



Safety Data Sheet

Creation Date: 10-25-2018

Revision Date: 03-07-2019

Revision Number: 2

1. IDENTIFICATION

Product Name: Paraformaldehyde, 4% in PBS
Catalog No: PFA04-500R
Other Names/Synonyms: No information available
Recommended Use: Laboratory chemicals.
Uses advised against: For research use only. Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company: TissuePro Technology
Address: 2153 SE Hawthorne Rd, Gainesville, FL 32641
Telephone Number: 352-213-4255
Fax Number: 352-393-6015

2. HAZARD (S) IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Dermal toxicity	Category 4
Acute Oral Toxicity	Category 4
Acute inhalation toxicity - vapors	Category 4
Germ Cell Mutagenicity	Category 2
May cause cancer/Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Target Organs – Respiratory system, Central Nervous system (CNS)	
Specific target organ toxicity (repeated exposure)	Category 3
Serious eye damage/eye irritation	Category 2
Skin corrosion/irritation	Category 2

Label Elements

Signal Word Danger

Hazard Statements

Causes serious Eye Damage/Eye Irritation
Causes Skin irritation
May cause respiratory irritation



May cause drowsiness or dizziness
May cause an allergic skin reaction
May cause cancer
Suspected of causing genetic defects
Causes damage to organs
May cause damage to organs through prolonged or repeated exposure



Precautionary Statements

Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area

Response

IF exposed: Call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Removed victim to fresh air and kept at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell

Skin

IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention

Eyes

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

Storage

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

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazard not otherwise classified (HNOC)

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains substance, which are hazardous for the environment.
Chemical waste generators must determine whether a discarded chemical is classified as hazardous waste.



Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

WARNING. Cancer – <https://www.p65warnings.ca.gov/>.

3. COMPOSITION/INGREDIENTS

Chemical Name	CAS Number	Weights %
Paraformaldehyde	30525-89-4	4%
Sodium Chloride	7647-14-5	<1%
Sodium phosphate, dibasic	7558-79-4	<1%
Sodium phosphate, monobasic	7558-80-7	<1%
Potassium Chloride	7647-14-5	<1%
Water and non-hazardous substances	7732-18-5	92-95%
	Total	100%

We certify that the above product is composed of the following ingredients and does not have any other components.

4. FIRST AID MEASURES

General	Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye	Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms/effects Causes eye burns. May cause allergic skin reaction. Breathing difficulties. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. FIRE-FIGHTING MEASURES

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



Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No data available
Sensitivity to Static Discharge	No data available

Specific Hazards Arising from Chemical

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and source of ignition. Risk of ignition.

Hazardous Combustion Products

Formaldehyde Methanol Carbon monoxide (CO) Carbon dioxide (CO₂)

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	2	0	N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation. Evacuate personal to safe areas.
Environmental Precautions	Keep people away from and upwind of spill/leak. Should not be released into environment. Do not flush into surface water or sanitary sewer system. See section 12 for additional ecological information

Methods for Containment and clean: Soak up with inert absorbent material. Keep in suitable, closed container for disposal.

Spills and Disposal: Material may be slippery when spilt. Walk cautiously. Ventilate area. Wear protective equipment to prevent skin and eye contact, as outlined under personal protection in this SDS. Bund area using sand or soil - to prevent run off into drains and waterways. Use absorbent (soil, sand, vermiculite or other inert material). Collect and seal in properly labeled containers for disposal. Remainder of material can be washed to drain with plenty of water.

Fire/Explosion Hazard: If safe to do so, move undamaged containers from fire area.
Hazardous Decomposition Products: Decomposes on heating emitting oxides of carbon. Fire Fighting Procedures: Fire fighters to wear Self-contained breathing apparatus (SCBA) in confined spaces, in oxygen deficient atmospheres or if exposed to products of decomposition. Full protective clothing is also recommended. Extinguishing Media: Use extinguishing media suitable for surrounding fire situation.

**7. HANDLING AND STORAGE**

- Handling:** Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.
- Storage:** Keep containers tightly closed in dry, cool and well-ventilated place when not using the product. Store in original packages as approved by manufacturer.

8. EXPOSURE CONTROL/PERSONAL PROTECTION**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Paraformaldehyde	TWA: 0.1 ppm STEL: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) PEL: 10 ppm (Vacated) Ceiling: 3 ppm TWA: 0.75 ppm STEL: 2 ppm	IDLH: 20 ppm TWA: 0.016 ppm Ceiling: 0.1 ppm	Ceiling: 2 ppm Ceiling: 3 mg/m ³

*Legend**ACGIH – American Conference of Governmental Industrial Hygienists**OSHA – Occupational Safety and Health Administration**NIOSH IDLH – The National Institute of Occupational Safety and Health Immediately Dangerous to life or Death***Personal Protective Equipment****Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tightly fitting safety goggles.

Skin and body protection

Long sleeved clothing.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tightly fitting safety goggles.

Skin and body protection

Long sleeved clothing.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical Description and Properties**

Physical State:	Liquid
Appearance:	Clear Liquid/ Colorless
Odor:	Characteristic formaldehyde
Odor Threshold:	No information available
pH	7.0-7.5
Melting Point/Range:	No data available
Boiling Point/Range:	Not applicable
Flash Point:	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Specific Gravity	No information available
Solubility miscible	
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Solution

10. STABILITY AND REACTIVITY

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	Strong oxidizing agents, Strong acids, Strong bases
Hazardous Decomposition Products	Formaldehyde, Carbon oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. TOXICOLOGY INFORMATION

Acute Toxicity	
Product Information	No acute toxicity information is available for this product
Oral LD50	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Dermal LD50	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Vapor LC50	Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information



Component	LD50 Oral	LD50 Dermal	LD50 Inhalation
Water	-	Not listed	Not listed
Paraformaldehyde	592 mg/kg (Rat)	LD50 = 10,000 mg/kg (Rat)	1,070 mg/L (Rat) 4 h
Sodium phosphate, dibasic	LD50 = 17 g/kg (Rat)	Not listed	Not listed
Sodium phosphate, monobasic	LD50 = 8290 mg/kg (Rat)	LD50 > 7940 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Paraformaldehyde	30525-89-4	Group1	Known	A1	X	A2
Sodium phosphate, dibasic	7558-79-4	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium phosphate, monobasic	7558-80-7	Not listed	Not listed	Not listed	Not listed	Not listed

IARC: (International Agency for Research on Cancer)

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Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

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Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects

Mutagenic effects have occurred in humans.

Reproductive Effects

Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects

Developmental effects have occurred in experimental animals.

Teratogenicity

Teratogenic effects have occurred in experimental animals.

STOT - single exposure

Respiratory system, Central nervous system (CNS)

STOT - repeated exposure

Kidney Liver spleen Blood

Aspiration hazard

No information available

Symptoms / effects, both acute and delayed

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting



Endocrine Disruptor Information	No information available
Other Adverse Effects	Tumorigenic effects have been reported in experimental animals. The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances, which are hazardous for the environment.

Toxicity to daphnia and other aquatic invertebrates EC50-Daphnia magna (Water flea) -42 mg/l -24h

Persistence and Degradability	Miscible with water Persistence is unlikely based on information available.
Ratio BOD/ThBOD	37%

Bioaccumulation/ Accumulation	No information available.
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Mobility	Will likely be mobile in the environment due to its water solubility.
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Results of PBT and vPvB assessment	No information available
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Others adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects

13. DISPOSAL CONSIDERATION

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
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14. TRANSPORT INFORMATION

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated

Not classified as dangerous goods for transportation as supplied

15. REGULATORY INFORMATION

US Federal Regulations

US Toxic Substances Control Act (TSCA): Listed (Formaldehyde)

SARA 302: No Chemical were found

SARA 313: Formaldehyde 50-00-0.

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

WHMIS Hazard Class

Acute toxicity – inhalation – Category 2

SWkin corrosion / irritation – Category 2

Serious eye damage /eye irritation – Category 2



16. OTHER INFORMATION

Prepared by

TissuePro Technology

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Creation Date 25-Nov-2018

Revision Date 7-Mar-2019

Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is believed to be accurate and represents the best information currently available to us. The information given is design only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

End of the SDS
