Polymer Solutions Safety Data Sheet

PCT SDS according to Regulation (EC) No. 1907/2006 Version: 1.15 EU Revised: 08.03.2016

SECTION 1: Identification of the substance/mixture and of the company

1.1. Product identifier

First Contact Polymer Solutions and Thinners - All Sizes, All Colors.

Chemical name: Mixture

Mixture of solvents and inert polymer blend with trace inert additives.
Thinner products contain no inert polymers or additives.

REACH registration number: A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Aerospace, Astronomical and Photonic Coatings for Surface Protection & Cleaning.

1.3. Details of the supplier of the safety data sheet

Company: Photonic Cleaning Technologies, LLC
1895 Short Lane, Bldgs 1 & 2, Platteville, Wisconsin USA

Telephone: +1 608-467-5396 email address: safety@photoniccleaning.com

1.4. Emergency telephone number

International emergency number: +1 703-527-3887 or please contact regional representative in your country.

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP] Flammable Liquid, Category 2, H225
For the full classifications not written out in full in this section the full text can be found in section 16.

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards: F, Highly flammable, R11
For the full classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements (Labelling (EC) No 1272/2008)

Globally Harmonized System, EU (GHS)	*Reduced labelling (≤125 ml)*
Hazard Pictograms: 	*Hazard pictograms* 
Signal word: Danger	*Signal word: Danger*

2.2. Label elements (Labelling (EC) No 1272/2008) -continued-

Hazard Statement:

H225	Highly flammable liquid and vapour.

Precautionary Statements (Prevention):

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P280f	Wear protective gloves and eye/face protection.
P280d	Wear eye/face protection.
P243	Take precautionary measures against static discharge.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P233	Keep container tightly closed.
P242	Use only non-sparking tools.
P240	Ground/bond container and receiving equipment.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303 + P361 + P352	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
P337 + P311	If eye irritation persists: Call a POISON CENTER or doctor/physician.
P370 + P378.15	In case of fire: Use dry powder, alcohol-resistant foam or carbon dioxide for extinction.

Precautionary Statements (Storage):

P403 + P235	Store in a well-ventilated place. Keep cool.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point. Dried polymer film is inert and can be disposed of in trash.

According to Directive 67/548/EEC or 1999/45/EC accordingto Annex I & VI of the Reg.(EC) No 1272/2008

Hazard symbol(s)

F	Highly flammable.

R-phrase(s)

R11	Highly flammable.

S-phrase(s)

S16	Keep away from sources of ignition - No smoking.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature: Mixture of flammable solvents and inert polymer blend

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

Remarks No disclosure requirement according to Regulation (EC) No 1907/2006

3.2. Mixtures – Proprietary Mixtures

CHEMICAL NAMES	*CAS NUMBER*	*MASS CONTENT*	*EXPOSURE LIMITS IN AIR (UNITS)*	
			ACGIH TLV	*OSHA PEL*
FORMAL GLYCOL	[646-06-0]	<20-45%	none est.	none est.
BIS(METHOXY)METHANE	[109-87-5]	<10-30%	1000 PPM	1000 PPM
ETHYL ALCOHOL	[64-17-5]	<20-60%	400 PPM	400 PPM
ACETONE	[67-64-1]	<10-30%	750 PPM	750 PPM
ETHYL LACTATE	[97-64-3]	<10%	none est.	none est.
ISOPROPYL ALCHOL	[67-63-0]	<10-50%	400 PPM	200 PPM
ETHYL ACETATE	[141-78-6]	<10%	250 PPM	310 PPM
INERT POLYMER BLEND	None			
PROPRIETARY TRACE RELEASE AGENTS				

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled: Keep patient calm, remove to fresh air, seek medical attention.

On skin contact: Wash thoroughly with soap and water.

On contact with eyes: Rinse with plenty of water, Consult an eye specialist.

On ingestion: Immediately rinse mouth and then drink 200/300 ml of water, seek medical attention. No milk. No Digestible oils. Caution if victim vomits. Keep airways free.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media: Water, dry powder, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media: For this mixture no limitations of extinguishing agents are given.

5.2. Special hazards arising from the substance or mixture

nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated.

Flammable. Combustible. Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures. Pay attention to flashback.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for fire-fighters

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Breathing protection required. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

For small amounts: Let dry and peel up polymer or Rinse away with water.
For large amounts: Dike spillage. Pump off product.
For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.
Cleaning operations should be carried out only while wearing breathing apparatus.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Observe Label precautions. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash hands thoroughly after handling.

Protection against fire and explosion:
Vapors may form explosive mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

7.2. Conditions for safe storage, including any incompatibilities

Suitable materials for containers: carbon steel (iron), Stainless steel 1.4401, Stainless steel 1.4301 (V2), aluminum, tin (tinplate), glass, zinc coated, polyethylene, polypropylene, nylon. Protect from light to avid color change. Further information on storage conditions: Keep container tightly closed in a cool place.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters-

Major Components with occupational exposure limits
Long-term exposure- systemic effects, Inhalation: 19.0 mg/m3 for 1,3-dioxolane

Long-term exposure- systemic effects, Dermal: 4.1 mg/kg for 1,3-dioxolane

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Breathing protection if breathable aerosols/dust are formed. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection: Based on guidelines for 1,3-dioxolane
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
butyl rubber (butyl) - 0.7 mm coating thickness
Suitable materials short-term contact and/or splashes (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN 374)
fluoroelastomer (FKM) - 0.7 mm coating thickness, chloroprene rubber (CR) - 0.5 mm coating thickness
polyvinylchloride (PVC) - 0.7 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid contact with the skin, eyes and clothing. Do not inhale gases/vapors/aerosols.Take off immediately all contaminated clothing.
Store work clothing separately.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	ether-like
Odour threshold:	not determined
pH value:	not determined
The substance does not dissociate.	
Melting temperature:	unknown. above -95 °C
Boiling temperature:	unknown.below 75.6 °C
Flash point:	unknown. below -6 °C
Evaporation rate:	unknown.
Flammability:	Highly flammable. Mixture of flammable solvents.
Lower explosion limit:	For liquids not relevant for classification and labelling, The lower explosion point may be 2 – 15 °C below the flash point. Linear Estimate from LEL: 2 vol% based on below acetone,ethanol,isopropanol,ethyl acetate,formyl glycol 2,3,2,2,2 vol% each
Upper explosion limit:	For liquids not relevant for classification and labelling. Linear Estimate from UEL: 12 vol% acetone,ethanol,isopropanol,ethyl acetate,formylglycol 13,19,unk,11,12 vol%
Ignition temperature:	approx. 250 °C for formyl glycol (Directive 92/69/EEC, A.15)
Vapour pressure:	unknown
Density:	1.0 g/cm3 -(20 °C)
Thermal decomposition:	~300 °C
Relative density:	1.0
Relative vapor density (air)	approximately:2.0 Estimation
Solubility in water:	Solvents. > 1,000 g/l (25 °C)
Partitioning coefficient n-octanol/water (log Kow):	unknown

Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature. (Method: Directive 92/69/EEC, A.13)
	Thermal decomposition above the indicated temperature is possible.	
Viscosity, dynamic:	unknown (20 °C)	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	(other)
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

9.2. Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
pKA:	unknown The substance does not dissociate.	
Surface tension:	unknown	(OECD Guideline 112)
		(OECD-Guideline 115, OECD harmonized ring method)
Grain size distribution:	The substance / product is marketed or used in a non solid or granular form.	

SECTION 10: Stability and Reactivity

10.1. Reactivity
Vapours may form explosive mixture with air.
Corrosion to metals: Corrosive effects to metal are not anticipated.

Formation of flammable gases: Forms no flammable gases in the presence of water.
Method: Flammability (contact with water)

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
May react with acids. Evolution of explosive
gases/vapors. Reacts with strong oxidizing agents.

10.4. Conditions to avoid
Avoid heat.

10.5. Incompatible materials
Substances to avoid:
oxidizing agents, acids, bases, amines, atmospheric oxygen, reducing agents

10.6. Hazardous decomposition products
Possible decomposition products:
carbon monoxide, formaldehyde...%, hydrogen carbon,oxides

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
In animal studies the primary components are virtually nontoxic after a single ingestion. In animal studies the substance is virtually nontoxic after short-term inhalation.

Experimental/calculated data: unknown
For 1,3-dioxolane, rat (oral): > 2,000 mg/kg (OECD Guideline 401)
For 1,3-dioxolane LC50 rat (by inhalation): 68.4 mg/l 4 h (similar to OECD guideline 403).

Irritation

Assessment of irritating effects:
May cause slight irritation to the skin. Eye contact causes irritation.
Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant, Serious eye damage/irritation rabbit: Irritant.

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies on primary components.
Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: Non-sensitizing. (OECD Guideline 429)

Germ cell mutagenicity

Assessment of mutagenicity:
Results from a number of mutagenicity studies with microorganisms, mammalian cell culture and mammals are available. Taking into account all of the information, there is no indication that the substance is mutagenic.

Carcinogenicity

Assessment of carcinogenicity:
No reliable data was available concerning carcinogenic activity.

Reproductive toxicity

Assessment of reproduction toxicity:
On the basis of animal study findings, an effect on fertility cannot be excluded when given in high doses. Based on available Data, the classification criteria are not met.

Developmental toxicity

Assessment of teratogenicity:
The potential to cause toxicity to development cannot be excluded at maternally toxic doses. Based on available Data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Assessment of STOT single: Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
The substance may cause damage to the hematological system after repeated ingestion of high doses.
The substance may cause damage to the hematological system after repeated inhalation of high doses.
The effects were only observed at doses/concentrations not relevant for classification and/or practical use conditions.

Aspiration hazard not applicable

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations. Data given for primary component of potential concern.

Toxicity to fish:
For 1,3-dioxolane LC50 (96 h) > 4,600 mg/l, Leuciscus idus (DIN 38412 Part 15, static) Nominal concentration. No effects at the highest test concentration. Literature data.

For 1,3-dioxolane LC50 (96 h) 10,000 mg/l, Cyprinodon variegatus (static) Nominal concentration. Literature data.

For 1,3-dioxolane LC50 (96 h) > 95.4 mg/l, Lepomis macrochirus (OECD 203; ISO 7346; 84/449/EEC, C.1, semistatic) The statement of the toxic effect relates to the analytically determined concentration. Limit concentration test only (LIMIT test). No effects at the highest test concentration.

Aquatic invertebrates:
For 1,3-dioxolane EC50 (48 h) 7,650 mg/l, Daphnia magna (static) Nominal concentration. Literature data.

For 1,3-dioxolane EC50 (48 h) > 772 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic) The statement of the toxic effect relates to the analytically determined concentration. . Literature data.

Aquatic plants: For 1,3-dioxolane
(14 d) 1,000 mg/l, Pseudokirchneriella subcapitata (static) Nominal concentration. Literature data.

For 1,3-dioxolane EC50 (72 h) > 877 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static) The statement of the toxic effect relates to the analytically determined concentration. The product is highly volatile. Tested in a closed test system. No effects at the highest test concentration.

Microorganisms/Effect on activated sludge:
For 1,3-dioxolane EC0 (30 min) 3,000 mg/l, activated sludge, domestic, adapted (DIN EN ISO 8192, static)
Chronic toxicity to fish: No data available regarding toxicity to fish.
Chronic toxicity to aquatic invertebrates: No data available regarding toxicity to daphnids.
Assessment of terrestrial toxicity:

No data available concerning terrestrial toxicity.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria). Poorly biodegradable. Easily eliminated from water. The product is highly volatile and can be eliminated from water by stripping.

Elimination information:
For 1,3-dioxolane 0 % BOD of the ThOD (28 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, activated sludge, domestic)

For 1,3-dioxolane 94 % DOC reduction (28 d) (OECD 302B; ISO 9888; 88/302/EEC,part C) (aerobic, activated sludge, industrial, non-adapted)

For 1,3-dioxolane 3.7 % BOD of the ThOD (35 d) (OECD 301D; EEC 92/69, C.4-E) (aerobic, municipal sewage treatment plant effluent)

Assessment of stability in water: For 1,3-dioxolane
In contact with water the substance will hydrolyse slowly.
Information on Stability in Water (Hydrolysis):
< 5 % (4 d), (OECD Guideline 111, pH4)
< 5 % (4 d), (OECD Guideline 111, pH7)
< 5 % (4 d), (OECD Guideline 111, pH9)

12.3. Bioaccumulative potential
Assessment bioaccumulation potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow) for the solvent components. The polymer will precipitate from water and is inert.

12.4. Mobility in soil
Assessment transport between environmental compartments: not determined

12.5. Results of PBT and vPvB assessment
unknown

12.6. Other adverse effects
The substances are not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.7. Additional information
Other ecotoxicological advice:
Do not discharge product into the environment without control.

SECTION 13: Disposal Considerations
13.1. Waste treatment methods
Incinerate in suitable incineration plant, observing local authority regulations.
Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

UN number	UN1170
UN proper shipping name:	ETHYL ALCOHOL SOLUTION
Transport hazard class(es):	3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	Tunnel code: D/E

RID

UN number	UN1170
UN proper shipping name:	ETHYL ALCOHOL SOLUTION
Transport hazard class(es):	3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number	UN1170
UN proper shipping name:	ETHYL ALCOHOL SOLUTION
Transport hazard class(es):	3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known
Transport in inland waterway vessel:	Not evaluated

Sea transport

IMDG

UN number:	UN 1170
UN proper shipping name:	ETHYL ALCOHOL SOLUTION
Transport hazard class(es):	3
Packing group:	II
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	None known

Air transport

IATA/ICAO

UN number:	UN 1170
UN proper shipping name:	ETHYL ALCOHOL SOLUTION
Transport hazard class(es):	3
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Prohibitions, Restrictions and Authorizations unknown, not determined

15.2. Chemical Safety Assessment
Chemical Safety Assessment performed.

SECTION 16: Other Information
Assessment of the hazard classes according to UN GHS criteria (most recent version): Flam. Liq. 2
Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

F	Highly flammable.	
11	Highly flammable.	
Flam. Liq.	Flammable liquid,	Highly flammable liquid and vapour.

Changes from previous revisions – Formatting and grammatical changes and clarifications.
LEL, UEL estimates. Minor clarifications for section 7 handling.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product(s) only with regard to safety requirements. The data does not describe the product's properties (product specifications). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.