1 Identification

- **Product identifier**
  - **Trade name:** Opti-Fluor
  - **Article number:** 6013199, 6013193, 6013194
- **Relevant identified uses of the substance or mixture and uses advised against**
  - No further relevant information available.
- **Application of the substance / the preparation** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - PerkinElmer Health Sciences B.V.
    - Rigaweg 22
    - 9723 TH Groningen
    - The Netherlands
    - P.O. Box 5205
    - 9700 GE Groningen
    - The Netherlands
    - Phone: 0031 50 5445900
    - Fax: 0031 50 5445950
    - www.perkinelmer.com
  - **Information department:**
    - Quality Assurance, Environment, Safety & Health (QA/ESH)
    - Jack.VanderWeele@perkinelmer.com
  - **Emergency telephone number:**
    - +31 50 5445971
    - CHEMTREC (within U.S.A. and Canada) 1-800-424-9300
    - CHEMTREC (from outside U.S.A. and Canada) +1703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS08 Health hazard
    - **H351** Suspected of causing cancer.
    - **H304** May be fatal if swallowed and enters airways.
  - GHS05 Corrosion
    - **H318** Causes serious eye damage.
  - GHS07
    - **H315** Causes skin irritation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - Xn; Harmful
  - **R40:** Limited evidence of a carcinogenic effect.

(Contd. on page 2)
Trade name: Opti-Fluor

Xi; Irritant

R41: Risk of serious damage to eyes.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment:
The product has to be labeled due to the calculation procedure of international guidelines.

Classification system:
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements

Labelling according to EU guidelines:
The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:

Xn Harmful

Hazard-determining components of labeling:
tributyl phosphate

Risk phrases:
40 Limited evidence of a carcinogenic effect.
41 Risk of serious damage to eyes.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 2
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = *2
Fire = 1
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.
3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture: consisting of the following components.

<table>
<thead>
<tr>
<th>Chemical characterization</th>
<th>Description</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>67774-74-7 benzene, C10-13-alkyl derivatives</td>
<td>60-80%</td>
<td>Dangerous components:</td>
</tr>
<tr>
<td>577-11-7 Sodium dioctyl sulphosuccinate</td>
<td>10-20%</td>
<td></td>
</tr>
<tr>
<td>9016-45-9 Alkylphenol Polyglycolether</td>
<td>2.5-10%</td>
<td></td>
</tr>
<tr>
<td>126-73-8 tributyl phosphate</td>
<td>2.5-10%</td>
<td></td>
</tr>
<tr>
<td>68412-53-3 Nonylphenyl (branched) polyoxyethylene ether phosphate</td>
<td>≤2.5%</td>
<td></td>
</tr>
</tbody>
</table>

- **Non-Dangerous components**

<table>
<thead>
<tr>
<th>Chemical characterization</th>
<th>Description</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>92-71-7 2,5-Diphenyloxazole (PPO)</td>
<td>≤2.5%</td>
<td></td>
</tr>
<tr>
<td>13280-61-0 1,4-Bis-(2-methylstyryl)-benzene (bis-MSB)</td>
<td>≤2.5%</td>
<td></td>
</tr>
<tr>
<td>water, distilled, conductivity or of similar purity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

4 First-aid measures

- **Description of first aid measures**
  - **After inhalation:** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
  - **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - **After swallowing:** Rinse out mouth and then drink plenty of water.
  - **Information for doctor:**
    - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
Trade name: Opti-Fluor

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

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  - Foam
  - Fire-extinguishing powder
  - Carbon dioxide
- Special hazards arising from the substance or mixture: Carbon monoxide (CO)
- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation
  - Environmental precautions:
    - Do not allow product to reach sewage system or any water course.
    - Inform respective authorities in case of seepage into water course or sewage system.
    - 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.

7 Handling and storage

- Handling:
  - Precautions for safe handling: 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 receptacles: Store in a cool location.
    - 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>Substance</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
<th>BEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>126-73-8 tributyl phosphate</td>
<td>5 mg/m³</td>
<td>2.5 mg/m³, 0.2 ppm</td>
<td>2.2 mg/m³, 0.2 ppm</td>
<td></td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes.
  Avoid contact with the eyes and skin.

· Breathing equipment: Not required.

· Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

  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: Fluid
    - Form: Fluid
    - Color: Colorless
    - Odor: Characteristic
  - Change in condition
    - Melting point/Melting range: -70 °C (-94 °F)
    - Boiling point/Boiling range: 271 °C (520 °F)
  - Flash point: 150 °C (302 °F)
  - Ignition temperature: 400 °C (752 °F)
  - Auto igniting: Product is not selfigniting.
  - Danger of explosion: Product does not present an explosion hazard.
  - Density at 20 °C (68 °F): 0.900 g/cm³ (7.511 lbs/gal)
  - Solubility in / Miscibility with Water: Not miscible or difficult to mix.
  - Solvent content:
    - Organic solvents: 0-5 %
    - VOC content: 2.5-10 %
  - Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity
  - 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: Carbon monoxide

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:
### 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.
  - **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 not be disposed of together with household garbage. Do not allow product to reach sewage system.
  - **Uncleaned packagings:**
    - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>Void</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR, ADN, IMDG, IATA</td>
<td>Void</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>Void</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR, ADN, IMDG, IATA</td>
<td>Void</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Class</th>
<th>Void</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Packing group</th>
<th>Void</th>
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<tbody>
<tr>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>No</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td></td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td>Not dangerous according to the above specifications.</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</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 ingredient is listed.
  - **Section 313 (Specific toxic chemical listings):**
    - None of the ingredients is listed.
  - **TSCA (Toxic Substances Control Act):**
    - All ingredients are listed.
  - **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.
  - **MAK (German Maximum Workplace Concentration)**
    - None of the ingredients is listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    - None of the ingredients is listed.
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases
  H302 Harmful if swallowed.
  H304 May be fatal if swallowed and enters airways.
  H315 Causes skin irritation.
  H318 Causes serious eye damage.
  H351 Suspected of causing cancer.
  R22 Harmful if swallowed.
  R38 Irritating to skin.
  R40 Limited evidence of a carcinogenic effect.
  R41 Risk of serious damage to eyes.
  R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· Department issuing MSDS: Quality Assurance, Environment, Safety & Health (QA/ESH)
· Contact: J. van der Weele

· Abbreviations and acronyms:
  RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
  ICAO: International Civil Aviation Organization
  ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
  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
  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)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)

· * Data compared to the previous version altered.