

# Safety Data Sheet

Date Effective: December 4, 2018

SPI Catalog # 04996-AB, 04996-DA

## SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Thinner for Flash-Dry Silver Conductive Paint

### Section 1.1: Identification

Chemical Name/Synonyms ..... Thinner for Flash-Dry Silver Conductive Paint

Product or Trade Name ..... Thinner for Flash-Dry Silver Conductive Paint

CAS #'s ..... 78-93-3; 108-10-1

Chemical Formula..... Mixture

### Section 1.2: Relevant Uses/Restrictions

Thinner for Flash-Dry Silver Conductive Paint.

### Section 1.3: Supplier of the Safety Data Sheet

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### Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

### Section 2: Hazard Identification

#### 2.1 Classification of the substance

GHS Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS):

Flammable liquids (category 2)  
Acute toxicity, Oral (category 5)  
Acute toxicity, Inhalation (category 4)  
Skin irritation (category 3)  
Eye irritation (Category 2A)  
Specific target organ toxicity – single exposure (category 3)

## 2.2 Label elements

### Pictogram



**Signal Word:** Danger

### Hazard statements:

H225 Highly flammable liquid and vapor.  
H303 May be harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 harmful if inhaled.  
H335 May cause respiratory irritation.

### Precautionary statements:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. – No smoking.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 2.3 Other Hazards:

### Hazardous Material Information System USA

Health ..... 2  
Fire Hazard ..... 3  
Reactivity ..... 0  
Personal Protection ..... B

### NFPA Rating (estimated)

Health ..... 2  
Flammability..... 3  
Reactivity ..... 0

## Section 3: Composition

### 3.1 Substances:

Material does not meet the criteria of a substance.

### 3.2 Mixtures:

Component	CAS #	EC #	Weight Percent
Methyl ethyl ketone	78-83-3	201-159-0	>30
Methyl isobutyl ketone	108-10-1	203-550-1	>30

## **Section 4: First Aid Measures**

### **4.1 Description of first aid measures:**

#### **Inhalation:**

Get medical aid immediately.  
Remove to fresh air immediately.  
Artificial respiration if breathing has stopped.  
If breathing is difficult, give oxygen.  
**Do NOT use mouth-to-mouth resuscitation.**  
If breathing has ceased, apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

#### **Skin Contact:**

Get medical aid.  
Immediately flush skin thoroughly with water for at least 15 minutes.  
Remove contaminated clothing and shoes. Wash clothing before reuse.

#### **Eye Contact:**

Get medical aid immediately.  
Immediately flush thoroughly with water for at least 15 minutes, occasionally lifting the upper and lower eyelids.  
Do not allow victim to rub or keep eyes closed.

#### **Ingestion:**

Do NOT induce vomiting.  
If conscious and alert, give 2-4 cupfuls of milk or water.  
**Never give anything by mouth to an unconscious person.**  
Get medical aid immediately.

#### **Self-protection of the first aider:**

**Do NOT use mouth-to-mouth resuscitation.**

### **4.2 Most important symptoms and effects, both acute and delayed:**

The most important known symptoms and effects are described in the labelling (see Section 2.2) and/or in Section 11/Toxicological Information.

### **4.3 Indication of any immediate medical attention and special treatment needed:**

Treat symptomatically and supportively.

## **Section 5: Fire Fighting Measures**

### **5.1 Extinguishing media:**

For small fires use dry chemical, CO<sub>2</sub>, or "alcohol" foam.  
Use water spray to cool fire-exposed containers and to disperse vapor.  
Water on fire itself may be ineffective.

For large fires, use water spray, fog, or alcohol-resistant foam. DO NOT use straight streams of water.  
Cool containers with flooding quantities of water until well after fire is out.

### **5.2 Special hazards arising from the substance or mixture:**

Dangerous fire and explosion hazard.  
Vapor can travel distance to ignition source and flash back.

### **5.3 Hazardous combustion products:**

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or

combustion.

May release vapors that form explosive mixtures at temperatures above the flashpoint.

Hot organic vapors or mists are susceptible to sudden spontaneous combustion when mixed with air.

Ignition may occur at temperatures below published auto-ignition or ignition temperatures.

Ignition temperatures decrease with increasing vapor volume and vapor/air contact time, and are influenced by pressure changes.

Ignition may occur at typical elevated temperature process conditions, especially in process operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs.

#### **5.4 Advice for firefighters:**

##### **Special protective equipment and precautions for firefighters:**

Structural firefighters' protective clothing will only provide limited protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

Move containers from fire area if you can do it without risk.

LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

## **Section 6: Accidental Release Measures**

### **6.1 Personal precautions:**

Evacuate the area of all unnecessary personnel.

Wear suitable protective equipment, including self-contained breathing apparatus.

Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.

Contain the release and eliminate its source, if this can be done without risk.

### **6.2 Environmental precautions:**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### **6.3 Methods and material for containment and cleaning up:**

Absorb spill with an absorbent, non-combustible material such as earth, sand, or vermiculite.

Scoop up with non-sparking tool and containerize for proper disposal.

### **6.4 Reference to other sections:**

For disposal information, see Section 13.

## **Section 7: Handling and Storage**

### **7.1 Precautions for safe handling:**

#### **Protective measures:**

Use only in a well-ventilated area.

Wash thoroughly after handling.

Remove contaminated clothing and wash before reuse.

Avoid contact with eyes, skin, and clothing.

Ground and bond containers when transferring material.

Use spark-proof tools and explosion proof equipment.

Avoid contact with heat, sparks and flame.

Empty containers may contain residue – do not pressurize, or expose empty containers to heat, sparks, or open flames.

Do not take internally.

Eye wash and safety equipment should be readily available.

### **7.2 Conditions for safe storage, including any incompatibilities:**

Store away from sources of ignition.

Store in a flammables area.

Store in a cool, dry, well-ventilated area.

### 7.3 Specific end uses:

Thinner for Flash-Dry Silver Conductive Paint.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

## **Section 8: Exposure Controls and Personal Protection**

### 8.1 Control parameter and Personal Protection:

#### Workplace exposure limits:

#### Airborne Exposure Limits:

Chemical Name	ACGIH	NIOSH	OSHA - Final PEL
Methyl Ethyl Ketone	200 ppm TWA	200 ppm TWA	200ppm TWA
	300 ppm STEL	590 mg/m <sup>3</sup> TWA	590 mg/m <sup>3</sup> TWA
	3000 ppm IDHL		
Methyl Isobutyl Ketone	50 ppm TWA	50 ppm TWA	100 ppm TWA
	75 ppm STEL	205 mg/m <sup>3</sup> TWA	410 mg/m <sup>3</sup> TWA
	500 ppm IDHL		

#### OSHA Vacated PELS:

Methyl Ethyl Ketone 200 ppm TWA; 590 mg/m<sup>3</sup> TWA; 300 ppm STEL; 885 mg/m<sup>3</sup> = STEL

Methyl Isobutyl Ketone 50 ppm TWA; 205 mg/m<sup>3</sup> TWA; 75ppm STEL; 300 mg/m<sup>3</sup> = STEL

**Biological limit values:** No additional data available.

### 8.2 Exposure controls:

#### 8.2.1 Appropriate engineering controls:

An eyewash facility and a safety shower should be available.

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

#### 8.2.2 Individual protection measures:

**Eyes:** Wear chemical safety goggles as described by OSHA's eye and face-protection regulations in 29 CFR 1910.133 or the European Standard = EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29CFR = 1910.134 or the European Standard EN149. Always use a NIOSH or European = Standard approved respirator when necessary.

#### 8.2.3 Environmental exposure controls:

No data available.

## **Section 9: Physical and Chemical Properties**

### 9.1 Information on basic physical and chemical properties:

## Methyl Isobutyl Ketone

## Methyl Ethyl Ketone

<b>Boiling Point.....</b>	760 mm Hg : 80°C	117.4°C
<b>Formula Weight.....</b>	72.1 g/mol	100.2 g/mol
<b>Coeff. of Water/Oil Dist.</b>	NOT DETERMINED	NOT DETERMINED
<b>pH (Liquids Only).....</b>	NOT DETERMINED	NOT DETERMINED
<b>Melting Point.....</b>	-87°C	-84°C
<b>Vapor Pressure.....</b>	71.2 mm Hg	15.7 mm Hg
<b>Vapor Density/Air is 1...</b>	2.5	3.5
<b>Solubility In Water.....</b>	soluble	insoluble
<b>Appearance and Color.....</b>	Mixture is a clear, colorless liquid	
<b>Specific Gravity(H<sub>2</sub>O =3D 1):</b>	0.8050	0.8010
<b>Evaporation Rate</b>	2.7(ether=1)	1.6(butyl acetate=1)
<b>Solubility in water:</b>	partial	
<b>Specific Gravity/Density:</b>	1.71	
<b>Molecular Formula:</b>	n/a	
<b>Molecular Weight:</b>	n/a:	
<b>Odor.....</b>	Mixture has a sweet smell	

**9.2 Other information:**

No additional information available.

## Section 10: Stability and Reactivity

**10.1 Reactivity:**

No data available.

**10.2 Chemical Stability:**

Stable under recommended storage conditions.

**10.3 Possibility of Hazardous Reactions:**

Hazardous polymerization may occur.

**10.4 Conditions to avoid:**

Heat, Incompatible ignition sources, Contact with ignition sources.

**10.5 Incompatible materials:**

Oxidizing agents; Reducing agents; Caustics and strong bases, such as sodium hydroxide, ammonium hydroxide, potassium hydroxide, calcium hydroxide, ammonia; copper, amines; isocyanates; chlorosulfonic acid; fuming sulfuric acid; peroxides; pyridine; potassium-tert-butoxide.

**10.6 Hazardous decomposition products:**

Carbon monoxide, Carbon dioxide, Irritating and toxic fumes and gases.

## Section 11: Toxicological Information

**RTECS Numbers:**

CAS # 78-93-3: EL6475000

CAS # 108-10-1: SA9275000

**11.1 Information on toxicological effects:****A. Acute toxicity:**

Toxicity data:

CAS # 78-93-3

CAS # 108-10-1

Inhalation, Mouse	LC50	32 gm/m <sup>3</sup> /4H	23300 mg/m <sup>3</sup>
Inhalation, Rat	LC50	11700 ppm /4H	8.2 mg/L /4H
Oral, Mouse	LD50	4050 mg/kg	2671 mg/kg
Oral, rat	LD50	2737 mg/kg	2080 mg/kg

**B. Skin corrosion/irritation:**

<u>Toxicity data:</u>	<u>CAS # 78-93-3</u>	<u>CAS # 108-10-1</u>
Draize test, Rabbit, skin:	500mg/24H Moderate	500mg/24H Mild

**C. Serious eye damage/irritation:**

<u>Iritation data:</u>	<u>CAS # 78-93-3</u>	<u>CAS # 108-10-1</u>
Eyes, Rabbit	Irritating	Moderate eye irritation/24H

**D. Respiratory or skin sensitization:**

No data available.

**E. Germ cell mutagenicity:**

CAS # 78-93-3:

Sex chromosome loss and nondisjunction: Yeast *Saccharomyces cerevisiae*, 33800 ppm

**F. Carcinogenicity:**

**For CAS # 78-93-3:**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

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

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP>

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

**For CAS # 108-10-1**

IARC: 2B Group 2B Possibly carcinogenic to humans.

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

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP>

ACGIH: A3 Confirmed animal carcinogen with unknown relevance to humans.

**G. Reproductive toxicity:**

No data available.

**H. STOT-single exposure:**

CAS # 78-93-3: May cause drowsiness.

CAS # 108-10-1: Respiratory irritation.

**I... STOT-repeated exposure:**

No data available.

**J. Aspiration hazard:**

No data available.

## **Section 12: Ecological Information**

**12.1 Ecotoxicity:**

Species:	CAS # 78-93-3	CAS # 108-10-1
Algae:	No data available	EC50=400 mg/L; 96h
Fish: Pimephales promelas	LC50 3220 mg/L; 96h	496-514 mg/L; 96h (flow-through)
Fish: Lepomis macrochirus	LC50 1690 mg/L; 96h	
Microtox	EC50 3403 mg/L 30min EC50 3420 mg/L 5min	EC50 79.6 mg/L 5min
Water flea: Daphnia Magna	EC50 4025-6440 mg/L 48h static EC50 5091 mg/L 48h EC50 >520 mg/L 48h	EC50 4280 mg/L 24h EC50 170 mg/L 48h

**12.2 Persistence and degradability:**

Persistence is unlikely based on information available.

**12.3 Bio-accumulative potential:**

No data available.

**12.4 Mobility in soil:**

Will likely be mobile in the environment due to its water solubility.

**12.5 Results of PBT and vPvB assessment:**

PBT/vPvB not available as chemical safety assessment not required/not conducted.

**12.6 Other adverse effects:**

No data available.

## **Section 13: Disposal Considerations**

**13.1 Waste treatment methods:**

Consult state and local hazardous waste regulations to ensure complete and accurate classification.

US EPA guidelines for hazard classification determination are listed in 40CFR Parts 261.3.

RCRA P-Series: None listed

RCRA U-Series:

CAS # 78-93-3: waste number U159 (Ignitable, Toxic Waste)

CAS # 108-10-1: waste number U161 (Ignitable Waste)



## **Section 14: Transport Information**

### **DOT:**

UN Number: UN1263  
Proper Shipping Name: Paint Related Material  
Label: Flammable Liquid  
Hazard Class: 3  
Packing Group: II

### **IATA:**

UN Number: UN1263  
Proper Shipping Name: Paint Related Material  
Label: Flammable Liquid  
Hazard Class: 3  
Packing Group: II

### **IMDG:**

UN Number: UN1263  
Proper Shipping Name: Paint Related Material  
Label: Flammable Liquid  
Hazard Class: 3  
Packing Group: II

## **Section 15: Regulatory Information**

### **15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture:**

#### **U.S. Government Regulations:**

#### **TSCA Active Inventory List:**

CAS # 78-93-3 is listed.  
CAS # 108-10-1 is listed.

**TSCA 12b:** Contains no TSCA 12b components.

**SARA 302:** Contains no SARA 302 components.

**SARA 311/312:** Fire Hazard. Acute Health Hazard. Chronic Health Hazard.

#### **SARA 313:**

CAS # 108-10-1                      Revision Date: 20017-03-01

#### **CERCLA Components:**

CAS # 78-93-3                      Hazardous Substance RQ: 5000 lbs.  
CAS # 108-10-1                      Hazardous Substance RQ: 5000 lbs.

#### **State Right To Know Lists:**

CAS # 78-93-3 is listed by Massachusetts, New Jersey, Pennsylvania, Illinois, and Rhode Island.  
CAS # 108-10-1 is listed by Massachusetts, New Jersey, Pennsylvania, Illinois, and Rhode Island.

#### **California Prop. 65:**

CAS # 108-10-1 is known to the State of California to be a Developmental Carcinogen.

### **15.2 Chemical Safety Assessment:** Has not been carried out.

Date of Preparation: 04 December 2018

## **Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
CMRG: Chemical Manufacturer's Recommended Guidelines  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
AIHA: American Industrial Hygiene Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bio-accumulative and Toxicological  
vPvB: very Persistent and very Bio-accumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety Health  
ATE: Acute Toxicity Estimates  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
STEL: Short Term Exposure Limit  
CEIL: Ceiling  
TSCA: Toxic Substances Control Act (USA)  
OECD: Organization for Economic Co-operation and Development  
DSL: Domestic Substances List (Canada)  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
ENCS: Existing and New Chemical Substances (Japan)  
AICS: Australian Inventory of Chemical Substances  
IECSC: Inventory of Existing Chemical Substances in China  
KECL: Korea Existing Chemicals List

## **Section 16: Other Information**

### **Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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