

SAFETY DATA SHEET

Date: April 11, 2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Paraformaldehyde, 4% in PBS Ready-to Use Fixative
Catalog Number: 22023
Unit Size: 5x20mL
Manufacturer/Supplier: Biotium, Inc.
46117 Landing Parkway, Fremont, CA 94538, USA
Phone: 1-510-265-1027, Fax: 1-510-265-1352
Web: <http://www.biotium.com>

Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.

2. HAZARDS IDENTIFICATION**GHS Classification****Signal word** Danger**Health hazards**

Acute oral toxicity Category 4
Acute dermal toxicity Category 4
Acute inhalation toxicity - vapors Category 4
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2
Skin sensitization Category 1
Specific target organ systemic toxicity (single exposure) Category 3
Carcinogenicity Category 1A
Mutagenicity Category 2

Physical hazards None**Hazard statements**

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H341 - Suspected of causing genetic defects
H350 - May cause cancer

Precautionary statements

P201 - Obtain special instructions before use
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/ container to an approved waste disposal plant

WHMIS classification

Acute toxicity - oral - Category 4
Acute toxicity - inhalation - Category 2
Skin corrosion / irritation - Category 2
Serious eye damage / eye irritation - Category 2

GHS hazard pictogram**Classification according to Regulation (EC) No 1272/2008[CLP]**

Acute Tox. 4
Skin Irrit. 2
Skin Sens. 1
Eye Dam. 1
Acute Tox. 4
Resp. Sens. 1

Classification according to Directive 1999/45/EC None**HMIS Classification**

Health hazard: 4
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 4
Fire: 0
Reactivity Hazard: 0

Labeling according to Regulation (EC) No 1272/2008[CLP]**Hazard pictogram**

Signal word Danger

Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P285 - In case of inadequate ventilation wear respiratory protection.
P342+P311 - IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.
P271 - Use only outdoors or in a well-ventilated area.
P304+P340 - IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing..
P304+P312 - IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product

P301+P312- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330- Rinse mouth.
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352- IF ON SKIN: wash with plenty of soap and water.
P332+P313- IF SKIN irritation occurs: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P272- Contaminated work clothing should not be allowed out of the workplace.
P302+P352- IF ON SKIN: wash with plenty of soap and water.
P333+P313- IF SKIN irritation or rash occurs: Get medical advice/attention.
P305+P351+P338- 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.
P501 - Dispose of contents/ container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	EC No.	Index No.	Weight %	Classification according to 67/548/EEC	Classification according to regulation (EC)No1278/2008
Paraformaldehyde	30525-89-4	200-001-8	-	4%	-	Acute Tox. 4 Skin Irrit. 2 Skin Sens. 1 Eye Dam. 1 Acute Tox. 4 Resp. Sens. 1

4. FIRST-AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Carbon dioxide, dry chemical extinguishers, foam extinguishers or water.

Special protective equipment for firefighters

Wear self contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid breathing vapors, mist or gas. Remove all sources of ignition.

Environmental precautions

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

Methods and materials for containment and cleaning up

Contain spillage. Soak up spilled substance with inert absorbent material. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid inhalation of vapor or mist.
Avoid direct contact with substance.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.
Store at room temperature

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

None

Personal protective equipment**Hand protection**

Handle with gloves. 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.

Respiratory protection

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Chemical Name	Paraformaldehyde, 4% in PBS
Appearance	Liquid
Odor	No information available
Odor threshold	No information available
pH	6.9-7.5
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Evaporate rate	No information available
Flammability	No information available
Explosive limits	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	Soluble
Partition coefficient:n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

No data available

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity- Paraformaldehyde

LD50 Oral - Rat - 592 mg/kg

LC50 Inhalation - Rat - 4 h - 1,070 mg/m³

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation. Lungs, Thorax, or Respiration:Dyspnea.

LDLO Dermal - Rat - 10,000 mg/kg

Skin corrosion/irritation No data available**Serious eye damage/eye irritation**

Eyes - Rabbit Result: Severe eye irritation

Respiratory or skin sensitisation No data available**Germ cell mutagenicity**

In vitro tests showed mutagenic effects

Carcinogenicity

Formaldehyde, the decomposition product of paraformaldehyde, has been listed as a carcinogen by NTP and IARC. Limited evidence of carcinogenicity in animal studies

Reproductive toxicity no data available**Specific target organ toxicity - single exposure (Globally Harmonized System)**

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Additional Information

RTECS: RV0540000

May cause permanent eye injury.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

Toxicity

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

Persistence and degradability

Ratio BOD/ThBOD 37 %

Biodegradation No information available**Mobility in soil** No information available**Results of PBT and vPvB assessment** No information available**Other 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 CONSIDERATIONS

Do not dispose product directly into sewage. Consult local state or national regulation for proper disposal.

14. TRANSPORT INFORMATION

IATA, IMDG, DOT (US), TDG	Not classified as dangerous goods for transportation as supplied
UN number	None
UN proper shipping name	None
Transport hazard class	None
Packing group	None
Environmental hazards	None
Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code	N/A
Special precaution for user	None

15. REGULATION INFORMATION**US Federal Regulations**

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

SARA 302: No chemicals 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

Skin corrosion / irritation - Category 2

Serious eye damage / eye irritation - Category 2

16. OTHER INFORMATION

Classification according to Regulation (EC) Nr. 1272/2008
Refer to section 2 and section 3

Prepared by: Regulatory Department
Biotium Inc.

Version no. 2

Revision date (Initials) 4/11/18 (LR)

Reason for revision Application of WHMIS labeling requirements

The information provided above is believed to be correct to our best knowledge, but does not purport to be all inclusive, and shall be used only as a guide. This material is sold for research purposes only and is not required to appear on the TSCA inventory. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. Biotium shall not be held liable for any damage resulting from handling or contact with the above product.