

SAFETY DATA SHEET

According to OSHA HazCom 2012

Revision date 03-Oct-2023

Revision Number 3.05

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier**Product Name** 4% Paraformaldehyde Phosphate Buffer Solution**Other means of identification****Product Code(s)** 163-20145, 161-20141**Recommended use of the chemical and restrictions on use****Recommended Use** For research use only.**Uses advised against** No information available**Details of the supplier of the safety data sheet****Distributor**

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2. HAZARDS IDENTIFICATION

GHS classification**Classification of the substance or mixture****Acute toxicity - Inhalation (Gases)**

Category 4

Respiratory sensitization

Category 1

Skin sensitization

Category 1

Germ cell mutagenicity

Category 2

Carcinogenicity

Category 1A

Specific target organ toxicity (single exposure)

Category 2

Category 2 nervous system, respiratory system**Specific target organ toxicity (repeated exposure)**

Category 2

Category 2 central nervous system, respiratory system**Acute aquatic toxicity**

Category 3

Pictograms**Signal word**

Danger

Hazard statements

H332 - Harmful if inhaled

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H341 - Suspected of causing genetic defects

H350 - May cause cancer

H317 - May cause an allergic skin reaction

H402 - Harmful to aquatic life

H371 - May cause damage to the following organs: nervous system, respiratory system

H373 - May cause damage to the following organs through prolonged or repeated exposure: central nervous system, respiratory system

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 Use only outdoors or in a well-ventilated area In case of inadequate ventilation wear respiratory protection Contaminated work clothing should not be allowed out of the workplace Wear protective gloves Do not breathe dust/fume/gas/mist/vapors/spray Wash face, hands and any exposed skin thoroughly after handling Do not eat, drink or smoke when using this product Avoid release to the environment

Precautionary statements-(Response)

IF exposed or concerned: Get medical advice/attention

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Precautionary statements-(Storage)

Store locked up

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plant

Others**Other hazards** Not available**3. COMPOSITION/INFORMATION ON INGREDIENTS****Single Substance or Mixture** Mixture

Chemical Name	Molecular weight	CAS RN	Weight-%
Water	18.02	7732-18-5	<93
Paraformaldehyde	30.03×n	30525-89-4	3.5 - 4.4 (as HCHO)
Disodium Hydrogen Phosphate 12-Water	358.14	10039-32-4	2.60
Sodium Dihydrogen phosphate Dihydrate	156.01	13472-35-0	0.31

Impurities and/or Additives: Not applicable**4. FIRST AID MEASURES****First aid measures****Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.**Skin contact** Wash skin with soap and water.**Inhalation** Remove to fresh air.**Ingestion** Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.**Most important symptoms and effects, both acute and delayed****Symptoms** No information available.**Indication of any immediate medical attention and special treatment needed****Note to physicians** Treat symptomatically.**5. FIRE-FIGHTING MEASURES**

Suitable Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

No information available.

Explosion data

Sensitivity to Mechanical none.

Impact

Sensitivity to Static Discharge none.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Avoid contact with strong oxidizing agents.
Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep container protect from light tightly closed. Store in a cool (2-10 °C) place. Packed with an inert gas. Store locked up.

Packaging materials Glass.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits**Personal protective equipment**

Respiratory protection Protective mask
Hand protection chemical protective gloves (JIS T 8116)

Eye protection protective eyeglasses or chemical safety goggles
Skin and body protection Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Color colorless

Turbidity clear

Appearance liquid

Odor

no data available

pH

7.0 - 7.4 (25°C)

Melting point/freezing point

no data available

Boiling point, initial boiling point and boiling range

100 °C

Flash point

no data available

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits

Upper:

no data available

Lower:

no data available

Vapour pressure

no data available

Vapour density

1.03 (air = 1)

Specific Gravity / Relative density

no data available

Solubilities

water, Ethanol : miscible. Diethyl ether : insoluble.

n-Octanol/water partition coefficient:(log Pow)

no data available

Auto-ignition temperature:

no data available

Decomposition temperature:

no data available

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

10. STABILITY AND REACTIVITY

Stability

Chemical stability May be altered by light.

Reactivity no data available

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂), Phosphorus oxide

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Paraformaldehyde	800 mg/kg (Rat)	10000 mg/kg (Rabbit)	1.07 mg/L (Rat) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Paraformaldehyde	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
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Paraformaldehyde	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
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Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Paraformaldehyde	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Paraformaldehyde	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Paraformaldehyde	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Paraformaldehyde	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Paraformaldehyde	Based on the NITE GHS classification results.

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Paraformaldehyde	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Paraformaldehyde	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Paraformaldehyde	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Paraformaldehyde	Based on the NITE GHS classification results.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No information available

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Paraformaldehyde 30525-89-4		LC50 : Lepomis macrochirus 39.1 mg/L 96 h		

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility in soil

No information available

Other Data

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Precautionary including method of Disposal should be in accordance with applicable regional, national and local laws and

disposing contaminated packaging regulations.

14. TRANSPORT INFORMATION

DOT	Not regulated
UN/ID No	Not applicable
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Marine pollutant	Not applicable
IATA	Not regulated
UN/ID No	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Environmentally Hazardous Substance	Not applicable
IMDG	Not regulated
UN/ID No	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Marine pollutant (Sea)	Not applicable

15. REGULATORY INFORMATION

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Paraformaldehyde 30525-89-4	1000 lb			X
Disodium Hydrogen Phosphate 12-Water 10039-32-4				X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Paraformaldehyde	1000 lb		RQ 1000 lb final RQ

30525-89-4			RQ 454 kg final RQ
Disodium Hydrogen Phosphate 12-Water 10039-32-4	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any chemicals regulated by Proposition 65

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5			X
Paraformaldehyde 30525-89-4	X	X	X
Disodium Hydrogen Phosphate 12-Water 10039-32-4		X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date 16-Sep-2020

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Revision Note

No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet