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Kit Components

Kit Product No.	Kit Product Description
554714	BD Cytotfix/Cytoperm™ Fixation/Permeabilization Solution Kit

Kit Component(s)	Kit Component(s) Description
51-2091KZ	BD Perm/Wash™ Buffer
51-2090KZ	BD Cytotfix/Cytoperm™ Fixation and Permeabilization Solution

IMDG

Special precautions for user: Not regulated.

IATA

Special precautions for user: Not regulated.

Please note: If a listed component does not have a corresponding document included, this means that the product is not hazardous and does not require a Safety Data Sheet.



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SAFETY DATA SHEET

1. Identification

Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
51-2091KZ	BD Perm/Wash™ Buffer	No data available

Other means of identification

SDS number: 088100012091

Recommended use and restriction on use

Recommended use: Scientific and industrial laboratory use. For research use only.

Restrictions on use: Not for use in diagnostic or therapeutic procedures.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Company Name: BD Biosciences, Pharmingen
Address: 10975 Torreyana Road
San Diego, CA 92121 USA
Telephone: 1 877 232 8995 or 1 800 424 9300
Fax:
Contact Person: Technical Services
E-mail: ResearchApplications@bd.com

Emergency telephone number: CHEMTREC 1 800 424 9300

2. Hazard(s) identification

Hazard Classification

Not classified

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: Not applicable



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Precautionary Statements Not applicable

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Sodium azide (Na(N ₃))	No data available.	26628-22-8	0.083%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical attention if symptoms occur.

Ingestion: Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: Provide fresh air, warmth and rest, preferably in comfortable upright sitting position.

Skin Contact: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed



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Treatment: No data available.

5. Fire-fighting measures

General Fire Hazards: Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Use water spray to keep fire-exposed containers cool.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Not applicable

Specific hazards arising from the chemical: Fire or excessive heat may produce hazardous decomposition products.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No unusual fire or explosion hazards noted.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Contact local authorities in case of spillage to drain/aquatic environment. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area.

Methods and material for containment and cleaning up: Absorb spillage with suitable absorbent material. Prevent runoff from entering drains, sewers, or streams. See Section 8 of the SDS for Personal Protective Equipment. For waste disposal, see section 13 of the SDS.



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Environmental Precautions: Avoid release to the environment.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): No special requirements under ordinary conditions of use and with adequate ventilation.

Safe handling advice: When using do not eat, drink or smoke. Read and follow manufacturer's recommendations. Use personal protective equipment as required.

Contact avoidance measures: No data available.

Hygiene measures: Observe good industrial hygiene practices.

Storage

Safe storage conditions: Store in a cool, dry place. Keep container tightly closed.

Safe packaging materials: No data available.

Storage Temperature: No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Sodium azide (Na(N ₃)) - as HN ₃	Ceiling	0.1 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
Sodium azide (Na(N ₃)) - as NaN ₃	Ceiling	0.3 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
	Ceiling	0.3 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)



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Sodium azide (Na(N3)) - as HN3	Ceiling	0.1 ppm	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
Sodium azide (Na(N3))	AN ESL	0.07 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (12 2010)
	ST ESL	0.7 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (12 2010)
	AN ESL	0.2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (12 2010)
	ST ESL	2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (12 2010)
	Ceiling	0.1 ppm 0.3 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (08 2010)
Sodium azide (Na(N3)) - as NaN3	Ceiling	0.29 mg/m3	US. ACGIH Threshold Limit Values, as amended (12 2010)
Sodium azide (Na(N3)) - as hydrazoic acid vapor	Ceiling	0.11 ppm	US. ACGIH Threshold Limit Values, as amended (12 2010)
Sodium azide (Na(N3)) - as HN3	Ceil_Time	0.1 ppm	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2005)
Sodium azide (Na(N3)) - as NaN3	Ceil_Time	0.3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2005)

Appropriate Engineering Controls

No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection: Chemical resistant gloves Suitable gloves can be recommended by the glove supplier. Wash hands after contact.

Other: Wear a lab coat or similar protective clothing.



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Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hygiene measures: Observe good industrial hygiene practices.

9. Physical and chemical properties

Appearance

Physical state: liquid
Form: liquid
Color: Various

Odor: Odorless

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: The physical-chemical properties of this material have not been fully investigated.

Initial boiling point and boiling range: No data available.

Flash Point: The physical-chemical properties of this material have not been fully investigated.

Evaporation rate: No data available.

Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%): No data available.

Flammability limit - lower (%): No data available.

Explosive limit - upper: No data available.

Explosive limit - lower: No data available.

Vapor pressure: No data available.

Vapor density: No data available.

Relative density: No data available.

Solubility(ies)

Solubility in water: Soluble

Solubility (other): The physical-chemical properties of this material have



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Partition coefficient (n-octanol/water):	not been fully investigated. No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	Not determined.

10. Stability and reactivity

Reactivity:	Stable under normal temperature conditions and recommended use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Not determined.
Conditions to avoid:	Avoid exposure to high temperatures or direct sunlight.
Incompatible Materials:	Metals. Water reactive material.
Hazardous Decomposition Products:	Stable; however, may decompose if heated.

11. Toxicological information

General information: No data on possible toxicity effects have been found.

Information on likely routes of exposure

Ingestion:	No harmful effects expected in amounts likely to be ingested by accident.
Inhalation:	Limited inhalation hazard at normal work temperatures.
Skin Contact:	Negligible irritation to skin at ambient temperatures.
Eye contact:	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.



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Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.
Inhalation: No data available.
Skin Contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix: 18,066.3 mg/kg
Dermal
Product: No data available.
Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Specified substance(s):
Sodium azide (Na(N₃)) Based on available data, the classification criteria are not met.

Serious Eye Damage/Eye Irritation
Product: No data available.

Respiratory or Skin Sensitization



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Product: No data available.

Specified substance(s):
Sodium azide (Na(N3)) Not a skin sensitizer.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.



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Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No negative effects on the aquatic environment are known.

Aquatic Invertebrates

Product: No negative effects on the aquatic environment are known.

Chronic hazards to the aquatic environment:

Fish

Product: No negative effects on the aquatic environment are known.

Aquatic Invertebrates

Product: No negative effects on the aquatic environment are known.

Toxicity to Aquatic Plants

Product: No negative effects on the aquatic environment are known.

Persistence and Degradability

Biodegradation

Product: Expected to be readily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: No data available.



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Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Sodium azide (Na(N3)) No data available.

Other adverse effects: The product is not expected to be hazardous to the environment.

13. Disposal considerations

General information: Dispose of waste and residues in accordance with local authority requirements.

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

DOTUN Number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Label(s):	Not regulated.
Packing Group:	Not regulated.
Marine Pollutant:	Not regulated.
Limited quantity	Not regulated.
Excepted quantity	Not regulated.
Special precautions for user:	Not regulated.



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IMDG

UN Number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
EmS No.:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine Pollutant:	Not regulated.
Special precautions for user:	Not regulated.

IATA

UN Number:	Not regulated.
Proper Shipping Name:	Not regulated.
Transport Hazard Class(es):	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine pollutant:	Not regulated.
Special precautions for user:	Not regulated.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.



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CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity

SODIUM PHOSPHATE, DIBASIC
SODIUM AZIDE

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Chemical Identity

Phosphoric acid, sodium salt (1:2)

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Phosphoric acid, sodium salt (1:2)

US. Massachusetts RTK - Substance List

Chemical Identity

Phosphoric acid, sodium salt (1:2)
Sodium azide (Na(N₃))



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US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Phosphoric acid, sodium salt (1:2)

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

16. Other information, including date of preparation or last revision

Issue Date:	08/26/2020
Version #:	1.1
Revision Information:	
Source of information:	European Chemicals Agency (ECHA): Information on Chemicals.
Further Information:	No data available.
Disclaimer:	<p>Disclaimer: The information contained herein has been obtained from various sources and is believed to be correct as of the date issued. However, neither BD nor any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability for a particular use of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. BD provides SDS in electronic form so the information may be more easily accessed. Due to the possibility of errors during transmission, BD makes no representations as to the completeness or accuracy of the information.</p>



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SAFETY DATA SHEET

1. Identification

Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
51-2090KZ	BD Cytofix/Cytoperm™ Fixation and Permeabilization Solution	

Other means of identification

SDS number: 088100012089

Recommended use and restriction on use

Recommended use: Scientific and industrial laboratory use. For research use only.

Restrictions on use: Not for use in diagnostic or therapeutic procedures.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Company Name: BD Biosciences, Pharmingen
Address: 10975 Torreyana Road
92121 San Diego, CA USA
Telephone: 1 877 232 8995 or 1 800 424 9300
Fax:
Contact Person: Technical Services
E-mail: ResearchApplications@bd.com

Emergency telephone number: ChemTrec 1 800 424 9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin sensitizer	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A

Environmental Hazards

Acute hazards to the aquatic environment	Category 3
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Label Elements

Hazard Symbol:

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Signal Word:	Danger
Hazard Statement:	H317: May cause an allergic skin reaction. H341: Suspected of causing genetic defects. H350: May cause cancer. H402: Harmful to aquatic life.
Precautionary Statements	
Prevention:	P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear protective gloves/protective clothing/eye protection/face protection. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P281: Use personal protective equipment as required. P273: Avoid release to the environment.
Response:	P302+P352: IF ON SKIN: Wash with plenty of water/... P333+P313: If skin irritation or rash occurs: Get medical advice/attention. P308+P313: IF exposed or concerned: Get medical advice/attention. P321: Specific treatment (see on this label). P363: Wash contaminated clothing before reuse.
Storage:	P405: Store locked up.
Disposal:	P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification:	None.

3. Composition/information on ingredients



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Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Formaldehyde		50-00-0	3 - <5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information:	Get medical attention if symptoms occur. May cause an allergic skin reaction. May cause cancer. Suspected of causing genetic defects.
Ingestion:	If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Get medical attention immediately.
Inhalation:	Move to fresh air. Get medical attention if any discomfort continues.
Skin Contact:	Flush contaminated area with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention promptly if symptoms occur after washing.

Most important symptoms/effects, acute and delayed

Symptoms:	Symptoms may be delayed.
Hazards:	May cause an allergic skin reaction. Suspected of causing genetic defects. May cause cancer.

Indication of immediate medical attention and special treatment needed

Treatment:	Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get immediate medical advice/attention.
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5. Fire-fighting measures

General Fire Hazards:	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Use water to keep fire exposed containers cool and disperse vapors.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray, fog, CO ₂ , dry chemical, or alcohol resistant foam.
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Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Fire or excessive heat may produce hazardous decomposition products.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No unusual fire or explosion hazards noted.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. Contact local authorities in case of spillage to drain/aquatic environment.

Methods and material for containment and cleaning up: Stop leak if possible without any risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Collect for salvage or disposal. Prevent runoff from entering drains, sewers, or streams. Report spills as required to appropriate authorities. See Section 8 of the SDS for Personal Protective Equipment. For waste disposal, see section 13 of the SDS.

Environmental Precautions: Avoid release to the environment.

7. Handling and storage

Precautions for safe handling: Wash promptly with soap and water if skin becomes contaminated. When using do not eat, drink or smoke. Read and follow manufacturer's recommendations. Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities: Store in tightly closed original container in a dry, cool and well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Formaldehyde	STEL	2 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	0.75 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	ST ESL	24 ppb	US. Texas. Effects Screening Levels (Texas)



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			Commission on Environmental Quality) (12 2010)
	AN ESL	2.7 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	ST ESL	12 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	5.4 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	ST ESL	30 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	3.3 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL	6.6 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	ST ESL	15 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	STEL	2 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA PEL	0.75 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA A LV	0.5 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	OSHA_ACT	0.5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	TWA	0.75 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	STEL	2 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	STEL	0.3 ppm	US. ACGIH Threshold Limit Values (03 2017)
	TWA	0.1 ppm	US. ACGIH Threshold Limit Values (03 2017)
	Ceil_Time	0.1 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Formaldehyde - as formaldehyde	Ceil_Time	0.1 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Formaldehyde	REL	0.016 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Formaldehyde - as formaldehyde	REL	0.016 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Appropriate Engineering Controls

Adequate ventilation should be provided whenever the material is heated or mists are generated.

Individual protection measures, such as personal protective equipment

General information:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Eye/face protection:

Wear safety glasses with side shields (or goggles).



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Skin Protection	
Hand Protection:	Use suitable protective gloves if risk of skin contact.
Other:	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Hygiene measures:	Do not eat, drink or smoke when using the product. Wash promptly if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking and using the toilet. Avoid contact with skin.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Clear
Odor:	Odorless
Odor threshold:	No data available.
pH:	Not applicable
Melting point/freezing point:	The physical-chemical properties of this material have not been fully investigated.
Initial boiling point and boiling range:	No data available.
Flash Point:	The physical-chemical properties of this material have not been fully investigated.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	Soluble
Solubility (other):	The physical-chemical properties of this material have not been fully investigated.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.



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Decomposition temperature: No data available.
Viscosity: Not determined.

10. Stability and reactivity

Reactivity: Stable

Chemical Stability: No data available.

Possibility of hazardous reactions: None under normal conditions. Stable; however, may decompose if heated.

Conditions to avoid: Avoid exposure to high temperatures or direct sunlight.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: By heating and fire, harmful vapors/gases may be formed.

11. Toxicological information

General information: May cause allergic skin reaction based on human experience.

Information on likely routes of exposure

Ingestion: Ingestion may cause irritation and malaise.

Inhalation: Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin Contact: Prolonged or repeated contact may cause skin sensitization in susceptible individuals.

Eye contact: Avoid contact with eyes.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: ATEmix: 2,379.25 mg/kg



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Dermal
Product: ATEmix: 6,423.98 mg/kg

Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Serious Eye Damage/Eye Irritation
Product: No data available.

Respiratory or Skin Sensitization
Product: No data available.

Specified substance(s):
Formaldehyde
Skin sensitization:, in vivo (Guinea pig): Sensitising

Carcinogenicity
Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
Formaldehyde Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:
Formaldehyde Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
Formaldehyde
Cancer



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Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s):
Formaldehyde Inhalation - vapor: Respiratory system - Causes damage to organs.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Formaldehyde LC 50 (Striped bass (*Morone saxatilis*), 96 h): 6.7 mg/l
LC 50 (Black bullhead (*Ameiurus melas*), 96 h): 25 mg/l
LC 50 (*Morone saxatilis*, 96 h): 6.7 mg/l Experimental result, Key study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Formaldehyde EC 50 (Water flea (*Daphnia pulex*), 48 h): 5.8 mg/l Intoxication
EC 50 (*Daphnia pulex*, 48 h): 5.8 mg/l Experimental result, Key study

Chronic hazards to the aquatic environment:



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Fish

Product: No data available.

Specified substance(s):
Formaldehyde LC 50 (Danio rerio, 144 h): 6.9 mg/l Experimental result, Supporting study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):
Formaldehyde LOAEL (Ceriodaphnia dubia, 7 d): 6 mg/l Experimental result, Not specified

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):
Formaldehyde EC 50 (Green algae (Scenedesmus subspicatus), 72 h): 4.89 mg/l

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):
Formaldehyde Readily biodegradable
97 % (2 Weeks) Detected in water. Experimental result, Key study

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):
Formaldehyde Will not bio-accumulate.
Bioconcentration Factor (BCF): < 1 Aquatic sediment Experimental result,
Weight of Evidence study

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Formaldehyde No data available.

Other adverse effects: No data available.



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13. Disposal considerations

General information:	Dispose of waste and residues in accordance with local authority requirements.
Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.
Contaminated Packaging:	No data available.

14. Transport information

DOTUN Number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Label(s):	Not regulated.
Packing Group:	Not regulated.
Marine Pollutant:	Not regulated.
Limited quantity	Not regulated.
Excepted quantity	Not regulated.
Special precautions for user:	Not regulated.

IMDG

UN Number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
EmS No.:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine Pollutant:	Not regulated.
Special precautions for user:	Not regulated.



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IATA

UN Number: Not regulated.
Proper Shipping Name: Not regulated.
Transport Hazard Class(es):
 Class: Not regulated.
 Subsidiary risk: Not regulated.
Packing Group: Not regulated.
Environmental Hazards
 Marine pollutant: Not regulated.

Special precautions for user: Not regulated.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Formaldehyde	respiratory tract irritation Cancer Flammability Skin irritation Skin sensitization Eye irritation Acute toxicity Respiratory sensitization

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	100 lbs.
Phosphoric acid, sodium salt (1:2)	5000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard
Respiratory or Skin Sensitization
Germ Cell Mutagenicity
Carcinogenicity



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SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	100 lbs.	500 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	100 lbs.
Phosphoric acid, sodium salt (1:2)	5000 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	500lbs

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
Formaldehyde	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	Reportable quantity: 100 lbs.
Phosphoric acid, sodium salt (1:2)	Reportable quantity: 5000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	15000 lbs

US State Regulations

US. California Proposition 65

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
Formaldehyde

US. Massachusetts RTK - Substance List

<u>Chemical Identity</u>
Formaldehyde

US. Pennsylvania RTK - Hazardous Substances

<u>Chemical Identity</u>
Formaldehyde

US. Rhode Island RTK

<u>Chemical Identity</u>
Formaldehyde



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16. Other information, including date of preparation or last revision

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Revision Information:

Further Information: No data available.

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