Kit Components

<table>
<thead>
<tr>
<th>Kit Product No.</th>
<th>Kit Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>559619</td>
<td>BD Pharmingen™ FITC BrdU Flow Kit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kit Component(s)</th>
<th>Kit Component(s) Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-23614L</td>
<td>BRDU FITC MAB 50TST 3D4</td>
</tr>
<tr>
<td>51-2359KC</td>
<td>VIA-PROBE 7AAD SOLN 50TST</td>
</tr>
<tr>
<td>51-2356KC</td>
<td>CYTOPERM PLUS BUF 10ML</td>
</tr>
<tr>
<td>51-2091KE</td>
<td>PERM WASH BUF 25ML</td>
</tr>
<tr>
<td>51-2090KE</td>
<td>FIXATION AND PERMEABILIZAITON SOLN 25ML</td>
</tr>
<tr>
<td>51-2358KC</td>
<td>DNASE BUF 300UL</td>
</tr>
<tr>
<td>51-2420KC</td>
<td>BRDU BUF 5MG</td>
</tr>
</tbody>
</table>

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.
SAFETY DATA SHEET

1. Identification

Product identifier

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Product name</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-23614L</td>
<td>BRDU FITC MAB</td>
<td></td>
</tr>
</tbody>
</table>

Other means of identification

SDS number: 088100012139

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

Not classified

Label Elements

Hazard Symbol: No symbol
Signal Word: No signal word.
Hazard Statement: not applicable
Precautionary Statements: not applicable

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

3. Composition/information on ingredients
Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td></td>
<td>26628-22-8</td>
<td>0.089%</td>
</tr>
</tbody>
</table>

* 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

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.
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.

Environmental Precautions:
Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:
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 a cool, dry place. Keep container tightly closed.

8. Exposure controls/personal protection

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.1 ppm</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as NaN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>AN ESL</td>
<td>0.07 ppb</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>ST ESL</td>
<td>0.7 ppb</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>AN ESL</td>
<td>0.2 µg/m3</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>ST ESL</td>
<td>2 µg/m3</td>
</tr>
</tbody>
</table>

Source:
- US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
- US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
### 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.

**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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**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.
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.

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: No data available.

Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: not applicable

Skin Corrosion/Irritation
Product: Based on available data, the classification criteria are not met.

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

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: Based on available data, the classification criteria are not met.

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

Germ Cell Mutagenicity

In vitro
Product: not applicable

In vivo
Product: not applicable

Reproductive toxicity
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product: Based on available data, the classification criteria are not met.

Aspiration Hazard
Product: Based on available data, the classification criteria are not met.

Other effects: None known.

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.

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.

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.

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)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Not classified
Not classified

SARA 302 Extremely Hazardous Substance

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
<td>500 lbs.</td>
</tr>
</tbody>
</table>
SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>500 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

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

US State Regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List
<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
</tr>
</tbody>
</table>

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

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: 03/20/2018

Version #: 1.0

Revision Information:


Further Information: No data available.
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.
SAFETY DATA SHEET

1. Identification

Product identifier

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Product name</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-2359KC</td>
<td>7-AAD</td>
<td></td>
</tr>
</tbody>
</table>

Other means of identification

SDS number: 088100012138

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.
Restrictions on use: None known.

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
Not classified

Label Elements

Hazard Symbol: No symbol
Signal Word: No signal word.
Hazard Statement:
Precautionary Statements:
not applicable
not applicable

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

3. Composition/information on ingredients
## Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)&lt;sup&gt;*&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td></td>
<td>26628-22-8</td>
<td>0.088%</td>
</tr>
</tbody>
</table>

<sup>*</sup> 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**

- **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.

Environmental Precautions:
Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:
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 a cool, dry place. Keep container tightly closed.

8. Exposure controls/personal protection

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.1 ppm</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as NaN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>Ceiling</td>
<td>0.1 ppm</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>AN ESL</td>
<td>0.07 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>0.7 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>0.2 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>2 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
</tbody>
</table>
Sodium azide (Na(N3)) - as NaN₃

Ceiling: 0.1 ppm
0.3 mg/m³

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

Sodium azide (Na(N3)) - as hydrazoic acid vapor

Ceiling: 0.11 ppm

US. ACGIH Threshold Limit Values (12 2010)

Sodium azide (Na(N3)) - as HN₃

Ceil_Time: 0.1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Sodium azide (Na(N3)) - as NaN₃

Ceil_Time: 0.3 mg/m³

US. NIOSH: Pocket Guide to Chemical Hazards (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.

**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:** No data available.
- **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.
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.

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: No data available.

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: not applicable

Skin Corrosion/Irritation Product: Based on available data, the classification criteria are not met.

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

Respiratory or Skin Sensitization Product: Not a skin sensitizer.

Carcinogenicity Product: Based on available data, the classification criteria are not met.

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

Germ Cell Mutagenicity

In vitro
Product: not applicable

In vivo
Product: not applicable

Reproductive toxicity
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product: Based on available data, the classification criteria are not met.

Aspiration Hazard
Product: Based on available data, the classification criteria are not met.

Other effects: None known.

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.

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.
**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.

  None present or none present in regulated quantities.

- **CERCLA Hazardous Substance List (40 CFR 302.4):**
  - **Chemical Identity**
    - Phosphoric acid, sodium salt (1:2)
    - Sodium azide (Na(N3))
  - **Reportable quantity**
    - 5000 lbs.
    - 1000 lbs.

- **Superfund Amendments and Reauthorization Act of 1986 (SARA)**
  - **Hazard categories**
    - Not classified
SARA 302 Extremely Hazardous Substance

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
<td>500 lbs.</td>
</tr>
</tbody>
</table>

SARA 304 Emergency Release Notification

<table>
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<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
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</table>

SARA 311/312 Hazardous Chemical

<table>
<thead>
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<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>500 lbs.</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>Reportable quantity: 5000 lbs.</td>
</tr>
</tbody>
</table>

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
</tr>
</tbody>
</table>

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

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: 03/20/2018

Version #: 1.0
Revision Information:


Further Information: No data available.

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.
SAFETY DATA SHEET

1. Identification

Product identifier

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Product name:</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-2356KC</td>
<td>BD Cytoperm™</td>
<td>Permeabilization Buffer Plus</td>
</tr>
</tbody>
</table>

Other means of identification

SDS number: 088100012136

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.
Restrictions on use: None known.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer
Company Name: BD Biosciences, Pharmingen
Address: 10975 Torreyana Road
          92121 San Diego, CAUSA
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
Precautionary Statements: Not applicable

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

3. Composition/information on ingredients
Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td></td>
<td>26628-22-8</td>
<td>79.557PPM</td>
</tr>
</tbody>
</table>

* 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

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.

Environmental Precautions:
Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:
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 a cool, dry place. Keep container tightly closed.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.1 ppm</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as NaN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.1 ppm</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>AN ESL</td>
<td>0.07 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>ST ESL</td>
<td>0.7 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>0.2 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
</tbody>
</table>
**ST ESL** | 2 µg/m^3 | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
---|---|---
Ceiling | 0.1 ppm | 0.3 mg/m^3 | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
Sodium azide (Na(N3)) - as NaN3 | Ceiling | 0.29 mg/m^3 | US. ACGIH Threshold Limit Values (12 2010)
Sodium azide (Na(N3)) - as hydrazoic acid vapor | Ceiling | 0.11 ppm | US. ACGIH Threshold Limit Values (12 2010)
Sodium azide (Na(N3)) - as HN3 | Cell_Time | 0.1 ppm | US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Sodium azide (Na(N3)) - as NaN3 | Cell_Time | 0.3 mg/m^3 | US. NIOSH: Pocket Guide to Chemical Hazards (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.

**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:** Light brown

**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:** 189 °C The physical-chemical properties of this material have...
not been fully investigated.

**Flash Point:**
95 °C 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.

**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.

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: No data available.

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: not applicable

Skin Corrosion/Irritation Product: Based on available data, the classification criteria are not met.

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

Respiratory or Skin Sensitization Product: Not a skin sensitizer.

Carcinogenicity Product: Based on available data, the classification criteria are not met.

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
No carcinogenic components identified

Germ Cell Mutagenicity

**In vitro**
Product: not applicable

**In vivo**
Product: not applicable

Reproductive toxicity
Product: Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Single Exposure**
Product: Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeated Exposure**
Product: Based on available data, the classification criteria are not met.

**Aspiration Hazard**
Product: Based on available data, the classification criteria are not met.

**Other effects:** None known.

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.

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

DOT UN 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.
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)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
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<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
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<td>1000 lbs.</td>
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</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Not classified
Not classified
SARA 302 Extremely Hazardous Substance

<table>
<thead>
<tr>
<th>Chemical Identity</th>
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<th>Threshold Planning Quantity</th>
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<tbody>
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SARA 311/312 Hazardous Chemical

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<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>5000 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>Reportable quantity: 5000 lbs.</td>
</tr>
</tbody>
</table>

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

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

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

Chemical Identity

Dimethyl sulfoxide

US. Massachusetts RTK - Substance List

Chemical Identity

Sodium azide (Na(N3))

US. Pennsylvania RTK - Hazardous Substances

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

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: 03/20/2018
Version #: 1.0

Revision Information:


Further Information: No data available.

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.
SAFETY DATA SHEET

1. Identification

Product identifier

<table>
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<tr>
<th>Product No.:</th>
<th>Product name:</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-2091KE</td>
<td>BD Perm/Wash™ Buffer (10X)</td>
<td></td>
</tr>
</tbody>
</table>

Other means of identification

SDS number: 088100012090

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.
Restrictions on use: None known.

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

Not classified

Label Elements

Hazard Symbol: No symbol
Signal Word: No signal word.
Hazard Statement: not applicable
Precautionary Statements: not applicable

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

3. Composition/information on ingredients
Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td></td>
<td>26628-22-8</td>
<td>0.083%</td>
</tr>
</tbody>
</table>

* 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

#### 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.

Environmental Precautions: Avoid release to the environment.

7. Handling and storage

Precautions for safe handling: 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 a cool, dry place. Keep container tightly closed.

8. Exposure controls/personal protection

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.1 ppm</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as NaN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3)) - as HN3</td>
<td>Ceiling</td>
<td>0.3 mg/m3</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>AN ESL</td>
<td>0.07 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>0.7 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>AN ESL</td>
<td>0.2 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>2 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (2010)</td>
</tr>
</tbody>
</table>
Sodium azide (Na(N3)) - as NaN₃

Ceiling 0.1 ppm 0.3 mg/m³

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

Sodium azide (Na(N3)) - as hydrazoic acid vapor

Ceiling 0.11 ppm

US. ACGIH Threshold Limit Values (12 2010)

Sodium azide (Na(N3)) - as HN₃

Ceil_Time 0.1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Sodium azide (Na(N3)) - as NaN₃

Ceil_Time 0.3 mg/m³

US. NIOSH: Pocket Guide to Chemical Hazards (2005)

### 9. Physical and chemical properties

#### Appearance

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form:</td>
<td>liquid</td>
</tr>
<tr>
<td>Color:</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor:</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
</tbody>
</table>
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.
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.

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: No data available.

Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: not applicable

Skin Corrosion/Irritation
Product: Based on available data, the classification criteria are not met.

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

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: Based on available data, the classification criteria are not met.

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

No carcinogenic components identified
Germ Cell Mutagenicity

In vitro
Product: not applicable

In vivo
Product: not applicable

Reproductive toxicity
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product: Based on available data, the classification criteria are not met.

Aspiration Hazard
Product: Based on available data, the classification criteria are not met.

Other effects: None known.

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.

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

DOT UN 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.

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)
  None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
  Not classified
  Not classified
### SARA 302 Extremely Hazardous Substance

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
<td>500 lbs.</td>
</tr>
</tbody>
</table>

### SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>1000 lbs.</td>
</tr>
</tbody>
</table>

### SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (Na(N3))</td>
<td>500lbs</td>
</tr>
</tbody>
</table>

### SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>Reportable quantity: 5000 lbs.</td>
</tr>
</tbody>
</table>

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

### US State Regulations

#### US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td></td>
</tr>
</tbody>
</table>

#### US. Massachusetts RTK - Substance List

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td></td>
</tr>
<tr>
<td>Sodium azide (Na(N3))</td>
<td></td>
</tr>
</tbody>
</table>

#### US. Pennsylvania RTK - Hazardous Substances

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td></td>
</tr>
</tbody>
</table>

#### 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: 03/20/2018
Version #: 1.0

Revision Information:


Further Information: No data available.

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.
SAFETY DATA SHEET

1. Identification

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product No.: 51-2090KE</td>
<td>BD Cytofix/Cytoperm™ Buffer</td>
</tr>
</tbody>
</table>

Other means of identification

- SDS number: 088100012088

Recommended use and restriction on use

- Recommended use: Reserved for industrial and professional use.
- Restrictions on use: None known.

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 Corrosion/Irritation: Category 2
- Serious Eye Damage/Eye Irritation: Category 1
- Skin sensitizer: Category 1
- Germ Cell Mutagenicity: Category 2
- Carcinogenicity: Category 1A

**Environmental Hazards**

- Acute hazards to the aquatic environment: Category 3

**Label Elements**

- Hazard Symbol:
**Signal Word:** Danger

**Hazard Statement:**
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- 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:**
- P264: Wash thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- 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:**
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352: IF ON SKIN: Wash with plenty of water.
- P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
- P310: Immediately call a POISON CENTER/doctor.
- 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
Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td></td>
<td>50-00-0</td>
<td>4.203%</td>
</tr>
</tbody>
</table>

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

4. First-aid measures

General information: If medical advice is needed, have product container or label at hand.
Causes serious eye damage. Causes skin irritation. Suspected of causing genetic defects. May cause cancer. May cause an allergic skin reaction. Get immediate medical advice/attention.

Ingestion: If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Get medical attention immediately.

Inhalation: Get medical attention if any discomfort continues. Provide fresh air, warmth and rest, preferably in comfortable upright sitting position.

Skin Contact: Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Eye contact: Important! Immediately rinse with water for 60 minutes. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Symptoms may be delayed.

Hazards: Causes serious eye damage. Causes skin irritation. May cause an allergic skin reaction. May cause genetic defects. May cause cancer.

Indication of immediate medical attention and special treatment needed

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

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.
Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:**
Water spray, fog, CO2, dry chemical, or alcohol resistant foam.

**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:**
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wash thoroughly after dealing with a spillage. 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 spillage with suitable absorbent material. Collect for salvage or disposal. 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.

**Environmental Precautions:**
Do not release into the environment. Environmental manager must be informed of all major spillages.

7. Handling and storage

**Precautions for safe handling:**
Wash at the end of each work shift and before eating, smoking and using the toilet. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes and avoid contact with skin and clothing. 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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>0.75 ppm</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>24 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>2.7 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>12 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>5.4 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>30 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>3.3 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>AN ESL</td>
<td>6.6 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>ST ESL</td>
<td>15 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>2 ppm</td>
<td>US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)</td>
</tr>
<tr>
<td></td>
<td>TWA PEL</td>
<td>0.75 ppm</td>
<td>US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)</td>
</tr>
<tr>
<td></td>
<td>TWA A LV</td>
<td>0.5 ppm</td>
<td>US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)</td>
</tr>
<tr>
<td></td>
<td>OSHA_AC</td>
<td>0.5 ppm</td>
<td>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.75 ppm</td>
<td>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>0.3 ppm</td>
<td>US. ACGIH Threshold Limit Values (03 2017)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.1 ppm</td>
<td>US. ACGIH Threshold Limit Values (03 2017)</td>
</tr>
<tr>
<td></td>
<td>Ceil_Time</td>
<td>0.1 ppm</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2005)</td>
</tr>
<tr>
<td>Formaldehyde - as</td>
<td>Ceil_Time</td>
<td>0.1 ppm</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2005)</td>
</tr>
<tr>
<td>formaldehyde</td>
<td>REL</td>
<td>0.016 ppm</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2005)</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>REL</td>
<td>0.016 ppm</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2005)</td>
</tr>
</tbody>
</table>
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:
Chemical goggles and face shield are recommended.

Skin Protection
Hand Protection: Chemical resistant gloves
Other: Wear a lab coat or similar protective clothing.

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. Do not breathe dust/fume/gas/mist/vapours/spray.

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

10. Stability and reactivity

Reactivity: Product is not reactive under normal conditions and recommended use. Stable
Chemical Stability: No data available.
Possibility of hazardous reactions: Stable; however, may decompose if heated. None under normal conditions.
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

Information on likely routes of exposure
Ingestion: Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.
Inhalation: May cause irritation to the respiratory system.
Skin Contact: Causes skin irritation. Prolonged or repeated contact may cause skin sensitization in susceptible individuals.
Eye contact: May cause chemical eye burns.

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

Dermal
Product: ATEmix: 6,423.98 mg/kg

Inhalation
Product: ATEmix: 71.38 mg/l

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: May cause skin irritation.

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

Respiratory or Skin Sensitization
Product: Prolonged or repeated contact may cause skin sensitization in susceptible individuals.

Carcinogenicity
Product: May cause cancer.
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.


Formaldehyde  Cancer

Germ Cell Mutagenicity

In vitro
Product:  No data available.

In vivo
Product:  not applicable
not applicable

Reproductive toxicity
Product:  No data available.

Specific Target Organ Toxicity - Single Exposure
Product:  Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product:  Based on available data, the classification criteria are not met.

Aspiration Hazard
Product:  Based on available data, the classification criteria are not met.

Other effects:  No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product:  Harmful to aquatic organisms.

Aquatic Invertebrates
Product:  Harmful to aquatic organisms.
Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

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
  90 % (28 d) Detected in water. Experimental result, Key study
  55 - 60 % (40 d) Detected in water. Experimental result, Not specified
  91 % (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.

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.
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.
Exempted 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.
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)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>OSHA hazard(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>respiratory tract irritation Cancer</td>
</tr>
<tr>
<td></td>
<td>Flammability</td>
</tr>
<tr>
<td></td>
<td>Skin irritation</td>
</tr>
<tr>
<td></td>
<td>Skin sensitization</td>
</tr>
<tr>
<td></td>
<td>Eye irritation</td>
</tr>
<tr>
<td></td>
<td>Acute toxicity</td>
</tr>
<tr>
<td></td>
<td>Respiratory sensitization</td>
</tr>
</tbody>
</table>

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>100 lbs.</td>
</tr>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard
Skin Corrosion or Irritation
Serious eye damage or eye irritation
Respiratory or Skin Sensitization
Germ Cell Mutagenicity
Carcinogenicity
SARA 302 Extremely Hazardous Substance

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>100 lbs.</td>
<td>500 lbs.</td>
</tr>
</tbody>
</table>

SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>100 lbs.</td>
</tr>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>500 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reporting threshold for other users</th>
<th>Reporting threshold for manufacturing and processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>10000 lbs</td>
<td>25000 lbs</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>Reportable quantity: 100 lbs.</td>
</tr>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>Reportable quantity: 5000 lbs.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>15000 lbs</td>
</tr>
</tbody>
</table>

US State Regulations

US. California Proposition 65
This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Formaldehyde Carcinogenic.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>

US. Massachusetts RTK - Substance List

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>

US. Pennsylvania RTK - Hazardous Substances

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
</tr>
</tbody>
</table>
US. Rhode Island RTK
Chemical Identity
Formaldehyde

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

Issue Date: 03/20/2018

Version #: 1.0

Revision Information:
No data available.

Further Information:
No data available.

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.
SAFETY DATA SHEET

1. Identification

Product identifier

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Product name</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-2358KC</td>
<td>DNase</td>
<td></td>
</tr>
</tbody>
</table>

Other means of identification

SDS number: 088100012137

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.
Restrictions on use: None known.

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

Not classified

Label Elements

Hazard Symbol: No symbol
Signal Word: No signal word.
Hazard Statement: not applicable
Precautionary Statements: not applicable

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

3. Composition/information on ingredients
Mixtures

Composition Comments: The components are not hazardous or are below required disclosure limits.

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

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.

Environmental Precautions:
Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:
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 a cool, dry place. Keep container tightly closed.

8. Exposure controls/personal protection

Control Parameters
Occupational Exposure Limits
None of the components have assigned exposure limits.

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.
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Various</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Upper/lower limit on flammability or explosive limits

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability limit - upper (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Solubility(ies)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Solubility (other)</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

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.

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: No data available.

Dermal Product: No data available.

Inhalation Product: No data available.
Repeated dose toxicity
Product: not applicable

Skin Corrosion/Irritation
Product: Based on available data, the classification criteria are not met.

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

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: Based on available data, the classification criteria are not met.

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

   No carcinogenic components identified

Germ Cell Mutagenicity

   In vitro
   Product: not applicable

   In vivo
   Product: not applicable

Reproductive toxicity
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product: Based on available data, the classification criteria are not met.

Aspiration Hazard
Product: Based on available data, the classification criteria are not met.

Other effects: None known.

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.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

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

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

**IATA**

| UN Number: | Not regulated. |
| Proper Shipping Name: | Not regulated. |
| Transport Hazard Class(es): | Not regulated. |
| Class: | Not regulated. |
| Subsidiary risk: | Not regulated. |
| Packing Group: | Not regulated. |
| Environmental Hazards: | Not regulated. |
| 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)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium</td>
<td>5000 lbs.</td>
</tr>
<tr>
<td>salt (1:2)</td>
<td></td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Not classified
Not classified

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium</td>
<td>5000 lbs.</td>
</tr>
<tr>
<td>salt (1:2)</td>
<td></td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Chemical
None present or none present in regulated quantities.

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium</td>
<td>Reportable quantity: 5000 lbs.</td>
</tr>
<tr>
<td>salt (1:2)</td>
<td></td>
</tr>
</tbody>
</table>

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.
US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

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

<table>
<thead>
<tr>
<th><strong>Issue Date:</strong></th>
<th>03/20/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Version #:</strong></td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Revision Information:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Source of information:</strong></td>
<td>European Chemicals Agency (ECHA): Information on Chemicals.</td>
</tr>
<tr>
<td><strong>Further Information:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Disclaimer:</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

1. Identification

Product identifier

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Product name</th>
<th>Common name(s), synonym(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-2420KC</td>
<td>BRDU</td>
<td></td>
</tr>
</tbody>
</table>

Other means of identification

SDS number: 088100012145

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.
Restrictions on use: None known.

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

Germ Cell Mutagenicity Category 1B
Toxic to reproduction Category 2

Label Elements

Hazard Symbol:

Signal Word: Danger
Hazard Statement:  
H340: May cause genetic defects.  
H361: Suspected of damaging fertility or the unborn child.  

Precautionary Statements  
Prevention:  
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.  

Response:  
P308+P313: IF exposed or concerned: Get medical advice/attention.  

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  
Mixtures  

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Bromo-2’-deoxyuridine</td>
<td></td>
<td>59-14-3</td>
<td>0.98%</td>
</tr>
</tbody>
</table>

* 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 immediate medical advice/attention. If medical advice is needed, have product container or label at hand.  

Ingestion:  
If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Get medical attention immediately.  

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

Skin Contact:  
Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get medical attention if symptoms occur. 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 damage fertility or the unborn child. May cause genetic defects.

Indication of immediate medical attention and special treatment needed

Treatment: IF exposed or concerned: Get medical advice/attention. Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water.

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.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, fog, CO2, dry chemical, or alcohol resistant foam.

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

Environmental Precautions:
Do not release into the environment. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling:
Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes and avoid contact with skin and clothing. 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
None of the components have assigned exposure limits.

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).

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. Do not breathe dust/fume/gas/mist/vapours/spray.

9. Physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form:</td>
<td>liquid</td>
</tr>
<tr>
<td>Color:</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor:</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>The physical-chemical properties of this material have not been fully investigated.</td>
</tr>
</tbody>
</table>

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

10. Stability and reactivity

Reactivity: Stable
Chemical Stability: No data available.
Possibility of hazardous reactions: Stable; however, may decompose if heated. None under normal conditions.

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: Negligible irritation to skin at ambient temperatures.

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: No data available.

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.
Skin Corrosion/Irritation
Product: not applicable

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

Respiratory or Skin Sensitization
Product: Prolonged or repeated contact may cause skin sensitization in susceptible individuals.

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

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: Category 1 Mutagen.

In vivo
Product: Category 1 Mutagen.

Reproductive toxicity
Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
Product: Based on available data, the classification criteria are not met.

Aspiration Hazard
Product: Based on available data, the classification criteria are not met.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:
Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.

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.

Mobility in soil:
No data available.

Known or predicted distribution to environmental compartments
5-Bromo-2’-deoxyuridine
No data available.

Other adverse effects:
No data available.

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

**DOT**

UN 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.

**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)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Bromo-2'-deoxyuridine</td>
<td>10000 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, sodium salt (1:2)</td>
<td>Reportable quantity: 5000 lbs.</td>
</tr>
</tbody>
</table>

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
US. New Jersey Worker and Community Right-to-Know Act
US. Massachusetts RTK - Substance List
US. Pennsylvania RTK - Hazardous Substances
US. Rhode Island RTK
16. Other information, including date of preparation or last revision

Issue Date: 03/20/2018

Version #: 1.0

Revision Information:

Further Information: No data available.

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