

SPI Supplies Division

Structure Probe, Inc.

206 Garfield Ave., West Chester, PA 19380-4512 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

sales@2spi.com

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: November 26, 2018

SPI Catalog # 02615-AA, 02615-AB

SPI-Chem™ Paraformaldehyde

Section 1.1: Identification

Chemical Name/Synonyms Paraformaldehyde

Product or Trade Name SPI-Chem™ Paraformaldehyde

CAS #'s 30525-89-4

Chemical Formula..... [CH₂O]_n

Section 1.2: Relevant Uses/Restrictions

Chemical reagent used as a fixative in the microscopy laboratory.

Section 1.3: Supplier of the Safety Data Sheet

SPI Supplies Division

Structure Probe, Inc.

206 Garfield Ave., West Chester, PA 19380-4512 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

sales@2spi.com

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

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 in accordance with 29 CFR 1910 (OSHA HCS)

- Flammable solids (Category 2)
- Acute toxicity, Oral (Category 4)
- Acute toxicity, Inhalation (Category 4)
- Skin sensitization (Category 1)
- Skin irritation (Category 2)
- Serious eye damage (Category 1)
- Carcinogenicity (Category 2)
- Specific target organ toxicity – single exposure, respiratory system (Category 3)
- Acute aquatic toxicity (Category 3)
- Chronic aquatic toxicity (Category 3)

2.2 Label elements

Pictogram



Signal Word: Danger

Hazard statements:

- H228 Flammable solid
- H302 + H332 Harmful if swallowed or if inhaled
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H335 May cause respiratory irritation
- H351 Suspected of causing cancer
- H412 Harmful to aquatic life with long lasting effects

Precautionary statements:

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P240 Ground/bond container and receiving equipment
- P241 Use explosion-proof electrical/ ventilation/ lighting/ equipment
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
- P264 Wash skin thoroughly after handling
- P270 Do not eat, drink or smoke when using this product
- P271 Use only outdoors or in a well-ventilated area
- P272 Contaminated work clothing should not be allowed out of the workplace
- P273 Avoid release to the environment
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection
- P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water
- P304 + P340 IF INHALED: Remove victim to fresh air and keep at a rest in a position of comfortable breathing.
- 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 or doctor/ physician.
- P321 Specific treatment (see supplemental first aid instructions on this label).
- P330 Rinse mouth
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention
- P362 Take off contaminated clothing and wash before reuse.
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up
- P501 Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified or not covered by GHS:

Combustible dust

Hazardous Material Information System USA

Health 2
 Fire Hazard 2
 Reactivity 2
 Personal Protection

NFPA Rating (estimated)

Health 2
 Flammability..... 2
 Reactivity 2

Section 3: Composition

3.1 Substances:

Chemical Name	CAS#	Percent
Paraformaldehyde	30525-89-4	90 - 100%

Section 4: First Aid Measures

4.1 Description of first aid measures:

If inhaled:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Seek medical attention.

In case of skin contact:

Wash off with soap and plenty of water. Seek medical attention.

In case of eye contact:

Flush with water for several minutes, then remove contacts if present and easy to do so. Continue flushing with water for additional 10 to 15 minutes. Seek immediate medical attention.

If swallowed:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention.

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.

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

No data available.

Section 5: Fire Fighting Measures

5.1 Extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Special hazards arising from the substance or mixture:

No data available.

5.3 Hazardous combustion products:

Carbon oxides, including carbon monoxide and carbon dioxide.

5.4 Advice for firefighters:

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus for firefighting if necessary.

Further information:

Use water spray to cool unopened containers.

Section 6: Accidental Release Measures

6.1 Personal precautions:

- Use personal protective equipment.
- Avoid dust formation.
- Avoid breathing vapors, mist, or gas.
- Ensure adequate ventilation.
- Remove all sources of ignition.
- Evacuate personnel to safe areas.
- Avoid breathing dust.
- For personal protection see Section 8.

6.2 Environmental precautions:

- Prevent further leakage of spillage if safe to do so.
- Do not let product enter drains.
- Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up:

- Use non-sparking equipment.
- Sweep up and shovel.
- Contain spillage.
- Collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections:

- For disposal see Section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

- Avoid contact with skin and eyes.
- Avoid formation of dust and aerosols.
- Further processing of solid materials may result in the formation of combustible dusts.
- The potential for combustible dust formation should be taken into consideration before additional processing occurs.
- Provide appropriate exhaust ventilation at places where dust is formed.

Keep away from sources of ignition.

No smoking.

Take measures to prevent the build-up of electrostatic charge.

See Precautionary Statements in Section 1.

7.2 Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas.

Moisture sensitive.

Keep in a dry place.

7.3 Specific end uses:

Chemical reagent used as a fixative in the microscopy laboratory.

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:

Contains no substances with occupational exposure limit values.

Biological limit values: No data available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice.

Wash hands before breaks and at the end of the workday.

8.2.2 Individual protection measures:

Eye/Face Protection: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin Protection: Handle with gloves. Recommended material nitrile rubber, minimum thickness 0.1 mm. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection: Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to

the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) OR CEN (EU).

8.2.3 Environmental exposure controls:

Prevent further leakage or spillage if safe to do so.

Do not let product enter drains.

Discharge into the environment must be avoided.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance: powder

Odor: pungent

Odor threshold: no data available

pH: 4.0-5.5

Melting point/Freezing point: Melting point range: 120-170°C (248-338°F) – literature

Initial boiling point and boiling range: no data available

Flash point: 70°C (158°F) – closed cup

Evaporation rate: no data available

Flammability (solid, gas): May form combustible dust concentrations in air-purify

Upper/lower flammability or explosive limits: no data available

Vapor pressure: No data available

Vapor density: no data available

Relative density: 0.88 g/cm³ at 25°C (77°F)

Water solubility: insoluble

Partition coefficient: n-octanol/water: no data available

Auto-ignition temperature: no data available

Decomposition temperature: no data available

Viscosity: no data available

Explosive properties: no data available

Oxidizing properties: no data available

9.2 Other information:

Bulk density: 500 – 800 kg/m³

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:

No data available.

10.4 Conditions to avoid:

Exposure to moisture; Heat, flames, and sparks; Extremes of temperature; Direct sunlight.

10.5 Incompatible materials:

Brass, Steel (all types and surface treatments), Copper, Acid anhydrides, Strong oxidizing agents,
Strong reducing agents.

10.6 Hazardous decomposition products:

Carbon oxides under fire conditions.

Other decomposition products: No data available.

Section 11: Toxicological Information

Information on the likely routes of exposure:

11.1 Information on toxicological effects:

A. Acute toxicity:

LD50 Oral Rat 592 mg/kg

LC50 Inhalation Rat 4h 1,070mg/m³

Remarks: Sense organs and Special Senses (Nose, Eye, Ear, and Taste):

Eye: Lachrimation

Lungs, Thorax, or Respiration: Dyspnea

LDLo Dermal Rat 10,000 mg/kg

B. Skin corrosion/irritation:

No data available.

C. Serious eye damage/irritation:

Eyes Rabbit Severe eye irritation.

D. Respiratory or skin sensitization:

No data available.

E. Germ cell mutagenicity:

No data available.

F. Carcinogenicity:

Formaldehyde, the decomposition product of paraformaldehyde, has been listed as a carcinogen by NTP and IARC.

Limited evidence of carcinogenicity in animal studies.

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

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

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

G. Reproductive toxicity:

No data available.

H. STOT-single exposure:

Inhalation – May cause respiratory irritation.

I..STOT-repeated exposure:

No data available.

J. Aspiration hazard:

No data available.

Additional Information:

RTECS: RV0540000

May cause permanent eye injury.

Liver – irregularities – Based on Human Evidence.

Section 12: Ecological Information

12.1 Toxicity:

Toxicity to daphnia and other aquatic invertebrates:

EC50 Daphnia magna (Water flea) 42 mg/l – 24 hours

12.2 Persistence and degradability:

No data available.

Ratio BOD/Th Bod 37%

12.3 Bio-accumulative potential:

No data available.

12.4 Mobility in soil:

No data available.

12.5 Results of PBT and vPvB assessment:

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

12.6 Other adverse effects:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

Section 13: Disposal Considerations

13.1 Waste treatment methods:

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging: Dispose of as unused product.

Section 14: Transport Information

DOT (US)

UN number: 2213
Proper shipping name: Paraformaldehyde
Class 4.1
Packing Group: III
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: NO

IMDG

UN number: 2213
Proper shipping name: Paraformaldehyde
Class 4.1
Packing Group: III
EMS-No: F-A, G
Marine pollutant: No

IATA:

UN number: 2213
Proper shipping name: Paraformaldehyde
Class 4.1
Packing Group: III

Section 15: Regulatory Information

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

U.S. Government Regulations:

TSCA Inventory:

Paraformaldehyde, CAS # 30525-89-4, is on the TSCA Active Inventory List.

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

State Right to Know Components:

Paraformaldehyde, CAS# 30525-89-4 is listed in the Massachusetts, New Jersey and Pennsylvania Right to Know Lists.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

15.2 Chemical Safety Assessment: A Chemical Safety Assessment has not been carried out.

Date of Preparation: 26 November 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)

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

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.

The information and recommendations set forth above are taken from sources believed to be accurate as of the date hereof, however SPI Supplies and Structure Probe, Inc. make no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assume no liability to any user thereof. The information contained in this sheet does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. Be aware of the Structure Probe, Inc. Copyright Policy. Structure Probe, Inc. grants a nonexclusive license to make unlimited copies of this safety sheet for internal use only. Quite obviously, this information would pertain only to this material when purchased from SPI Supplies as product from other sources, with other ingredients and impurity levels could have substantially different properties.