

SAFETY DATA SHEET

1. IDENTIFICATION

- 1.1** Product identifier
 Trade name : PSC 2099 Bonding Primer Part B
 Chemical name : Glycidoxypropyltrimethoxysilane
- 1.2** Recommended use of the product and restrictions on use
 Recommended use : Industrial Use Only, Adhesive, binding agents.
 Non- recommended use(s) : None known
- 1.3** Details of the supplier of the safety data sheet
 Company : Polymer Science Corporation.
 : Unit 1133, 6027 – 79 Avenue S.E
 : Calgary, Alberta. Canada T2C 5P1
 Telephone : 403 287 2751
 Fax : 403 287 2766
 Website : www.polymersciencecorp.com
- 1.4** Emergency telephone number
 Emergency : In case of emergency call CANUTEC: 613-996-6666

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Serious Eye Damage : Category 1

2.2 Label Elements

Pictogram :



Signal word : Danger
 Hazard statement : H318: Causes serious eye damage.
 Precautionary Statements : P280: Wear protective gloves/protective clothing/eye protection/face protection.

Other Hazards: : None known
 P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

3 COMPOSITION / INFORMATION ON INGREDIENTS

- 3.1** Substances / Mixture : Mixture
 Hazardous Substance Name : Glycidoxypropyl trimethoxysilane
 CAS-No : 2530-83-8
 Chemical nature : Organosilane

3.2 Substance

Chemical Name.

HAZARDOUS INGREDIENTS

	C.A.S.#	WEIGHT %
Glycidoxypropyl trimethoxysilane	2530-83-8	60 - 100
Proprietary non hazardous ingredients	N/A	20 - 40

4 FIRST AID MEASURES

- 4.1** Description of first aid measures
 General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all Cases of doubt seek medical advice.

EYE CONTACT: Rinse cautiously with eyewash solution or clean water, holding the eyelids apart for several minutes. Remove contact lenses if present and easy to do. If eye irritation persists: Get medical attention.

SKIN CONTACT: If on skin or hair, take off immediately all contaminated clothing and shoes. Rinse skin, washing thoroughly with water. Get medical attention if irritation persists. Wash clothing before reuse. Thoroughly clean shoes before reuse.

INHALATION: Remove patient from exposure. Get medical attention if symptoms occur.

INGESTION: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

- 4.2 Most important symptoms and effects, both acute and delayed: Causes serious eye damage
- 4.3 Protection of first-aiders: First aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exist
- 4.4 Notes to Physician: Treat symptomatically and supportively.
- 4.5

5 FIRE-FIGHTING MEASURES

- 5.1 Extinguishing media
 Suitable extinguishing media : Water spray, Alcohol resistant foam, Carbon dioxide (CO₂), Dry chemical.
 Unsuitable extinguishing media : None known
- 5.2 Hazards : Exposure to combustion products may be a hazards to health
 Hazardous combustion products : Carbon oxides, Silicon oxides, Formaldehyde
- 5.3 Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so.
 Evacuate area.
- 5.4 Special protective equipment for fire-fighters
 In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6 ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures.
 Use personal protective equipment. Wear chemical safety glasses, rubber boots and heavy rubber gloves. Prevent further leakage or spillage if safe to do so.
- 6.2 Environmental precautions
 Do not allow to enter drains, waterways, sewers, basements or confined areas.
 Do not discharge into the subsoil / soil. Absorb spills with inert material and place in a chemical waste container. If the product contaminates rivers and lakes or drains inform the respective authorities. Prevent spreading over a wide area (e.g. by containment or oil barriers) Retain and dispose of contaminated wash water.
- 6.3 Methods and materials for containment and cleaning up
 Soak up with inert absorbent material (e.g. sand, silica gel, universal binder, sawdust) Keep in suitable, closed containers for disposal. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

7 HANDLING AND STORAGE

- 7.1 Precautions for safe handling
 Avoid all personal contact. Use personal protective equipment. Avoid generation of mist, avoid inhalation if present.. Provide adequate ventilation. Do not swallow or get it in eyes Emergency shower and eye wash facilities should be readily available. Do not eat, drink or smoke at the work place. Keep container tightly closed. Keep away for water and protect from moisture. Take care to prevent spills, waste and minimize release to the environment.
- 7.2 Hygiene considerations.
 Wash hands before breaks and after work. Remove soiled or soaked clothing immediately. Wash contaminated clothes before reuse. Do not eat, drink or smoke when handling this product. Remove contaminated clothing and protective equipment before entering eating areas.
- 7.3 Safe storage procedures
 Keep in properly labeled containers. Keep tightly closed.
- 7.4 Materials to Avoid
 Do not store with strong oxidizing agents.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Hazardous Components (Chemical Name)	Occupational Exposure Limits
Glycidoxypropyl trimethoxysilane	TWA: 0.5 ppm. Basis: DCC OEL
Occupational exposure limits of decomposition products	
Methanol	ACGIH TWA: 200ppm. ACGIH STEL: 250 ppm. NIOSH REL TWA: 200 ppm, 260 mg/m ³ . NIOSH REL ST: 250 ppm, 325 mg/m ³ . OSHAZ-1 TWA: 200 ppm, 260 mg/m ³

8.2 EXPOSURE CONTROLS ENGINEERING CONTROLS

Use local exhaust ventilation to maintain airborne concentrations at safe levels. Suitable respiratory equipment should be used in cases of insufficient ventilation or where demand it. Minimize workplace exposure concentrations.

PERSONAL PROTECTIVE EQUIPMENT

- Respiratory Equipment : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure demonstrates that exposure are within recommended exposure guidelines. The filter type to be used is Organic Vapor Type.
- Eye Protection : Use tightly fitting chemical splash goggles. Wear face shield if splashing hazard exists.
- Hand Protection : Use impermeable gloves. Neoprene or butyl-rubber gloves. Change gloves often. Wash hands before breaks and the end of the workday.
- Body Protection : Use impervious clothing and chemical resistant boots. Consider using resistant coveralls and aprons, if extensive exposure is possible.
- Other Protective Equipment : Ensure that eyewash stations and safety showers are close to the workstation location.

General Hygiene Consideration : Do not breathe mist or vapor. Avoid all contact. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not take contaminated clothes home.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Physical State : Liquid.
Color : Colorless to pale yellow.
Odor : Aromatic

Properties

Boiling Point : 250 °C
Melting Point : Not available
Freezing Point : Not available
Flash Point : > 94 °C
PH : Not available
Specific Gravity : 1.0 – 1.05 g/ cm³
Viscosity : Not available
Evaporation rate : Not data available
Solubility in water : No data available
Vapour pressure : Not data available
Vapour density : No data
Auto ignition Point : Not data available
Decomposition Temperature : Not data available
Explosive properties : Not explosive
Oxidising Properties : This mixture is not classified as oxidizing

10 STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard

Chemical Stability : Stable under normal conditions.

Possibility of hazardous reactions : Use at elevated temperatures may form highly hazardous compound. Can react with strong oxidizing agents. When heated to temperatures above 150 °C in the presence of air, product can form formaldehyde vapors. Safe handling conditions may be maintained by keeping vapor concentrations within the occupational exposure limit for formaldehyde. Hazardous decomposition products will be formed upon contact with water or humid air. Hazardous decomposition products will be formed at elevated temperatures.

Conditions to avoid : Exposure to moisture.

Incompatible materials : Oxidizing agents, Water.

Hazardous decomposition products : Contact with water or humid air: Methanol
Thermal decomposition: Formaldehyde.

11 TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

INGREDIENTS

Glycidoxypropyl trimethoxysilane

Oral LD50

(rat) 7.5 ml/Kg

Assessment: The substance or mixture has no acute oral toxicity

Remarks: On basis of test data

Inhalation LC50

>5.3 mg/l

Exposure time: 4 h

Test atmosphere: dust / mist

Remarks: on basis of test data(rat) 2.06 g/m³

Dermal LD50

Acute toxicity estimate: 4,276 mg/Kg

LD50 (rabbit): 3.97 ml/Kg

Remarks: On basis of test data

Skin corrosion/irritation : Not classified based on available information.
Species: Rabbit. Result: Mild skin irritation.

Serious eye damage/irritation : Causes serious eye damage
Species:Rabbit. Result: irreversible effects on the eye.

Respiratory sensitization : Not classified based on available information

Skin sensitization : Does not cause skin sensitization.
: Test Type: Human repeat insult patch test (HRIPT)
: Species: Human. Results: Negative
: Test Type: Maximization Test
: Species: Guinea pig. : Result: Negative

Germ Cell Mutagenicity : Not classified based on available information
: Genotoxicity in vitro
: Test Type: Bacterial reverse mutation (AMES)
Result: Positive
: Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: Positive
: Test Type:
: Mutagenicity (in vitro mammalian cytogenetic test)
Result: Positive

: **Genotoxicity in vivo**
 : Test Type: sister chromatid exchange assay
 Species: Rabbit
 Application Route: Intravenous injection
 Result: Negative
 : Test Type: sister chromatid exchange assay
 Species: Rabbit
 Application Route: Intraperitoneal injection.
 Result: Negative
 : Germ cell mutagenicity Assessment: Animal testing did not show any mutagenic effects.

Carcinogenicity
 : Not classified based on available information
 : Species: Mouse
 Application Route: Skin contact
 Result: Negative
 Carcinogenicity Assessment: Animal testing did not show any carcinogenic effects

Reproductive toxicity
 : Not classified based on available information
 : Effects on fertility
 Test Type: One-generation reproduction toxicity study
 Species: Rat, male and female
 Application Route: Ingestion
 Symptoms: No effects on fertility
 : Effects on fetal development
 Test Type: Prenatal development toxicity study (teratogenicity)
 Species: Rat, male and female
 Application Route: Ingestion
 Symptoms: No effects on fetal development

Reproductive toxicity Assessment: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Specific Target Organ Toxicity Single Exposure
 : Not Classified based on available information.

Specific Target Organ Toxicity Repeated Exposure
 : Not Classified
 Routes of exposure: inhalation (dust / mist / fume)
 Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less
 Routes of exposure: Ingestion
 Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less

Aspiration Toxicity Further Information
 : Not classified based on available information
 : Glycidoxypropyltrimethoxysilane was found to be genetically active in Ames reverse mutation assays, In vitro sister chromatid exchange assays, and an in Vivo mouse micronucleus assays. This ingredient was not genetically active in an In Vivo cytogenetic assay (mice) or in an In Vivo sister chromatid exchange assay (rabbit, rats). The potential relevance of these data to humans is not known.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to Fish	Toxicity to Daphnia and other aquatic invertebrates	Toxicity to Algae	Toxicity to microorganisms
LC50 (Oncorhynchus mykiss (rainbow trout)): 237 mg/l Exposure time: 96 h	EC50 (Simocephalus vetulus): 324 mg/l Exposure time: 48 h	ErC50 (Anabaena flos-aquae): 119 mg/l Exposure time: 72 h	EC50:>100 mg/l Method: OECD Test Guideline 209
LC50 (Cyprinus carpio (Carp)): 276 mg/l Exposure time: 96 h	EC50 (Daphnia magna (water flea)): 710 mg/l Exposure time: 48 h Method OECD Test Guideline 202 Remarks: On basis of test data		
	Chronic Toxicity NOEC (Daphnia magna (Water flea))> 100 mg/l Exposure time: 21 d		

12.2 Persistence and Degradability Biodegradability

: Result: Not readily biodegradable
 Biodegradation: 37%
 Exposure time: 28 d
 Method: OECD Test Guideline 301A

Stability in water

: Degradation half life: 6.5 h (24.5 °C) pH: 7
 Method: OECD Test Guideline 111

12.3 Bioaccumulative potential

: Partition coefficient: n-octanol/water : log Pow: -2.6

12.4 Mobility in Soil

: No data available

12.5 Other adverse effects

: No data available

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of this material and its container to hazardous or special waste collection point. Do not discharge substance/product into sewage system. Do not contaminate pond, waterways or ditches with chemical or used container. The product should not be allowed to enter drains, water courses or the soil.

14 TRANSPORTATION INFORMATION

- 14.1 TDG : Not regulated as a dangerous good.
14.2 Shipping Name : Not applicable
14.3 Hazard Class : Not applicable
14.4 Packing Group : Not applicable

15 OTHER INFORMATION

- Preparation Date : May 2, 2017
SDS prepared by : Polymer Science Corp. 403 287 2751

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