OSHA PEL	NIOSH REL
Ethanol	1000 PPM	1000 PPM	1000 PPM
Methyl Ethyl Ketone	200 PPM	200 PPM	200 PPM
Methanol	200 PPM	200 PPM	200 PPM
Isopropanol	200 PPM	400 PPM	400 PPM
Phenol	5 PPM (SKIN)	5 PPM (SKIN)	5 PPM (SKIN)
COPPER, ELEMENTAL	1 mg/m3	1 mg/m3	1 mg/m3
Zinc	2 mg/m3	5 mg/m3	5 mg/m3
Dimethyl Phthalate	5 mg/m3	5 mg/m3	5 mg/m3
Formaldehyde	CEIL 0.3 ppm	TWA 0.75 ppm STEL 2 ppm	0.016 ppm

Engineering Controls: Exhaust ventilation.
Showers
Eyewash stations
Use in a well-ventilated area.

Respiratory Protection: Use NIOSH approved respirator if TWA/TLV limits are exceeded

Protective Gloves: CHEMICAL RESISTANT

Eye Protection: SAFETY GLASSES WITH SIDE SHIELDS OR GOGGLES

Other Protective Equipment: WEAR PROTECTIVE CLOTHING, CHEMICAL RESISTANT OR OTHER PROTECTIVE OUTERWEAR, AVOID CONTACT WITH SKIN OR EYES

Ventilation: Local Exhaust: Use To Maintain Below TWA Limits

Mechanical: Use Non-Sparking Equipment

Work / Hygienic Practices: wash thoroughly after handling product and before eating, drinking or smoking

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid

Color : Golden

Odor : Strong Alcohol/Solvent Smell

Odor Threshold: Not Established

pH : Not Established

Melting point / Freezing point: Not Established

Initial boiling point : 131 – 280° F

Flash point : > 16° F

Evaporation Rate: Not Established

Upper/lower flammability or explosive limits: Not Established

Vapor pressure Not Established

Vapor density Not Established

Relative density Not Established

Solubility(ies) Water: poor

Partition coefficient: n-octanol/water Not Established

Auto-ignition temperature	Not Established
Decomposition temperature	Not Established
Viscosity	Not Established
Total VOC	695 g/l

SECTION 10 – STABILITY AND REACTIVITY

Stability:	STABLE
Possibility of hazardous reactions:	Hazardous Polymerization: Will not occur.
Conditions to avoid:	Avoid storage of open containers at elevated temperatures.
Incompatible Materials:	oxidizers, inorganic acids, aldehydes, and isocyanates
Hazardous Decomposition Products:	Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Silicon dioxide. Carbon oxides. Formaldehyde.

SECTION 11 – TOXICOLOGICAL INFORMATION

Potential Health Effects

Inhalation	Harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Causes skin irritation.
Eyes	Causes eye irritation.
Acute Toxicity	

Ethanol	Oral LD50	LD50 Oral - rat - 7,060 mg/kg
	Inhalation LC50	LC50 Inhalation - rat - 10 h - 20000 ppm
	Dermal LD50	no data available
Methyl Ethyl Ketone	Oral LD50	LD50 Oral - rat - 2,737 mg/kg
	Inhalation LC50	LC50 Inhalation - mouse - 4 h - 32,000 mg/m ³ LC50 Inhalation - Mammal - 38,000 mg/m ³
	Dermal LD50	LD50 Dermal - rabbit - 6,480 mg/kg
Methanol	Oral LD50	LDLO Oral - Human - 143 mg/kg Remarks: Lungs, Thorax, or Respiration:Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. LD50 Oral - rat - 1,187 - 2,769 mg/kg
	Inhalation LC50	LC50 Inhalation - rat - 4 h - 128.2 mg/l LC50 Inhalation - rat - 6 h - 87.6 mg/l
	Dermal LD50	LD50 Dermal - rabbit - 17,100 mg/kg
Isopropanol	Oral LD50	LD50 Oral - rat - 5,045 mg/kg Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity).
	Inhalation LC50	LC50 Inhalation - rat - 8 h - 16000 ppm
	Dermal LD50	LD50 Dermal - rabbit - 12,800 mg/kg

Phenol	Oral LD50	LC50 Inhalation - Rat - 4-hr 4,470 ppm (33.0 mg/l)	LD50 Oral - rat - 317.0 mg/kg
		Remarks: Behavioral:Convulsions or effect on seizure threshold.	
	Inhalation LC50		LD50 Oral - rat - 410.0 - 650.0 mg/kg
	Dermal LD50		LC50 Inhalation - rat - 8 h - 900 mg/m ³
			LD50 Dermal - rabbit - 630.0 mg/kg
COPPER, ELEMENTAL	Oral LD50		No data available
	Inhalation LC50		No data available
	Dermal LD50		No data available
Zinc	Oral LD50		LD50 Oral - mouse - 7,950 mg/kg
	Inhalation LC50		LC50 Inhalation - mouse - 2,500 mg/m ³
	Dermal LD50		No data available
Dimethyl Phthalate	Oral LD50		LD50 Oral - rat - 8,239 mg/kg
	Inhalation LC50		no data available
	Dermal LD50		LD50 Dermal - rabbit - > 11,940 mg/kg
Formaldehyde	Oral LD50		No data available
	Inhalation LC50		No data available
	Dermal LD50		No data available

Skin Corrosion/Irritation

Ethanol

Skin - rabbit - Irritating to skin. - 24 h

Methyl Ethyl Ketone

Skin - rabbit - Skin irritation - 24 h

Methanol

Skin - rabbit - No skin irritation

Isopropanol

Skin - rabbit - Mild skin irritation

Phenol

Skin - rabbit - Severe skin irritation - 24 h

Copper

May irritate skin.

Zinc

Skin - rabbit - Mild skin irritation - 24 h

All other

No data available

Serious Eye Damage/Eye Irritation

Ethanol

Eyes - rabbit - Mild eye irritation - 24 h - Draize Test

Methyl Ethyl Ketone no

data available

Methanol

Eyes - rabbit - No eye irritation

Isopropanol

Eyes - rabbit - Eye irritation - 24 h

Phenol
Eyes - rabbit - Severe eye irritation

Copper
May irritate eyes.

Zinc
Eyes - rabbit - Mild eye irritation - 24 h

All other
No data available

Respiratory Or Skin Sensitization

No data available

Germ Cell Mutagenicity

Phenol
In vitro tests showed mutagenic effects

Methanol
Genotoxicity in vitro - Ames test - *S. typhimurium* - with and without metabolic activation – negative
Genotoxicity in vitro - in vitro assay - fibroblast - negative Mutation in mammalian somatic cells.
Genotoxicity in vivo - mouse - male and female - Intraperitoneal – negative

Zinc
Genotoxicity in vitro - Hamster - Embryo
Unscheduled DNA synthesis
Genotoxicity in vitro - Hamster - Embryo Morphological transformation.
Genotoxicity in vitro - Hamster - Embryo
Sister chromatid exchange
Genotoxicity in vivo - guinea pig - Inhalation
Unscheduled DNA synthesis

All other
No data available

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Phenol)
1 – Group 1: Carcinogenic to humans (Formaldehyde)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Reasonably anticipated to be a human carcinogen (Formaldehyde)
Known to be human carcinogen (Formaldehyde)

OSHA: May Cause Cancer (formaldehyde)

This product contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Reproductive Toxicity

Ethanol
Reproductive toxicity - Human - female - Oral
Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.

Methanol
Genotoxicity in vitro - Ames test - *S. typhimurium* - with and without metabolic activation – negative
Genotoxicity in vitro - in vitro assay - fibroblast - negative Mutation in mammalian somatic cells.
Genotoxicity in vivo - mouse - male and female - Intraperitoneal - negative

Zinc

Developmental Toxicity - rat - Oral

Specific Developmental Abnormalities: Homeostasis Effects

on Newborn: Stillbirth.

Effects on Newborn: Growth statistics (e.g., reduced weight gain). No data available

Dimethyl Phthalate

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals. All

other

No data available

Specific Target Organ Toxicity Single Exposure

Methyl Ethyl Ketone

May cause drowsiness or dizziness.

Isopropanol

May cause drowsiness or dizziness.

Methanol

Causes damage to organs

Copper

May cause respiratory irritation.

All other

No data available

Specific Target Organ Toxicity Repeated Or Prolonged Exposure

Phenol

May cause damage to organs through prolonged or repeated exposure.

All other

No data available

Aspiration Hazard

No data available

SECTION 12 – ECOLOGICAL INFORMATION

General Comments: Do not allow material to be released into the environment without proper governmental permits

Environmental Toxicity:

Ethanol

Toxicity to fish

No data available

Toxicity to daphnia and other aquatic invertebrates

No data available

Methyl Ethyl Ketone

Toxicity to fish

mortality NOEC - *Cyprinodon variegatus* (sheepshead minnow) - 400 mg/l - 96 h
LC50 - *Pimephales promelas* (fathead minnow) - 3,130 - 3,320 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

LC50 - *Daphnia magna* (Water flea) - > 520 mg/l - 48 h
EC50 - *Daphnia magna* (Water flea) - 7,060 mg/l - 24 h

Methanol

Toxicity to fish

mortality LC50 - *Lepomis macrochirus* (Bluegill) - 15,400.0 mg/l - 96 h
NOEC - *Oryzias latipes* - 7,900 mg/l - 200 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - *Daphnia magna* (Water flea) - > 10,000.00 mg/l - 48 h

Toxicity to algae	Growth inhibition EC50 - <i>Scenedesmus capricornutum</i> (fresh water algae) - 22,000.0 mg/l - 96 h
Isopropanol	
Toxicity to fish	LC50 - <i>Pimephales promelas</i> (fathead minnow) - 9,640.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - <i>Daphnia magna</i> (Water flea) - 5,102.00 mg/l - 24 h Immobilization EC50 - <i>Daphnia magna</i> (Water flea) - 6,851 mg/l - 24 h
Toxicity to algae	EC50 - <i>Desmodesmus subspicatus</i> (green algae) - > 2,000.00 mg/l - 72 h EC50 - Algae - > 1,000.00 mg/l - 24 h
Phenol	
Toxicity to fish	LC50 - <i>Leuciscus idus</i> (Golden orfe) - 14.00 - 25.00 mg/l - 48 h LC50 - <i>Carassius auratus</i> (goldfish) - 36.10 - 68.80 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - <i>Daphnia magna</i> (Water flea) - 12.00 mg/l - 24 h EC100 - <i>Daphnia magna</i> (Water flea) - 100.00 mg/l - 24 h
Toxicity to algae	EC50 - <i>Chlorella vulgaris</i> (Fresh water algae) - 370.00 mg/l - 96 h
COPPER, ELEMENTAL	
Toxicity to fish	mortality LOEC - <i>Oncorhynchus mykiss</i> (rainbow trout) - 0.022 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	mortality NOEC - <i>Daphnia</i> - 0.004 mg/l - 24 h EC50 - <i>Daphnia magna</i> (Water flea) - 0.04 - 0.05 mg/l - 48 h
Zinc	
Toxicity to fish	LC50 - <i>Cyprinus carpio</i> (Carp) - 450 µg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - <i>Daphnia magna</i> (Water flea) - 0.068 mg/l - 48 h mortality NOEC - <i>Daphnia</i> (water flea) - 0.101 - 0.14 mg/l - 7 d
Dimethyl Phthalate	
Toxicity to fish	LC50 - <i>Pimephales promelas</i> (fathead minnow) - 121.00 mg/l - 96 h LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) - 56.00 mg/l - 96 h LC50 - <i>Lepomis macrochirus</i> (Bluegill) - 50.00 mg/l - 96 h LC50 - <i>Cyprinodon variegatus</i> (sheepshead minnow) - 29.00 mg/l - 96 h h NOEC - <i>Oncorhynchus mykiss</i> (rainbow trout) - 38 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - <i>Daphnia magna</i> (Water flea) - 46.00 mg/l - 48 h
Formaldehyde	
Toxicity to fish	No data available
Toxicity to daphnia and other aquatic invertebrates	No data available
Persistence and degradability	no data available on mixture
Bioaccumulative potential	no data available on mixture
Copper	Bioaccumulation <i>Cyprinus carpio</i> (Carp) - 40 d - 200 mg/l Bioconcentration factor (BCF): 108
Zinc	Bioaccumulation Algae - 7 d at 16 °C - 5 µg/l Bioconcentration factor (BCF): 466
Mobility in soil	no data available on mixture

Other adverse effects no data
available on mixture

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product :

Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging

Dispose of as unused product.

SECTION 14 – TRANSPORTATION INFORMATION

Hazardous for Shipping: Yes

Based on 49 CFR, IATA and IMDG:

UN Number: UN1263

UN Proper Shipping Name: Paint

Hazard Class: 3 **Packing Group:** II

Labels: Flammable Liquid

Placards: Flammable Liquid

SECTION 15 – Regulatory Information

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710: All hazardous ingredients are on the TSCA Chemical Substance Inventory.

Component	SARA 302	SARA 313	Massachusetts RTK	Pennsylvania RTK	New Jersey RTK	California Prop 65 list
Ethanol	No	No	Yes	Yes	Yes	No
Methyl Ethyl Ketone	No	No	Yes	Yes	Yes	No
Methanol	No	Yes	Yes	Yes	Yes	No
Isopropanol	No	Yes	Yes	Yes	Yes	No
Phenol	Yes	Yes	Yes	Yes	Yes	No
COPPER, ELEMENTAL	No	Yes	Yes	Yes	Yes	No
Zinc	No	Yes	Yes	Yes	Yes	No
Dimethyl Phthalate	No	Yes	Yes	Yes	Yes	No
Formaldehyde	Yes	Yes	Yes	Yes	Yes	Yes

SARA 311 / 312 Hazards: Flammable Hazard ,Acute Health Hazard, Chronic Health Hazard

SECTION 16 – OTHER INFORMATION

Date Prepared: 11/19/2014

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