<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEL821001KT</td>
<td>Opal 7-Color Automation IHC Kit 50 Slide</td>
</tr>
</tbody>
</table>

Components:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP1609</td>
<td>1X Plus Automation Amplification Diluent</td>
</tr>
<tr>
<td>FP1487A</td>
<td>Opal 520 Reagent</td>
</tr>
<tr>
<td>FP1488A</td>
<td>Opal 570 Reagent</td>
</tr>
<tr>
<td>FP1497A</td>
<td>Opal 690 Reagent</td>
</tr>
<tr>
<td>FP1494A</td>
<td>Opal 540 Reagent</td>
</tr>
<tr>
<td>FP1490A</td>
<td>Spectral DAPI</td>
</tr>
<tr>
<td>FP1496A</td>
<td>Opal 650 Reagent</td>
</tr>
<tr>
<td>ARD1001EA</td>
<td>Antibody Diluent, 1X, 100mL</td>
</tr>
<tr>
<td>ARH1001EA</td>
<td>PolyHRP Broad Spectrum</td>
</tr>
<tr>
<td>DMSO0500UL</td>
<td>DMSO</td>
</tr>
<tr>
<td>FP1495A</td>
<td>Opal 620 Reagent</td>
</tr>
</tbody>
</table>
1 Identification

- **Product identifier**
  - **Trade name:** 1X Plus Automation Amplification Diluent
  - **Product number:** FP1609
  - **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** PerkinElmer Inc
    549 Albany st
    Boston, MA 02118
  - **Information department:**
    US Technical Support
    800-762-4000
  - **Emergency telephone number:**
    If inside USA, call CHEMTREC at 1-800-424-9300
    If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - **Repr. 1A H360** May damage fertility or the unborn child.
  - **Additional information:** For the wording of the listed H phrases refer to section 16.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**

  ![GHS08](image)

- **Signal word** Danger

- **Hazard statements**
  - May damage fertility or the unborn child.

- **Precautionary statements**
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - IF exposed or concerned: Get medical advice/attention.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 0
    - Reactivity = 0

(Contd. on page 2)
Trade name: 1X Plus Automation Amplification Diluent

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:

| CAS Number | Substance                     | Concentration |%
|------------|-------------------------------|---------------|
| 1330-43-4  | boric acid, disodium salt     |               | 1
| 10043-35-3 | boric acid                    |               | 1

4 First-aid measures

- Description of first aid measures
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Immediately rinse with water.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: If symptoms persist consult doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed: No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.

- Special hazards arising from the substance or mixture: No further relevant information available.

- Advice for firefighters
  - Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.

- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

- Protective Action Criteria for Chemicals
  - PAC-1:
    - 1330-43-4 boric acid, disodium salt 6 mg/m³
    - 10043-35-3 boric acid 6 mg/m³
    - 25322-68-3 Polyethylene glycol 30 mg/m³
    - 7722-84-1 hydrogen peroxide solution 10 ppm
    - 12058-66-1 Sodium Stannate 11 mg/m³
Trade name: 1X Plus Automation Amplification Diluent

<table>
<thead>
<tr>
<th></th>
<th>Component Details</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1330-43-4</td>
<td>boric acid, disodium salt</td>
<td>88 mg/m³</td>
</tr>
<tr>
<td>10043-35-3</td>
<td>boric acid</td>
<td>23 mg/m³</td>
</tr>
<tr>
<td>25322-68-3</td>
<td>Polyethylene glycol</td>
<td>1,300 mg/m³</td>
</tr>
<tr>
<td>7722-84-1</td>
<td>hydrogen peroxide solution</td>
<td>50 ppm</td>
</tr>
<tr>
<td>12058-66-1</td>
<td>Sodium Stannate</td>
<td>120 mg/m³</td>
</tr>
<tr>
<td>PAC-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1330-43-4</td>
<td>boric acid, disodium salt</td>
<td>530 mg/m³</td>
</tr>
<tr>
<td>10043-35-3</td>
<td>boric acid</td>
<td>830 mg/m³</td>
</tr>
<tr>
<td>25322-68-3</td>
<td>Polyethylene glycol</td>
<td>7,700 mg/m³</td>
</tr>
<tr>
<td>7722-84-1</td>
<td>hydrogen peroxide solution</td>
<td>100 ppm</td>
</tr>
<tr>
<td>12058-66-1</td>
<td>Sodium Stannate</td>
<td>720 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling: Open and handle receptacle with care.
  - Information about protection against explosions and fires: Keep respiratory protective device available.

- Conditions for safe storage, including any incompatibilities

- Storage:
  - Requirements to be met by storerooms and containers: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
  - Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters

- Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Component</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-43-4</td>
<td>REL: 1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>anhydrous Long-term value: 1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TLV: 6* mg/m³</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 2* mg/m³</td>
</tr>
<tr>
<td></td>
<td>*as inhalable fraction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10043-35-3</td>
<td>REL: 1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>anhydrous Long-term value: 1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TLV: 6* mg/m³</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 2* mg/m³</td>
</tr>
<tr>
<td></td>
<td>*as inhalable fraction</td>
</tr>
</tbody>
</table>

- Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:
  - Keep away from food and beverages.
  - Wash hands before breaks and at the end of work.
  - Store protective clothing separately.
### Respiratory protection:
Suitable respiratory protective device recommended.

### Protection of hands:

* Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

**Selection of the glove material**

The selection of the glove material does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Penetration time of glove material**

The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

* Eye protection: Goggles recommended during refilling.

### 9 Physical and chemical properties

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>General Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td>Form:</td>
</tr>
<tr>
<td>Color:</td>
</tr>
<tr>
<td>Odor:</td>
</tr>
<tr>
<td>Odor threshold:</td>
</tr>
<tr>
<td>pH-value:</td>
</tr>
<tr>
<td>Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range:</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
</tr>
<tr>
<td>Flash point:</td>
</tr>
<tr>
<td>Flammability (solid, gaseous):</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
</tr>
<tr>
<td>Auto igniting:</td>
</tr>
<tr>
<td>Danger of explosion:</td>
</tr>
<tr>
<td>Explosion limits:</td>
</tr>
<tr>
<td>Lower:</td>
</tr>
<tr>
<td>Upper:</td>
</tr>
<tr>
<td>Vapor pressure at 20 ºC (68 ºF):</td>
</tr>
<tr>
<td>Density:</td>
</tr>
<tr>
<td>Relative density</td>
</tr>
<tr>
<td>Vapor density</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water:</td>
</tr>
</tbody>
</table>
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
  - **Possibility of hazardous reactions**: No dangerous reactions known.
  - **Conditions to avoid**: No further relevant information available.
  - **Incompatible materials**: No further relevant information available.
  - **Hazardous decomposition products**: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**
    - **Primary irritant effect**:
      - **on the skin**: No irritant effect.
      - **on the eye**: No irritating effect.
  - **Sensitization**: No sensitizing effects known.
- **Additional toxicological information**:
The product shows the following dangers according to internally approved calculation methods for preparations:

#### Carcinogenic categories

- **IARC (International Agency for Research on Cancer)**
  - 7722-84-1 hydrogen peroxide solution
    - IARC Category: 3

- **NTP (National Toxicology Program)**
  - None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**
  - None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
  - **Persistence and degradability**: No further relevant information available.
  - **Behavior in environmental systems**:
    - **Bioaccumulative potential**: No further relevant information available.
    - **Mobility in soil**: No further relevant information available.
Trade name: 1X Plus Automation Amplification Diluent

- Ecotoxic effects: N/A
- Other information: N/A
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

### 13 Disposal considerations

- Waste treatment methods
  - **Recommendation:** Must be specially treated adhering to official regulations.
- Uncleaned packagings
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
  - **ADR, ADN, IMDG, IATA**: not regulated
- **UN proper shipping name**
  - **ADR, ADN, IMDG, IATA**: not regulated
- **Transport hazard class(es)**
  - **ADR, ADN, IMDG, IATA**: not regulated
- **Class**
  - **ADR, IMDG, IATA**: not regulated
- **Packing group**
  - **ADR, IMDG, IATA**: not regulated
- **Environmental hazards**: Not applicable.
- **Special precautions for user**: Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**: Not applicable.
- **UN "Model Regulation":** not regulated

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      - 7722-84-1 | hydrogen peroxide solution
    - **Section 313 (Specific toxic chemical listings):**
      - None of the ingredients is listed.
- **TSCA (Toxic Substances Control Act):**
  - All ingredients are listed.
Trade name: 1X Plus Automation Amplification Diluent

- **Proposition 65**
  - **Chemicals known to cause cancer:**
    None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for females:**
    None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for males:**
    None of the ingredients is listed.
  - **Chemicals known to cause developmental toxicity:**
    None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    | 1330-43-4 | boric acid, disodium salt | I (oral) |
    | 10043-35-3 | boric acid | I (oral) |
  - **TLV (Threshold Limit Value established by ACGIH)**
    | 1330-43-4 | boric acid, disodium salt | A4 |
    | 10043-35-3 | boric acid | A4 |
    | 7722-84-1 | hydrogen peroxide solution | A3 |
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

---

**16 Other information**

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

- **Date of preparation / last revision** 08/16/2018 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Repr. 1A: Reproductive toxicity – Category 1A
1 Identification

· Product identifier
  · Trade name: Opal 520 Reagent
  · Product number: FP1487A
· Application of the substance / the mixture Laboratory chemicals
· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: PerkinElmer Inc
    549 Albany st
    Boston, MA 02118
· Information department:
  US Technical Support
  800-762-4000
· Emergency telephone number:
  If inside USA, call CHEMTREC at 1-800-424-9300
  If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture
  Acute Tox. 3 H301 Toxic if swallowed.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.
· Additional information: For the wording of the listed H phrases refer to section 16.
· Label elements
  · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS06
    GHS07
· Signal word Danger
· Hazard-determining components of labeling:
  4-IODOPHENYLBORONIC ACID
· Hazard statements
  Toxic if swallowed.
  Causes skin irritation.
  Causes serious eye irritation.
  May cause respiratory irritation.
· Precautionary statements
  If swallowed: Immediately call a poison center/doctor.
  Specific treatment (see on this label).
  Rinse mouth.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Take off contaminated clothing and wash it before reuse.
  Dispose of contents/container in accordance with local/regional/national/international regulations.
(Contd. on page 2)
Trade name: Opal 520 Reagent

Classification system:
- NFPA ratings (scale 0 - 4)
  Health = 2
  Fire = 1
  Reactivity = 0

3 Composition/information on ingredients
- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.
- Dangerous components:
  5122-99-6 4-IODOPHENYLBORONIC ACID 75-100%

4 First-aid measures
- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
  Do not induce vomiting; immediately call for medical help.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed: No further relevant information available.
  Indication of any immediate medical attention and special treatment needed:
  No further relevant information available.

5 Fire-fighting measures
- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture:
  No further relevant information available.
- Advice for firefighters
- Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures
- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions:
  Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections:
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
Trade name: Opal 520 Reagent

- Protective Action Criteria for Chemicals
  - PAC-1:
    None of the ingredients is listed.
  - PAC-2:
    None of the ingredients is listed.
  - PAC-3:
    None of the ingredients is listed.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and containers: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      Keep away from food and beverages.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    - Respiratory protection:
      In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
      Suitable respiratory protective device recommended.
  - Protection of hands:
    - Protective gloves
      The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. of page 2)
### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:**
    - **Form:** Solid
    - **Color:** According to product specification
  - **Odor:** Characteristic
  - **Odor threshold:** Not determined.
  - **pH-value:** N/A

- **Change in condition**
  - **Melting point/Melting range:** Undetermined.
  - **Boiling point/Boiling range:** 189 °C (372.2 °F)

- **Flash point:** 95 °C (203 °F)

- **Flammability (solid, gaseous):** Not determined.

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.

- **Vapor pressure:** Not applicable.

- **Density:** Not determined.
  - **Relative density:** Not determined.
  - **Vapor density:** Not applicable.
  - **Evaporation rate:** Not applicable.

- **Solubility in / Miscibility with Water:** Insoluble.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.

(Contd. on page 5)
Safety Data Sheet  
acc. to OSHA HCS

Trade name: Opal 520 Reagent

| · Solvent content: | 0.00 % |
| · VOC content: | 0.00 % |
| · Solids content: | 100.0 % |
| · Other information | No further relevant information available. |

10 Stability and reactivity

· Reactivity: No further relevant information available.
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions: No dangerous reactions known.
· Conditions to avoid: No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity:
· Primary irritant effect:
· on the skin: Irritant to skin and mucous membranes.
· on the eye: Irritating effect.
· Sensitization: No sensitizing effects known.
· Additional toxicological information:
  The product shows the following dangers according to internally approved calculation methods for preparations:
  Toxic
  Irritant

· Carcinogenic categories
· IARC (International Agency for Research on Cancer)
  None of the ingredients is listed.
· NTP (National Toxicology Program)
  None of the ingredients is listed.
· OSHA-Ca (Occupational Safety & Health Administration)
  None of the ingredients is listed.

12 Ecological information

· Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability: No further relevant information available.
· Behavior in environmental systems:
· Bioaccumulative potential: No further relevant information available.
· Mobility in soil: No further relevant information available.
· Ecotoxic effects: N/A
· Other information: N/A
· Results of PBT and vPvB assessment
· PBT: Not applicable.

(Contd. on page 6)
Safety Data Sheet
acc. to OSHA HCS

Trade name: Opal 520 Reagent

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - ADR, IMDG, IATA: UN2811

- UN proper shipping name
  - ADR: 2811 Toxic solids, organic, n.o.s. (4-IODOPHENYLBORONIC ACID)
  - IMDG, IATA: TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)

- Transport hazard class(es)
  - ADR, IMDG, IATA

- Class: 6.1 Toxic substances
- Label: 6.1

- Packing group
  - ADR, IMDG, IATA: III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Warning: Toxic substances
  - Danger code (Kemler): 60
  - EMS Number: F-A,S-A
  - Stowage Category: A

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - Quantity limitations
    - On passenger aircraft/rail: 100 kg
    - On cargo aircraft only: 200 kg

- ADR
  - Excepted quantities (EQ)
    - Code: E1
      - Maximum net quantity per inner packaging: 30 g
      - Maximum net quantity per outer packaging: 1000 g
Trade name: Opal 520 Reagent

15 Regulatory information

- IMDG
- Limited quantities (LQ): 5 kg
- Code: E1
  Maximum net quantity per inner packaging: 30 g
  Maximum net quantity per outer packaging: 1000 g
- Exempted quantities (EQ): Code: E1
- UN "Model Regulation": UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (4-iodophenylboronic acid), 6.1, III

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that
Trade name: Opal 520 Reagent

these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

· Date of preparation / last revision 08/16/2018 / -

· Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Tox. 3: Acute toxicity – Category 3
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
1 Identification

· Product identifier
  · Trade name: Opal 570 Reagent
  · Product number: FP1488A
  · Application of the substance / the mixture Laboratory chemicals
· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: PerkinElmer Inc
    549 Albany st
    Boston, MA 02118
  · Information department: US Technical Support
    800-762-4000
  · Emergency telephone number:
    If inside USA, call CHEMTREC at 1-800-424-9300
    If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture
  Acute Tox. 3 H301 Toxic if swallowed.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.
· Additional information: For the wording of the listed H phrases refer to section 16.
· Label elements
  · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS06 GHS07
· Signal word Danger
· Hazard-determining components of labeling: 4-IODOPHENYLBORONIC ACID
· Hazard statements
  Toxic if swallowed.
  Causes skin irritation.
  Causes serious eye irritation.
  May cause respiratory irritation.
· Precautionary statements
  If swallowed: Immediately call a poison center/doctor.
  Specific treatment (see on this label).
  Rinse mouth.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Take off contaminated clothing and wash it before reuse.
  Dispose of contents/container in accordance with local/regional/national/international regulations.
Trade name: Opal 570 Reagent

- Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 2
  - Fire = 1
  - Reactivity = 0

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.
- Dangerous components:
  - 5122-99-6 4-IODOPHENYLBORONIC ACID 75-100%

4 First-aid measures

- Description of first aid measures
- General information:
  - Immediately remove any clothing soiled by the product.
  - In case of irregular breathing or respiratory arrest provide artificial respiration.
- After inhalation:
  - In case of unconsciousness place patient stably in side position for transportation.
- After eye contact:
  - Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
  - Do not induce vomiting; immediately call for medical help.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
7 Handling and storage

- Handling:
  - Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and containers: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Keep receptacle tightly sealed.

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      Keep away from food and beverages.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
  - Respiratory protection:
    In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
    Suitable respiratory protective device recommended.

- Protection of hands:
  - Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
Form: Solid
Color: According to product specification
Odor: Characteristic
Odor threshold: Not determined.

pH-value: N/A

Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 189 °C (372.2 °F)

Flash point: 95 °C (203 °F)

Flammability (solid, gaseous): Not determined.

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
Lower: Not determined.
Upper: Not determined.

Vapor pressure: Not applicable.

Density: Not determined.
Relative density: Not determined.
Vapor density: Not applicable.
Evaporation rate: Not applicable.

Solubility in / Miscibility with Water: Soluble.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:
Dynamic: Not applicable.
Kinematic: Not applicable.
Trade name: Opal 570 Reagent

- Solvent content: 0.00 %
- VOC content: 0.00 %
- Solids content: 100.0 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: Irritant to skin and mucous membranes.
      - on the eye: Irritating effect.
      - Sensitization: No sensitizing effects known.
  - Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations:
    Toxic
    Irritant
- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Ecotoxic effects: N/A
- Other information: N/A
- Results of PBT and vPvB assessment
- PBT: Not applicable.
Trade name: Opal 570 Reagent

- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - ADR, IMDG, IATA: UN2811

- UN proper shipping name
  - ADR: 2811 Toxic solids, organic, n.o.s. (4-IODOPHENYLBORONIC ACID)
  - IMDG, IATA: TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)

- Transport hazard class(es)
  - ADR, IMDG, IATA
    - Class: 6.1 Toxic substances
    - Label: 6.1

- Packing group
  - ADR, IMDG, IATA: III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Warning: Toxic substances

- Danger code (Kemler):
  - 60

- EMS Number:
  - F-A,S-A

- Stowage Category
  - A

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - Quantity limitations:
    - On passenger aircraft/rail: 100 kg
    - On cargo aircraft only: 200 kg

- ADR
  - Excepted quantities (EQ):
    - Code: E1
    - Maximum net quantity per inner packaging: 30 g
    - Maximum net quantity per outer packaging: 1000 g
Trade name: Opal 570 Reagent

- IMDG
  - Limited quantities (LQ) 5 kg
  - Excepted quantities (EQ) Code: E1
    - Maximum net quantity per inner packaging: 30 g
    - Maximum net quantity per outer packaging: 1000 g
- UN "Model Regulation": UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID), 6.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      None of the ingredients is listed.
    - Section 313 (Specific toxic chemical listings):
      None of the ingredients is listed.
    - TSCA (Toxic Substances Control Act):
      None of the ingredients is listed.
    - TSCA new (21st Century Act) (Substances not listed)
      5122-99-6 4-IODOPHENYLBORONIC ACID
    - Proposition 65
      None of the ingredients is listed.
  - Chemicals known to cause cancer:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for males:
    None of the ingredients is listed.
  - Chemicals known to cause developmental toxicity:
    None of the ingredients is listed.
- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    None of the ingredients is listed.
  - TLV (Threshold Limit Value established by ACGIH)
    None of the ingredients is listed.
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that
these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

· Date of preparation / last revision 08/16/2018 / -

· Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  Acute Tox. 3: Acute toxicity – Category 3
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
# 1 Identification

- **Product identifier**
  - **Trade name:** Opal 690 Reagent  
  - **Product number:** FP1497A

- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** PerkinElmer Inc  
    549 Albany st  
    Boston, MA 02118

- **Information department:**
  - US Technical Support  
  800-762-4000

- **Emergency telephone number:**
  - If inside USA, call CHEMTREC at 1-800-424-9300
  - If outside USA, call CHEMTREC at 1-703-527-3887

# 2 Hazard(s) identification

- **Classification of the substance or mixture**
  - **Acute Tox. 3** H301 Toxic if swallowed.  
  - **Skin Irrit. 2** H315 Causes skin irritation.  
  - **Eye Irrit. 2A** H319 Causes serious eye irritation.  
  - **STOT SE 3** H335 May cause respiratory irritation.

- **Additional information:** For the wording of the listed H phrases refer to section 16.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**

  ![GHS pictograms](image)

  - GHS06  
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - **4-IODOPHENYLBORONIC ACID**

- **Hazard statements**
  - Toxic if swallowed.  
  - Causes skin irritation.  
  - Causes serious eye irritation.  
  - May cause respiratory irritation.

- **Precautionary statements**
  - If swallowed: Immediately call a poison center/doctor.  
  - Specific treatment (see on this label).  
  - Rinse mouth.
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Take off contaminated clothing and wash it before reuse.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Safety Data Sheet
acc. to OSHA HCS

Trade name: Opal 690 Reagent

· Classification system:
· NFPA ratings (scale 0 - 4)
  Health = 2
  Fire = 0
  Reactivity = 0

3 Composition/information on ingredients
· Chemical characterization: Mixtures
· Description: Mixture of the substances listed below with nonhazardous additions.
· Dangerous components:
  5122-99-6 4-IODOPHENYLBORONIC ACID 75-100%

4 First-aid measures
· Description of first aid measures
· General information:
  Immediately remove any clothing soiled by the product.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
· After inhalation: In case of unconsciousness place patient stably in side position for transportation.
· After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· After swallowing:
  Do not induce vomiting; immediately call for medical help.
· Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
  Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

5 Fire-fighting measures
· Extinguishing media
· Suitable extinguishing agents: Use fire fighting measures that suit the environment.
· Special hazards arising from the substance or mixture No further relevant information available.
· Advice for firefighters
· Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures
· Personal precautions, protective equipment and emergency procedures Not required.
· Environmental precautions: Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
7 Handling and storage

· Handling:
  · Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  · Information about protection against explosions and fires: No special measures required.

· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and containers: No special requirements.
    · Information about storage in one common storage facility: Not required.
    · Further information about storage conditions: Keep receptacle tightly sealed.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters
  · Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      Keep away from food and beverages.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    · Respiratory protection:
      In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
      Suitable respiratory protective device recommended.
  · Protection of hands:

  Protective gloves
  
  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

| Tightly sealed goggles |

9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td><strong>Form:</strong> Solid</td>
</tr>
<tr>
<td><strong>Color:</strong> According to product specification</td>
</tr>
<tr>
<td><strong>Odor:</strong> Characteristic</td>
</tr>
<tr>
<td><strong>Odor threshold:</strong> Not determined.</td>
</tr>
</tbody>
</table>

| **pH-value:** N/A |

<table>
<thead>
<tr>
<th>Change in condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point/Melting range:</strong> Undetermined.</td>
</tr>
<tr>
<td><strong>Boiling point/Boiling range:</strong> Undetermined.</td>
</tr>
</tbody>
</table>

| **Flash point:** Not applicable. |

| **Flammability (solid, gaseous):** Not determined. |

| **Decomposition temperature:** Not determined. |

| **Auto igniting:** Product is not selfigniting. |

| **Danger of explosion:** Product does not present an explosion hazard. |

<table>
<thead>
<tr>
<th><strong>Explosion limits:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>Upper:</strong> Not determined.</td>
</tr>
</tbody>
</table>

| **Vapor pressure:** Not applicable. |

| **Density:** Not determined. |
| **Relative density:** Not determined. |
| **Vapor density:** Not applicable. |
| **Evaporation rate:** Not applicable. |

| **Solubility in / Miscibility with Water:** Soluble. |

| **Partition coefficient (n-octanol/water):** Not determined. |

<table>
<thead>
<tr>
<th><strong>Viscosity:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dynamic:</strong> Not applicable.</td>
</tr>
<tr>
<td><strong>Kinematic:</strong> Not applicable.</td>
</tr>
</tbody>
</table>
Trade name: Opal 690 Reagent

- **Solvent content**: 0.00 %
- **VOC content**: 0.00 %
- **Solids content**: 100.0 %
- **Other information**: No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: No decomposition if used according to specifications.
- **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**:
    - **Primary irritant effect**:
      - **on the skin**: Irritant to skin and mucous membranes.
      - **on the eye**: Irritating effect.
    - **Sensitization**: No sensitizing effects known.
    - **Additional toxicological information**:
      - The product shows the following dangers according to internally approved calculation methods for preparations:
        - Toxic
        - Irritant
  - **Carcinogenic categories**
    - **IARC (International Agency for Research on Cancer)**: None of the ingredients is listed.
    - **NTP (National Toxicology Program)**: None of the ingredients is listed.
    - **OSHA-Ca (Occupational Safety & Health Administration)**: None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
  - **Persistence and degradability**: No further relevant information available.
  - **Behavior in environmental systems**:
    - **Bioaccumulative potential**: No further relevant information available.
    - **Mobility in soil**: No further relevant information available.
  - **Ecotoxic effects**: N/A
  - **Mobility in soil**: N/A
  - **Results of PBT and vPvB assessment**
  - **PBT**: Not applicable.

(Contd. on page 6)
Trade name: Opal 690 Reagent

- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - ADR, IMDG, IATA: UN2811
- UN proper shipping name
  - ADR: 2811 Toxic solids, organic, n.o.s. (4-IODOPHENYLBORONIC ACID)
  - IMDG, IATA: TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)
- Transport hazard class(es)
  - ADR, IMDG, IATA
    - Class: 6.1 Toxic substances
    - Label: 6.1
- Packing group
  - ADR, IMDG, IATA: III
- Environmental hazards:
  - Not applicable.
- Special precautions for user
  - Warning: Toxic substances
  - Danger code (Kemler): 60
  - EMS Number: F-A.S-A
  - Stowage Category: A
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
  - Not applicable.
- Transport/Additional information:
  - Quantity limitations
    - On passenger aircraft/rail: 100 kg
    - On cargo aircraft only: 200 kg
- ADR
  - Excepted quantities (EQ)
    - Code: E1
      - Maximum net quantity per inner packaging: 30 g
      - Maximum net quantity per outer packaging: 1000 g
Trade name: Opal 690 Reagent

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      None of the ingredients is listed.
    - Section 313 (Specific toxic chemical listings):
      None of the ingredients is listed.
    - TSCA (Toxic Substances Control Act):
      None of the ingredients is listed.
    - TSCA new (21st Century Act) (Substances not listed)
      5122-99-6 4-IODOPHENYLBORONIC ACID
    - Proposition 65
      - Chemicals known to cause cancer:
        None of the ingredients is listed.
      - Chemicals known to cause reproductive toxicity for females:
        None of the ingredients is listed.
      - Chemicals known to cause reproductive toxicity for males:
        None of the ingredients is listed.
      - Chemicals known to cause developmental toxicity:
        None of the ingredients is listed.
  - Carcinogenic categories
    - EPA (Environmental Protection Agency)
      None of the ingredients is listed.
    - TLV (Threshold Limit Value established by ACGIH)
      None of the ingredients is listed.
    - NIOSH-Ca (National Institute for Occupational Safety and Health)
      None of the ingredients is listed.
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that
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· **Date of preparation / last revision** 08/16/2018 / -

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  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Tox. 3: Acute toxicity – Category 3
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
1 Identification

- **Product identifier**
- **Trade name:** Opal 540 Reagent
- **Product number:** FP1494A
- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** PerkinElmer Inc
  549 Albany st
  Boston, MA 02118
- **Information department:**
  US Technical Support
  800-762-4000
- **Emergency telephone number:**
  If inside USA, call CHEMTREC at 1-800-424-9300
  If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  Acute Tox. 3  H301 Toxic if swallowed.
  Skin Irrit. 2  H315 Causes skin irritation.
  Eye Irrit. 2A  H319 Causes serious eye irritation.
  STOT SE 3  H335 May cause respiratory irritation.
- **Additional information:** For the wording of the listed H phrases refer to section 16.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**

  ![](GHS06.png) ![](GHS07.png)

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  4-IODOPHENYLBORONIC ACID

- **Hazard statements**
  Toxic if swallowed.
  Causes skin irritation.
  Causes serious eye irritation.
  May cause respiratory irritation.

- **Precautionary statements**
  If swallowed: Immediately call a poison center/doctor.
  Specific treatment (see on this label).
  Rinse mouth.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Take off contaminated clothing and wash it before reuse.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Trade name: Opal 540 Reagent

· Classification system:
· NFPA ratings (scale 0 - 4)
  Health = 2
  Fire = 1
  Reactivity = 0

3 Composition/information on ingredients

· Chemical characterization: Mixtures
· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:
  5122-99-6 4-IODOPHENYLBORONIC ACID 75-100%

4 First-aid measures

· Description of first aid measures
· General information:
  Immediately remove any clothing soiled by the product.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
· After inhalation: In case of unconsciousness place patient stably in side position for transportation.
· After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· After swallowing:
  Do not induce vomiting; immediately call for medical help.
· Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
  Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

5 Fire-fighting measures

· Extinguishing media
· Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· Special hazards arising from the substance or mixture No further relevant information available.
· Advice for firefighters
· Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Not required.
· Environmental precautions: Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
Trade name: Opal 540 Reagent

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and containers: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Keep receptacle tightly sealed.

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      Keep away from food and beverages.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    - Respiratory protection:
      In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
      Suitable respiratory protective device recommended.
  - Protection of hands:
    - Protective gloves
      The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Trade name: Opal 540 Reagent

· Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:
   - Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
· General Information
· Appearance:
  - Form: Solid
  - Color: According to product specification
· Odor:
  - Odor: Characteristic
  - Odor threshold: Not determined.
· pH-value: N/A
· Change in condition
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 189 °C (372.2 °F)
· Flash point: 95 °C (203 °F)
· Flammability (solid, gaseous): Not determined.
· Decomposition temperature: Not determined.
· Auto igniting: Product is not selfigniting.
· Danger of explosion: Product does not present an explosion hazard.
· Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.
· Vapor pressure: Not applicable.
· Density: Not determined.
  - Relative density: Not determined.
  - Vapor density: Not applicable.
  - Evaporation rate: Not applicable.
· Solubility in / Miscibility with
  - Water: Insoluble.
· Partition coefficient (n-octanol/water): Not determined.
· Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
Trade name: Opal 540 Reagent

- Solvent content:
  - VOC content: 0.00 %

- Solids content: 100.0 %

- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability:
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions: No dangerous reactions known.
  - Conditions to avoid: No further relevant information available.
  - Incompatible materials: No further relevant information available.
  - Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: Irritant to skin and mucous membranes.
      - on the eye: Irritating effect.
    - Sensitization: No sensitizing effects known.
  - Additional toxicological information:
    - The product shows the following dangers according to internally approved calculation methods for preparations:
      - Toxic
      - Irritant
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer): None of the ingredients is listed.
    - NTP (National Toxicology Program): None of the ingredients is listed.
    - OSHA-Ca (Occupational Safety & Health Administration): None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential: No further relevant information available.
    - Mobility in soil: No further relevant information available.
    - Ecotoxicity effects: N/A
    - Other information: N/A
  - Results of PBT and vPvB assessment
  - PBT: Not applicable.
Trade name: Opal 540 Reagent

· vPvB: Not applicable.
· Other adverse effects No further relevant information available.

13 Disposal considerations

· Waste treatment methods
  · Recommendation: Must be specially treated adhering to official regulations.
· Uncleaned packagings:
  · Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number
  · ADR, IMDG, IATA UN2811
· UN proper shipping name
  · ADR 2811 Toxic solids, organic, n.o.s. (4-IODOPHENYLBORONIC ACID)
  · IMDG, IATA TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)
· Transport hazard class(es)
  · ADR, IMDG, IATA
    · Class 6.1 Toxic substances
    · Label 6.1
· Packing group
  · ADR, IMDG, IATA III
· Environmental hazards:
  · Not applicable.
· Special precautions for user
  · Danger code (Kemler): Warning: Toxic substances
  · EMS Number: F-A,S-A
  · Stowage Category A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  · Not applicable.
· Transport/Additional information:
  · Quantity limitations
    · On passenger aircraft/rail: 100 kg
    · On cargo aircraft only: 200 kg
· ADR
  · Excepted quantities (EQ)
    · Code: E1
    · Maximum net quantity per inner packaging: 30 g
    · Maximum net quantity per outer packaging: 1000 g
Trade name: Opal 540 Reagent

- IMDG
- Limited quantities (LQ) 5 kg
- Excepted quantities (EQ) Code: E1
  Maximum net quantity per inner packaging: 30 g
  Maximum net quantity per outer packaging: 1000 g
- UN "Model Regulation": UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID), 6.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
  - Section 355 (extremely hazardous substances):
    None of the ingredients is listed.
  - Section 313 (Specific toxic chemical listings):
    None of the ingredients is listed.
  - TSCA (Toxic Substances Control Act):
    None of the ingredients is listed.
  - TSCA new (21st Century Act) (Substances not listed)
    5122-99-6 4-IODOPHENYLBORONIC ACID
  - Proposition 65
    - Chemicals known to cause cancer:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for females:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for males:
      None of the ingredients is listed.
    - Chemicals known to cause developmental toxicity:
      None of the ingredients is listed.
  - Carcinogenic categories
    - EPA (Environmental Protection Agency)
      None of the ingredients is listed.
    - TLV (Threshold Limit Value established by ACGIH)
      None of the ingredients is listed.
    - NIOSH-Ca (National Institute for Occupational Safety and Health)
      None of the ingredients is listed.
    - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that
These are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

Date of preparation / last revision: 08/16/2018 / -

Abbreviations and acronyms:
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- VOC: Volatile Organic Compounds (USA, EU)
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety & Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit
- Acute Tox. 3: Acute toxicity – Category 3
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
1 Identification

· Product identifier
  · Trade name: Spectral DAPI
  · Product number: FP1490A
  · Application of the substance / the mixture Laboratory chemicals

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    PerkinElmer Inc
    549 Albany st
    Boston, MA 02118

· Information department:
  US Technical Support
  800-762-4000

· Emergency telephone number:
  If inside USA, call CHEMTREC at 1-800-424-9300
  If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture
  The product has been classified and is not hazardous according to the Globally Harmonized System (GHS).

· Label elements
  · GHS label elements Void
  · Hazard pictograms Void
  · Signal word Void
  · Hazard statements Void
  · Classification system:

· NFPA ratings (scale 0 - 4)

  Health = 0
  Fire = 0
  Reactivity = 0

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components: Void

4 First-aid measures

· Description of first aid measures
  · General information: No special measures required.
  · After inhalation: Supply fresh air; consult doctor in case of complaints.
  · After skin contact: If skin irritation continues, consult a doctor.
  · After eye contact: Rinse opened eye for several minutes under running water.
  · After swallowing: If symptoms persist consult doctor.

· Information for doctor:
  · Most important symptoms and effects, both acute and delayed No further relevant information available.
47.0.18

· Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

5 Fire-fighting measures

· Extinguishing media
  · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
  · Special hazards arising from the substance or mixture No further relevant information available.

· Advice for firefighters
  · Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Not required.
  · Environmental precautions: Do not allow to enter sewers/surface or ground water.
  · Methods and material for containment and cleaning up: Pick up mechanically.

· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

· Protective Action Criteria for Chemicals
  · PAC-1: None of the ingredients is listed.
  · PAC-2: None of the ingredients is listed.
  · PAC-3: None of the ingredients is listed.

7 Handling and storage

· Handling:
  · Precautions for safe handling No special measures required.
  · Information about protection against explosions and fires: No special measures required.

· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and containers: No special requirements.
    · Information about storage in one common storage facility: Not required.
    · Further information about storage conditions: None.
    · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters
  · Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      The usual precautionary measures for handling chemicals should be followed.
    · Respiratory protection: Not required.
  · Protection of hands:
    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    · Material of gloves
      The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and
      varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance
      of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
  · Penetration time of glove material
    The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be
    observed.
  · Eye protection: Not required.

9 Physical and chemical properties

· Information on basic physical and chemical properties
  · General Information
    · Appearance:
      Form: Fluid
      Color: According to product specification
    · Odor:
      Characteristic
    · Odor threshold: Not determined.
  · pH-value: N/A

· Change in condition
  Melting point/Melting range: Undetermined.
  Boiling point/Boiling range: 100 °C (212 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not determined.

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:
  Lower: Not determined.
  Upper: Not determined.

· Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

· Density: Not determined.

· Relative density

· Vapor density Not applicable.

· Evaporation rate Not applicable.

· Solubility in / Miscibility with
  Water: Insoluble.
Trade name: Spectral DAPI

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.
- **Solvent content:**
  - **Water:** 98.6 %
  - **VOC content:** 0.00 %
- **Solids content:** 100.0 %
- **Other information:** No further relevant information available.

**10 Stability and reactivity**

- **Reactivity:** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions:** No dangerous reactions known.
  - **Conditions to avoid:** No further relevant information available.
  - **Incompatible materials:** No further relevant information available.
  - **Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity:**
    - **on the skin:** No irritant effect.
    - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
  - **Additional toxicological information:**
    The product is not subject to classification according to internally approved calculation methods for preparations:
    When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**: None of the ingredients is listed.
  - **NTP (National Toxicology Program)**: None of the ingredients is listed.
  - **OSHA-Ca (Occupational Safety & Health Administration)**: None of the ingredients is listed.

**12 Ecological information**

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability:** No further relevant information available.
Trade name: Spectral DAPI

- Behavior in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Ecotoxicological effects: N/A
- Other information: N/A
- Results of PBT and vPvB assessment:
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.
- Uncleaned packagings
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - ADR, ADN, IMDG, IATA: not regulated
- UN proper shipping name
  - ADR, ADN, IMDG, IATA: not regulated
- Transport hazard class(es)
  - ADR, ADN, IMDG, IATA
    - Class: not regulated
- Packing group
  - ADR, IMDG, IATA: not regulated
- Environmental hazards:
  - Not applicable.
- Special precautions for user
  - Not applicable.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
  - Not applicable.
- UN "Model Regulation": not regulated

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      - None of the ingredients is listed.
    - Section 313 (Specific toxic chemical listings):
      - None of the ingredients is listed.
    - TSCA (Toxic Substances Control Act):
      - 7732-18-5 Water

(Contd. on page 6)
Trade name: Spectral DAPI

- **Proposition 65**
  - **Chemicals known to cause cancer:**
    - None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for females:**
    - None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for males:**
    - None of the ingredients is listed.
  - **Chemicals known to cause developmental toxicity:**
    - None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    - None of the ingredients is listed.
  - **TLV (Threshold Limit Value established by ACGIH)**
    - None of the ingredients is listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    - None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 **Other information**

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

- **Date of preparation / last revision** 08/16/2018 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
1 Identification

· **Product identifier**
  · **Trade name:** Opal 650 Reagent
  · **Product number:** FP1496A

· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
  · **Manufacturer/Supplier:** PerkinElmer Inc
    549 Albany st
    Boston, MA 02118

· **Information department:**
  US Technical Support
  800-762-4000

· **Emergency telephone number:**
  If inside USA, call CHEMTREC at 1-800-424-9300
  If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

· **Classification of the substance or mixture**
  Acute Tox. 3 H301 Toxic if swallowed.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.

· **Additional information:** For the wording of the listed H phrases refer to section 16.

· **Label elements**
  · **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  · **Hazard pictograms**

![GHS06](image)

![GHS07](image)

· **Signal word** Danger

· **Hazard-determining components of labeling:**
  4-IODOPHENYLBORONIC ACID

· **Hazard statements**
  Toxic if swallowed.
  Causes skin irritation.
  Causes serious eye irritation.
  May cause respiratory irritation.

· **Precautionary statements**
  If swallowed: Immediately call a poison center/doctor.
  Specific treatment (see on this label).
  Rinse mouth.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Take off contaminated clothing and wash it before reuse.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Trade name: Opal 650 Reagent

Classification system:
· Classifications: Mixtures

NFPA ratings (scale 0 - 4):
· Health = 2
· Fire = 1
· Reactivity = 0

3 Composition/Information on ingredients
· Chemical characterization: Mixtures
· Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5122-99-6 4-IODOPHENYLBORONIC ACID</td>
<td>75-100%</td>
</tr>
</tbody>
</table>

4 First-aid measures
· Description of first aid measures
· General information:
  · Immediately remove any clothing soiled by the product.
  · In case of irregular breathing or respiratory arrest provide artificial respiration.
· After inhalation: In case of unconsciousness place patient stably in side position for transportation.
· After eye contact:
  · Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· After swallowing:
  · Do not induce vomiting; immediately call for medical help.
· Information for doctor:
  · Most important symptoms and effects, both acute and delayed: No further relevant information available.
  · Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures
· Extinguishing media
· Suitable extinguishing agents:
  · CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· Special hazards arising from the substance or mixture: No further relevant information available.
· Advice for firefighters
· Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures
· Personal precautions, protective equipment and emergency procedures: Not required.
· Environmental precautions: Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up:
  · Dispose contaminated material as waste according to item 13.
  · Ensure adequate ventilation.
· Reference to other sections
  · See Section 7 for information on safe handling.
  · See Section 8 for information on personal protection equipment.
  · See Section 13 for disposal information.
Trade name: Opal 650 Reagent

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and containers: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Exposure controls
  - Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from food and beverages.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
    Avoid contact with the eyes and skin.
  - Respiratory protection:
    In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
    Suitable respiratory protective device recommended.
- Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Trade name: Opal 650 Reagent

· Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· Eye protection:
  Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
  · General Information
    · Appearance:
      Form: Solid
      Color: According to product specification
    · Odor:
      Odor: Characteristic
      Odor threshold: Not determined.
  · pH-value:
    N/A
  · Change in condition
    Melting point/Melting range: Undetermined.
    Boiling point/Boiling range: 189 °C (372.2 °F)
  · Flash point:
    95 °C (203 °F)
  · Flammability (solid, gaseous):
    Not determined.
  · Decomposition temperature:
    Not determined.
  · Auto igniting:
    Product is not selfigniting.
  · Danger of explosion:
    Product does not present an explosion hazard.
  · Explosion limits:
    Lower: Not determined.
    Upper: Not determined.
  · Vapor pressure:
    Not applicable.
  · Density:
    Not determined.
  · Relative density:
    Not determined.
  · Vapor density:
    Not applicable.
  · Evaporation rate:
    Not applicable.
· Solubility in / Miscibility with
  Water: Insoluble.
· Partition coefficient (n-octanol/water): Not determined.
· Viscosity:
  Dynamic: Not applicable.
  Kinematic: Not applicable.
Trade name: Opal 650 Reagent

- Solvent content: 0.00 %
- VOC content: 0.00 %
- Solids content: 100.0 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
  The product shows the following dangers according to internally approved calculation methods for preparations:
  Toxic
  Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
  None of the ingredients is listed.
  - NTP (National Toxicology Program)
  None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
  None of the ingredients is listed.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Ecotoxic effects: N/A
- Other information: N/A
- Results of PBT and vPvB assessment
- PBT: Not applicable.
Trade name: Opal 650 Reagent

- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - ADR, IMDG, IATA: UN2811

- UN proper shipping name
  - ADR: 2811 Toxic solids, organic, n.o.s. (4-IODOPHENYLBORONIC ACID)
  - IMDG, IATA: TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)

- Transport hazard class(es)
  - ADR, IMDG, IATA: 6.1 Toxic substances

- Packing group
  - ADR, IMDG, IATA: III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Danger code (Kemler): 60
  - EMS Number: F-A,S-A
  - Stowage Category: A

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

- Transport/Additional information:
  - Quantity limitations:
    - On passenger aircraft/rail: 100 kg
    - On cargo aircraft only: 200 kg

- ADR
  - Excepted quantities (EQ):
    - Code: E1
    - Maximum net quantity per inner packaging: 30 g
    - Maximum net quantity per outer packaging: 1000 g
Trade name: Opal 650 Reagent

- IMDG
- Limited quantities (LQ) 5 kg
- Code: E1
- Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 g
- Maximum net quantity per outer packaging: 1000 g
- UN "Model Regulation": UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID), 6.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
  - Section 355 (extremely hazardous substances):
    None of the ingredients is listed.
  - Section 313 (Specific toxic chemical listings):
    None of the ingredients is listed.
- TSCA (Toxic Substances Control Act):
  None of the ingredients is listed.
- TSCA new (21st Century Act) (Substances not listed)
  None of the ingredients is listed.
- Proposition 65
  None of the ingredients is listed.
- Chemicals known to cause cancer:
  None of the ingredients is listed.
- Chemicals known to cause reproductive toxicity for females:
  None of the ingredients is listed.
- Chemicals known to cause reproductive toxicity for males:
  None of the ingredients is listed.
- Chemicals known to cause developmental toxicity:
  None of the ingredients is listed.

- Carcinogenic categories
  None of the ingredients is listed.
- EPA (Environmental Protection Agency)
  None of the ingredients is listed.
- TLV (Threshold Limit Value established by ACGIH)
  None of the ingredients is listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that...
these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

· **Date of preparation / last revision**: 08/16/2018 / -

· **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Tox. 3: Acute toxicity – Category 3
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
1 Identification

- **Product identifier**
  - **Trade name:** Antibody Diluent, 1X, 100mL
  - **Product number:** ARD1001EA
  - **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** PerkinElmer Inc
    549 Albany st
    Boston, MA 02118

- **Information department:**
  - **US Technical Support**
    800-762-4000

- **Emergency telephone number:**
  - If inside USA, call CHEMTREC at 1-800-424-9300
  - If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Additional information:** For the wording of the listed H phrases refer to section 16.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  - Proclin-300

- **Hazard statements**
  - May cause an allergic skin reaction.

- **Precautionary statements**
  - **Avoid breathing dust/fume/gas/mist/vapors/spray**
  - **Wear protective gloves.**
  - **If skin irritation or rash occurs: Get medical advice/attention.**
  - **Specific treatment (see on this label).**
  - **Wash contaminated clothing before reuse.**
  - **Dispose of contents/container in accordance with local/regional/national/international regulations.**

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - **Health** = 0
    - **Fire** = 0
    - **Reactivity** = 0

(Contd. on page 2)
Trade name: Antibody Diluent, 1X, 100mL

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1185-53-1</td>
<td>2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride</td>
</tr>
<tr>
<td>55965-84-9</td>
<td>Proclin-300</td>
</tr>
</tbody>
</table>

4 First-aid measures

- **Description of first aid measures**
  - **After inhalation:**
    - Supply fresh air and to be sure call for a doctor.
    - In case of unconsciousness place patient stably in side position for transportation.
  - **After eye contact:** Rinse opened eye for several minutes under running water.
  - **After swallowing:** If symptoms persist consult doctor.
  - **Information for doctor:**
    - Most important symptoms and effects, both acute and delayed: No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
  - **PAC-1:**
    - 1185-53-1 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride | 12 mg/m³ |
  - **PAC-2:**
    - 1185-53-1 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride | 130 mg/m³ |
Trade name: Antibody Diluent, 1X, 100mL

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about protection against explosions and fires: No special measures required.
  - Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and containers: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: None.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
    - Respiratory protection:
      In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
      Suitable respiratory protective device recommended.
  - Protection of hands:
    ![Protective gloves]

    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Penetration time of glove material
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Goggles recommended during refilling.

### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>· Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>· General Information</td>
</tr>
<tr>
<td>· Appearance</td>
</tr>
<tr>
<td>· Form: Fluid</td>
</tr>
<tr>
<td>· Color: According to product specification</td>
</tr>
<tr>
<td>· Odor: Characteristic</td>
</tr>
<tr>
<td>· Odor threshold: Not determined.</td>
</tr>
<tr>
<td>· pH-value: N/A</td>
</tr>
<tr>
<td>· Change in condition</td>
</tr>
<tr>
<td>· Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>· Boiling point/Boiling range: 100 °C (212 °F)</td>
</tr>
<tr>
<td>· Flash point: Not applicable.</td>
</tr>
<tr>
<td>· Flammability (solid, gaseous): Not applicable.</td>
</tr>
<tr>
<td>· Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>· Auto igniting: Product is not selfigniting.</td>
</tr>
<tr>
<td>· Danger of explosion: Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>· Explosion limits:</td>
</tr>
<tr>
<td>· Lower: Not determined.</td>
</tr>
<tr>
<td>· Upper: Not determined.</td>
</tr>
<tr>
<td>· Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)</td>
</tr>
<tr>
<td>· Density: Not determined.</td>
</tr>
<tr>
<td>· Relative density: Not determined.</td>
</tr>
<tr>
<td>· Vapor density: Not determined.</td>
</tr>
<tr>
<td>· Evaporation rate: Not determined.</td>
</tr>
<tr>
<td>· Solubility in / Miscibility with Water: Not miscible or difficult to mix.</td>
</tr>
<tr>
<td>· Partition coefficient (n-octanol/water): Not determined.</td>
</tr>
<tr>
<td>· Viscosity:</td>
</tr>
<tr>
<td>· Dynamic: Not determined.</td>
</tr>
<tr>
<td>· Kinematic: Not determined.</td>
</tr>
<tr>
<td>· Solvent content:</td>
</tr>
<tr>
<td>· Water: 97.8 %</td>
</tr>
<tr>
<td>· VOC content: 0.00 %</td>
</tr>
<tr>
<td>· Solids content: 1.7 %</td>
</tr>
<tr>
<td>· Other information: No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

· **Reactivity** No further relevant information available.
Trade name: Antibody Diluent, 1X, 100mL

- Chemical stability
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions No dangerous reactions known.
  - Conditions to avoid No further relevant information available.
  - Incompatible materials: No further relevant information available.
  - Hazardous decomposition products: No dangerous decomposition products known.

### 11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: No irritant effect.
      - on the eye: No irritating effect.
    - Sensitization: Sensitization possible through skin contact.
    - Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

### 12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential No further relevant information available.
    - Mobility in soil No further relevant information available.
  - Ecotoxicological effects: N/A
  - Other information: N/A
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects No further relevant information available.

### 13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.
Trade name: Antibody Diluent, 1X, 100mL

- Uncleaned packagings:
  Recommendation: Disposal must be made according to official regulations.

### 14 Transport information

<table>
<thead>
<tr>
<th>· UN-Number</th>
<th>not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>· ADR, ADN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>· UN proper shipping name</td>
<td>not regulated</td>
</tr>
<tr>
<td>· ADR, ADN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>· Transport hazard class(es)</td>
<td>not regulated</td>
</tr>
<tr>
<td>· ADR, ADN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td></td>
</tr>
<tr>
<td>· Packing group</td>
<td>not regulated</td>
</tr>
<tr>
<td>· ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>· Environmental hazards:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· Special precautions for user</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· UN &quot;Model Regulation&quot;:</td>
<td>not regulated</td>
</tr>
</tbody>
</table>

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

- Section 355 (extremely hazardous substances):
  None of the ingredients is listed.

- Section 313 (Specific toxic chemical listings):
  None of the ingredients is listed.

- TSCA (Toxic Substances Control Act):
  1185-53-1 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride
  7647-14-5 sodium chloride
  9000-71-9 casein
  7732-18-5 Water

- TSCA new (21st Century Act) (Substances not listed)
  55965-84-9 Proclin-300

- Proposition 65
  - Chemicals known to cause cancer:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for males:
    None of the ingredients is listed.
Trade name: Antibody Diluent, 1X, 100mL

- Chemicals known to cause developmental toxicity:
  None of the ingredients is listed.

- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    None of the ingredients is listed.
  - TLV (Threshold Limit Value established by ACGIH)
    None of the ingredients is listed.
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

- Date of preparation / last revision 08/16/2018 /
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  Skin Sens. 1: Skin sensitisation – Category 1
1 Identification

· Product identifier
  · Trade name: PolyHRP Broad Spectrum
  · Product number: ARH1001EA, ARH1A01EA
  · Application of the substance / the mixture Laboratory chemicals

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: PerkinElmer Inc
    549 Albany st
    Boston, MA 02118
  · Information department: US Technical Support
    800-762-4000
  · Emergency telephone number:
    If inside USA, call CHEMTREC at 1-800-424-9300
    If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture
  · Skin Sens. 1 H317 May cause an allergic skin reaction.
  · Additional information: For the wording of the listed H phrases refer to section 16.

· Label elements
  · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms

- GHS07

· Signal word Warning

· Hazard-determining components of labeling:
  · Proclin-300

· Hazard statements
  · May cause an allergic skin reaction.

· Precautionary statements
  · Avoid breathing dust/fume/gas/mist/vapors/spray
  · Wear protective gloves.
  · If skin irritation or rash occurs: Get medical advice/attention.
  · Specific treatment (see on this label).
  · Wash contaminated clothing before reuse.
  · Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:
  · NFPA ratings (scale 0 - 4)

- Health = 0
- Fire = 0
- Reactivity = 0

(Contd. on page 2)
3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.
- Dangerous components:

<table>
<thead>
<tr>
<th>Chemical reference number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>55965-84-9</td>
<td>Proclin-300</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
  - After inhalation: Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: If symptoms persist consult doctor.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

- Protective Action Criteria for Chemicals

<table>
<thead>
<tr>
<th>Chemical reference number</th>
<th>Description</th>
<th>PAC (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1185-53-1</td>
<td>2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride</td>
<td>12</td>
</tr>
<tr>
<td>PAC-2:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1185-53-1</td>
<td>2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride</td>
<td>130</td>
</tr>
</tbody>
</table>
7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities

- Storage:
  - Requirements to be met by storerooms and containers: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: None.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
    - Respiratory protection:
      In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
      Suitable respiratory protective device recommended.

- Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Fluid
      - Color: According to product specification
    - Odor:
      - Characteristic
    - Odor threshold:
      - Not determined.
    - pH-value:
      - N/A
  - Change in condition
    - Melting point/Melting range: Undetermined.
    - Boiling point/Boiling range: 100 °C (212 °F)
  - Flash point:
    - Not applicable.
  - Flammability (solid, gaseous):
    - Not applicable.
  - Decomposition temperature:
    - Not determined.
  - Auto igniting:
    - Product is not selfigniting.
  - Danger of explosion:
    - Product does not present an explosion hazard.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Vapor pressure at 20 °C (68 °F):
    - 23 hPa (17.3 mm Hg)
  - Density:
    - Not determined.
  - Relative density:
    - Not determined.
  - Vapor density:
    - Not determined.
  - Evaporation rate:
    - Not determined.
  - Solubility in / Miscibility with
    - Water:
      - Not miscible or difficult to mix.
  - Partition coefficient (n-octanol/water):
    - Not determined.
  - Viscosity:
    - Dynamic:
      - Not determined.
    - Kinematic:
      - Not determined.
  - Solvent content:
    - Water:
      - 78.2 %
    - VOC content:
      - 0.00 %
  - Solids content:
    - 1.7 %
  - Other information
    - No further relevant information available.

10 Stability and reactivity

- Reactivity:
  - No further relevant information available.
11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: No irritant effect.
      - on the eye: No irritating effect.
    - Sensitization: Sensitization possible through skin contact.
  - Additional toxicological information:
    The product shows the following dangers according to internally approved calculation methods for preparations:
    Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential: No further relevant information available.
    - Mobility in soil: No further relevant information available.
  - Ecotoxicological effects: N/A
  - Other information: N/A
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
    - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must be specially treated adhering to official regulations.
14 Transport information

- **UN-Number**
  - ADR, ADN, IMDG, IATA: not regulated
- **UN proper shipping name**
  - ADR, ADN, IMDG, IATA: not regulated
- **Transport hazard class(es)**
  - ADR, ADN, IMDG, IATA: Class not regulated
- **Packing group**
  - ADR, IMDG, IATA: not regulated
- **Environmental hazards**: Not applicable.
- **Special precautions for user**: Not applicable.
- **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**: Not applicable.
- **UN "Model Regulation"**: not regulated

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      None of the ingredients is listed.
    - **Section 313 (Specific toxic chemical listings):**
      None of the ingredients is listed.
  - **TSCA (Toxic Substances Control Act):**
    - 1185-53-1 2-amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride
    - 7647-14-5 sodium chloride
    - 9000-71-9 casein
    - 7732-18-5 Water
  - **TSCA new (21st Century Act) (Substances not listed)**
    - 55965-84-9 Proclin-300
  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for females:**
      None of the ingredients is listed.
    - **Chemicals known to cause reproductive toxicity for males:**
      None of the ingredients is listed.

(Contd. on page 7)
Trade name: PolyHRP Broad Spectrum

- **Chemicals known to cause developmental toxicity:**
  None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    None of the ingredients is listed.
  - **TLV (Threshold Limit Value established by ACGIH)**
    None of the ingredients is listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

- **Date of preparation / last revision** 08/16/2018 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Skin Sens. 1: Skin sensitisation – Category 1
1 Identification

- **Product identifier**
  - **Trade name:** DMSO
  - **Product number:** DMSO0500UL
  - **CAS Number:** 67-68-5
  - **EC number:** 200-664-3
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** PerkinElmer Inc
    549 Albany st
    Boston, MA 02118
  - **Information department:** US Technical Support
    800-762-4000
  - **Emergency telephone number:**
    If inside USA, call CHEMTREC at 1-800-424-9300
    If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2A H319 Causes serious eye irritation.
- **Additional information:** For the wording of the listed H phrases refer to section 16.

- **Label elements**
  - **GHS label elements**
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**

  ![GHS07](image)

- **Signal word** Warning
- **Hazard statements**
  - Causes skin irritation.
  - Causes serious eye irritation.
- **Precautionary statements**
  - Wash thoroughly after handling.
  - Wear protective gloves / eye protection / face protection.
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - If skin irritation occurs: Get medical advice/attention.
  - Take off contaminated clothing and wash it before reuse.
  - If eye irritation persists: Get medical advice/attention.

(Contd. on page 2)
Trade name: DMSO

- Classification system:
- NFPA ratings (scale 0 - 4)

  Health = 2
  Fire = 1
  Reactivity = 0

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  67-68-5 dimethyl sulfoxide
- Identification number(s)
  - EC number: 200-664-3

4 First-aid measures

- Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: If symptoms persist consult doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed
      No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
- Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Not required.
  - Environmental precautions: Dilute with plenty of water. Do not allow to enter sewers/surface or ground water.
  - Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Reference to other sections
    See Section 7 for information on safe handling.
    See Section 8 for information on personal protection equipment.
    See Section 13 for disposal information.
Trade name: DMSO

- Protective Action Criteria for Chemicals

  - PAC-1: 150 ppm
  - PAC-2: 290 ppm
  - PAC-3: 1,800 ppm

7 Handling and storage

- Handling:
  - Precautions for safe handling: Store in cool, dry place in tightly closed receptacles.
  - Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and containers: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters

- Components with limit values that require monitoring at the workplace:
  - 67-68-5 dimethyl sulfoxide (75-100%)
  - WEEL Long-term value: 250 ppm

- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      - Keep away from food and beverages.
      - Immediately remove all soiled and contaminated clothing.
      - Wash hands before breaks and at the end of work.
      - Avoid contact with the eyes and skin.
  - Respiratory protection: Suitable respiratory protective device recommended.
  - Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Fluid</td>
</tr>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### · Change in condition

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/Melting range</td>
<td>18.45 °C (65.2 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>189 °C (372.2 °F)</td>
</tr>
</tbody>
</table>

#### · Flash point

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>95 °C (203 °F)</td>
</tr>
</tbody>
</table>

#### · Flammability (solid, gaseous)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### · Ignition temperature

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition temperature</td>
<td>270 °C (518 °F)</td>
</tr>
</tbody>
</table>

#### · Decomposition temperature

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

#### · Auto igniting

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto igniting</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

#### · Danger of explosion

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard</td>
</tr>
</tbody>
</table>

#### · Explosion limits

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower</td>
<td>1.8 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>63 Vol %</td>
</tr>
</tbody>
</table>

#### · Vapor pressure at 20 °C (68 °F)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor pressure</td>
<td>2.5 hPa (1.9 mm Hg)</td>
</tr>
</tbody>
</table>

#### · Density at 20 °C (68 °F)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>1.1 g/cm³ (9.1795 lbs/gal)</td>
</tr>
</tbody>
</table>

#### · Relative density

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative density</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

#### · Vapor density

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor density</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

#### · Evaporation rate

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

#### · Solubility in / Miscibility with Water

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Fully miscible</td>
</tr>
</tbody>
</table>

#### · Partition coefficient (n-octanol/water)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition coefficient</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

#### · Viscosity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td>198 mPas</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Organic solvents</td>
<td>100.0 %</td>
</tr>
<tr>
<td>VOC content</td>
<td>100.00 %</td>
</tr>
</tbody>
</table>

#### · Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other information</td>
<td>No further relevant information available</td>
</tr>
</tbody>
</table>
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**:
    - **LD/LC50 values that are relevant for classification**:
      - 67-68-5 dimethyl sulfoxide
      - Oral LD50 14,500 mg/kg (rat)
  - **Primary irritant effect**:
    - **on the skin**: Irritant to skin and mucous membranes.
    - **on the eye**: Irritating effect.
    - **Sensitization**: No sensitizing effects known.
  - **Additional toxicological information**:
    - **Carcinogenic categories**
      - **IARC (International Agency for Research on Cancer)**: Substance is not listed.
      - **NTP (National Toxicology Program)**: Substance is not listed.
      - **OSHA-Ca (Occupational Safety & Health Administration)**: Substance is not listed.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
  - **Persistence and degradability**: No further relevant information available.
  - **Behavior in environmental systems**:
    - **Bioaccumulative potential**: No further relevant information available.
    - **Mobility in soil**: No further relevant information available.
  - **Ecotoxicological effects**: N/A
  - **Other information**: N/A
  - **Results of PBT and vPvB assessment**
    - **PBT**: Not applicable.
    - **vPvB**: Not applicable.
  - **Other adverse effects**: No further relevant information available.
### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:** Must be specially treated adhering to official regulations.

- **Uncleaned packagings**:
  - **Recommendation:** Disposal must be made according to official regulations.
  - **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**
  - **ADR, ADN, IMDG, IATA** not regulated

- **UN proper shipping name**
  - **ADR, ADN, IMDG, IATA** not regulated

- **Transport hazard class(es)**
  - **ADR, ADN, IMDG, IATA** not regulated
  - **Class** not regulated

- **Packing group**
  - **ADR, IMDG, IATA** not regulated

- **Environmental hazards**: Not applicable.

- **Special precautions for user** Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

- **UN "Model Regulation"**: not regulated

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**

  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      - Substance is not listed.
    - **Section 313 (Specific toxic chemical listings):**
      - Substance is not listed.
  
  - **TSCA (Toxic Substances Control Act):**
    - Substance is listed.

  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      - Substance is not listed.
    - **Chemicals known to cause reproductive toxicity for females:**
      - Substance is not listed.
    - **Chemicals known to cause reproductive toxicity for males:**
      - Substance is not listed.
Trade name: DMSO

<table>
<thead>
<tr>
<th>· Chemicals known to cause developmental toxicity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance is not listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Carcinogenic categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>· EPA (Environmental Protection Agency)</td>
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<tr>
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</tr>
<tr>
<td>· TLV (Threshold Limit Value established by ACGIH)</td>
</tr>
<tr>
<td>Substance is not listed.</td>
</tr>
<tr>
<td>· NIOSH-Ca (National Institute for Occupational Safety and Health)</td>
</tr>
<tr>
<td>Substance is not listed.</td>
</tr>
</tbody>
</table>

| · Chemical safety assessment: A Chemical Safety Assessment has not been carried out. |

### 16 Other information

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<tr>
<th>· Date of preparation / last revision 08/16/2018 / -</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>· Abbreviations and acronyms:</th>
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<td>DOT: US Department of Transportation</td>
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<td>IATA: International Air Transport Association</td>
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<td>ACGIH: American Conference of Governmental Industrial Hygienists</td>
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<td>PBT: Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>NIOSH: National Institute for Occupational Safety</td>
</tr>
<tr>
<td>OSHA: Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>TLV: Threshold Limit Value</td>
</tr>
<tr>
<td>PEL: Permissible Exposure Limit</td>
</tr>
<tr>
<td>REL: Recommended Exposure Limit</td>
</tr>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A</td>
</tr>
</tbody>
</table>
1 Identification

- **Product identifier**
  - **Trade name:** Opal 620 Reagent
  - **Product number:** FP1495A
  - **Application of the substance / the mixture Laboratory chemicals**

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** PerkinElmer Inc
    549 Albany st
    Boston, MA 02118
  - **Information department:** US Technical Support
    800-762-4000
  - **Emergency telephone number:**
    If inside USA, call CHEMTREC at 1-800-424-9300
    If outside USA, call CHEMTREC at 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Acute Tox. 3 H301 Toxic if swallowed.
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2A H319 Causes serious eye irritation.
  - STOT SE 3 H335 May cause respiratory irritation.

- **Additional information:** For the wording of the listed H phrases refer to section 16.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - 4-IODOPHENYLBORONIC ACID

- **Hazard statements**
  - Toxic if swallowed.
  - Causes skin irritation.
  - Causes serious eye irritation.
  - May cause respiratory irritation.

- **Precautionary statements**
  - If swallowed: Immediately call a poison center/doctor.
  - Specific treatment (see on this label).
  - Rinse mouth.
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Take off contaminated clothing and wash it before reuse.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
3 Composition/information on ingredients

3.1 Chemical characterization: Mixtures
3.2 Description: Mixture of the substances listed below with nonhazardous additions.

3.3 Dangerous components:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5122-99-6</td>
<td>4-iodophenylboronic acid</td>
</tr>
</tbody>
</table>

4 First-aid measures

4.1 Description of first aid measures
4.2 General information:

Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.

4.3 After inhalation:
In case of unconsciousness place patient stably in side position for transportation.

4.4 After eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

4.5 After swallowing:
Do not induce vomiting; immediately call for medical help.

4.6 Information for doctor:
Most important symptoms and effects, both acute and delayed: No further relevant information available.
Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

5.1 Extinguishing media
5.2 Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.3 Special hazards arising from the substance or mixture: No further relevant information available.
5.4 Advice for firefighters
5.5 Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Not required.
6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.
6.3 Methods and material for containment and cleaning up:
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
Trade name: Opal 620 Reagent

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and containers: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Keep receptacle tightly sealed.

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      Keep away from food and beverages.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    - Respiratory protection:
      In case of brief or low exposure use an approved cartridge filter. In case of intensive or longer exposure use SCBA.
      Suitable respiratory protective device recommended.
  - Protection of hands:
    - Protective gloves
      The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation...
Trade name: Opal 620 Reagent

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**
  
  ![Tightly sealed goggles]

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<table>
<thead>
<tr>
<th>9 Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information on basic physical and chemical properties</strong></td>
</tr>
<tr>
<td><strong>General Information</strong></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td><strong>Form:</strong> Solid</td>
</tr>
<tr>
<td><strong>Color:</strong> According to product specification</td>
</tr>
<tr>
<td><strong>Odor:</strong> Characteristic</td>
</tr>
<tr>
<td><strong>Odor threshold:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>pH-value:</strong> N/A</td>
</tr>
</tbody>
</table>

| **Change in condition** |
| **Melting point/Melting range:** Undetermined. |
| **Boiling point/Boiling range:** 189 °C (372.2 °F) |

| **Flash point:** 95 °C (203 °F) |

| **Flammability (solid, gaseous):** Not determined. |

| **Decomposition temperature:** Not determined. |

| **Auto igniting:** Product is not selfigniting. |

| **Danger of explosion:** Product does not present an explosion hazard. |

| **Explosion limits:** |
| **Lower:** Not determined. |
| **Upper:** Not determined. |

| **Vapor pressure:** Not applicable. |

| **Density:** Not determined. |
| **Relative density:** Not determined. |
| **Vapor density:** Not applicable. |
| **Evaporation rate:** Not applicable. |

| **Solubility in / Miscibility with Water:** Insoluble. |

| **Partition coefficient (n-octanol/water):** Not determined. |

| **Viscosity:** |
| **Dynamic:** Not applicable. |
| **Kinematic:** Not applicable. |
Trade name: Opal 620 Reagent

- Solvent content:
  - VOC content: 0.00 %
- Solids content: 100.0 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
  - Primary irritant effect:
    - on the skin: Irritant to skin and mucous membranes.
    - on the eye: Irritating effect.
  - Sensitization: No sensitizing effects known.
- Additional toxicological information:
  The product shows the following dangers according to internally approved calculation methods for preparations:
  Toxic
  Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Ecotoxic effects: N/A
- Other information: N/A
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
### 13 Disposal considerations

- **Waste treatment methods**
  - Recommendation: Must be specially treated adhering to official regulations.

- **Uncleaned packagings:**
  - Recommendation: Disposal must be made according to official regulations.

### 14 Transport information

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th>UN2811</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
<td>UN2811</td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>2811 Toxic solids, organic, n.o.s. (4-IODOPHENYLBORONIC ACID)</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)</td>
</tr>
<tr>
<td><strong>IMDG, IATA</strong></td>
<td>TOXIC SOLID, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Transport hazard class(es)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
</tr>
</tbody>
</table>

- **Class**: 6.1 Toxic substances
- **Label**: 6.1

<table>
<thead>
<tr>
<th><strong>Packing group</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
</tr>
</tbody>
</table>

- **Packing group**: III

<table>
<thead>
<tr>
<th><strong>Environmental hazards:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
</tr>
</tbody>
</table>

- Environmental hazards: Not applicable.

<table>
<thead>
<tr>
<th><strong>Special precautions for user</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
</tr>
</tbody>
</table>

- Danger code (Kemler): 60
- EMS Number: F-A,S-A
- Stowage Category: A

<table>
<thead>
<tr>
<th><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
</tr>
</tbody>
</table>

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

<table>
<thead>
<tr>
<th><strong>Transport/Additional information:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
</tr>
</tbody>
</table>

- Quantity limitations: On passenger aircraft/rail: 100 kg
  - On cargo aircraft only: 200 kg

<table>
<thead>
<tr>
<th><strong>ADR</strong></th>
</tr>
</thead>
</table>

- Exempted quantities (EQ): Code: E1
  - Maximum net quantity per inner packaging: 30 g
  - Maximum net quantity per outer packaging: 1000 g
Safety Data Sheet
acc. to OSHA HCS

Printing date 08/16/2018
Reviewed on 08/16/2018

Trade name: Opal 620 Reagent

(Contd. of page 6)

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Limited quantities (LQ)</th>
<th>5 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excepted quantities (EQ)</td>
<td>Code: E1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum net quantity per inner packaging: 30 g</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 g</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (4-IODOPHENYLBORONIC ACID), 6.1, III</td>
<td></td>
</tr>
</tbody>
</table>

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
  - Section 355 (extremely hazardous substances):
    None of the ingredients is listed.
  - Section 313 (Specific toxic chemical listings):
    None of the ingredients is listed.
  - TSCA (Toxic Substances Control Act):
    None of the ingredients is listed.
  - TSCA new (21st Century Act) (Substances not listed)
    5122-99-6 4-IODOPHENYLBORONIC ACID
  - Proposition 65
    - Chemicals known to cause cancer:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for females:
      None of the ingredients is listed.
    - Chemicals known to cause reproductive toxicity for males:
      None of the ingredients is listed.
    - Chemicals known to cause developmental toxicity:
      None of the ingredients is listed.
  - Carcinogenic categories
    - EPA (Environmental Protection Agency)
      None of the ingredients is listed.
    - TLV (Threshold Limit Value established by ACGIH)
      None of the ingredients is listed.
    - NIOSH-Ca (National Institute for Occupational Safety and Health)
      None of the ingredients is listed.
    - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided in this Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that

(Contd. on page 8)
Trade name: Opal 620 Reagent

these are the only hazards which exist. PerkinElmer, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

- **Date of preparation / last revision**: 08/16/2018 / -
- **Abbreviations and acronyms**:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACCIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Tox. 3: Acute toxicity – Category 3
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3