SECTION 1: Identification of the substance/mixture and of the company/undertaking

Identification of the substance or mixture

<table>
<thead>
<tr>
<th>Product code</th>
<th>4329437</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>POROS HE50, 1 L</td>
</tr>
</tbody>
</table>

Company/undertaking identification

Life Technologies
5791 Van Allen Way
PO Box 6482
Carlsbad, CA 92008
+1 760 603 7200

12FL Suseo Office Building
281 Gwangpyeong-ro, Gangnam-gu
Seoul, 135-884, Korea
T 82.2.2023.0600

Guangzhou Office
Room 1010-1013 South Tower
Guangzhou World Trade Center Complex
371-376 HuanShi Dong Rd
Guangzhou 510095, China
Tel: +86-020-8760 9229
Hotline: 800 830 2001
Fax: +86-020-8775 0687

24 hour Emergency Response:

866-536-0631
301-431-8585
Outside of the U.S. ++1-301-431-8585

Country specific Emergency Number (if available):

CHEMTREC Israel (Tel Aviv) +972-3-7630639 (Greeting Language: Hebrew)
CHEMTREC Malaysia 1-800-815-308 (Toll Free) (Greeting Language: Malay)
CHEMTREC Malaysia (Kuala Lumpur) +(60)-327884561 (Greeting Language: Malay)
CHEMTREC Philippines 1-800-1-116-1020 (Toll Free) (Greeting Language: Tagalog)
CHEMTREC Philippines (Manila) +(63) 632-395-3308 (Greeting Language: Tagalog)
CHEMTREC Saudi Arabia +(966)-8111095861 (Greeting Language: Arabic and English)
CHEMTREC Singapore 800-101-2201 (Toll Free) (Greeting Language: English and Mandarin)
CHEMTREC Singapore +(65)-31581349 (Greeting Language: English and Mandarin)
CHEMTREC Australia (Sydney) +(61)-290372994 (Greeting Language: English)
CHEMTREC New Zealand (Auckland) +(64)-98010034 (Greeting Language: English)
CHEMTREC South Africa 0-800-983-611 (Greeting Language: English)
For research use only. Not intended for human or animal diagnostic or therapeutic uses.

## SECTION 2: Hazards identification

### Australian MSDS Statement
 Classified according to the criteria of Worksafe Australia. Hazardous Substance. Non-Dangerous Goods.

### GHS - Classification

**Signal word**

**Warning**

![Flammable symbol]

### Health hazards

Not Hazardous

### Physical hazards

<table>
<thead>
<tr>
<th>GHS Physical Hazard 1</th>
<th>GHS Physical Hazard Category Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

### Hazard statements

H226 - Flammable liquid and vapour

### Precautionary Statements

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P370 + P378 - In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction

P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment

P233 - Keep container tightly closed

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P280 - Wear protective gloves/protective clothing/eye protection/face protection

### European Union

#### EU Specific Hazard Statements

**R-phrase(s)**

R10 - Flammable
S phrases
S7 - Keep container tightly closed
S16 - Keep away from sources of ignition - No smoking
S33 - Take precautionary measures against static discharges

Principle Routes of Exposure/
Potential Health effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Health effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>eyes</td>
<td>May cause eye irritation with susceptible persons.</td>
</tr>
<tr>
<td>Skin</td>
<td>May cause skin irritation in susceptible persons.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May cause irritation of respiratory tract.</td>
</tr>
<tr>
<td>INGESTION</td>
<td>Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.</td>
</tr>
</tbody>
</table>

Specific effects

- Carcinogenic effects: Not applicable
- Mutagenic effects: Not applicable
- Reproductive toxicity: May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility
- Sensitisation: Not applicable

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>EINECS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>10-20</td>
</tr>
</tbody>
</table>

We recommend handling all chemicals with caution.

SECTION 4: First aid measures

- Skin contact: Wash off immediately with plenty of water.
- Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- INGESTION: Never give anything by mouth to an unconscious person.
- Inhalation: Remove to fresh air.
- Notes to Physician: Treat symptomatically.

SECTION 5: Firefighting measures

- Suitable extinguishing media: Dry chemical.
- Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

Australia HazChem Code 2YE

SECTION 6: Accidental release measures

- Personal precautions: Remove all sources of ignition.
- Methods for cleaning up: Soak up with inert absorbent material.
- Environmental precautions: Prevent further leakage or spillage if safe to do so.
See Section 12 for more information.

### SECTION 7: Handling and storage

**Handling**
Always wear recommended Personal Protective Equipment. Keep away from heat, sparks and open flame. Ensure adequate ventilation.

**Storage**
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

### SECTION 8: Exposure controls/personal protection

#### Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Australia STEL</th>
<th>Australia</th>
<th>Australia - Skin Absorbers</th>
<th>Australia - OES - Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol 64-17-5</td>
<td>None</td>
<td>1000 ppm 1880 mg/m³</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Zealand - Workplace Exposure Limits</th>
<th>New Zealand TWA</th>
<th>New Zealand STEL</th>
<th>New Zealand Ceiling Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol 64-17-5</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>China OEL</th>
<th>China - Skin Absorbers</th>
<th>Hong Kong OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol 64-17-5</td>
<td>None</td>
<td>None</td>
<td>TWA: 1000 ppm TWA: 1880 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Korea OEL (CEILING)</th>
<th>Korea OEL (TWA)</th>
<th>Korea OEL (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol 64-17-5</td>
<td>None</td>
<td>1000 ppm 1900 mg/m³</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Taiwan OEL - TWA</th>
<th>Taiwan OEL</th>
<th>Taiwan Ceiling Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol 64-17-5</td>
<td>1000 ppm 1880 mg/m³</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Singapore OEL (PEL)</th>
<th>Singapore OEL (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol 64-17-5</td>
<td>1000 ppm 1880 mg/m³</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Engineering measures
Ensure adequate ventilation, especially in confined areas.

#### Personal protective equipment

**Respiratory protection**
In case of insufficient ventilation, wear suitable respiratory equipment.

**Hand Protection**
Impervious gloves.

**Eye protection**
Safety glasses with side-shields.

**Skin and body protection**
Lightweight protective clothing.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**
Prevent product from entering drains.
**SECTION 9: Physical and chemical properties**

**General information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Suspension</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odour</td>
<td>Mixture has not been tested</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>Mixture has not been tested</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>°C no data available</td>
</tr>
<tr>
<td>Melting point / melting range</td>
<td>°C no data available</td>
</tr>
<tr>
<td>flash point</td>
<td>°C 40-45</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>°C no data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Mixture has not been tested</td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Mixture has not been tested</td>
</tr>
<tr>
<td>PH Range</td>
<td>6-8</td>
</tr>
</tbody>
</table>

**SECTION 10: Stability and reactivity**

- Stability: Fire Hazard.
- Materials to avoid: Strong oxidising agents.
- Hazardous decomposition products: Carbon oxides.
- Polymerisation: Hazardous polymerisation does not occur.

**SECTION 11: Toxicological information**

**Acute toxicity**

- **Principle Routes of Exposure/ Potential Health effects**
  - **eyes**: May cause eye irritation with susceptible persons.
  - **Skin**: May cause skin irritation in susceptible persons.
  - **Inhalation**: May cause irritation of respiratory tract.
  - **INGESTION**: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
  - **Reproductive toxicity**: May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 (oral,rat/mouse)</th>
<th>LD50 (dermal,rat/rabbit)</th>
<th>LC50 (inhalation,rat/mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>no data available</td>
<td>no data available</td>
<td>=124.7mg/L(Rat)</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

- **Ecotoxicity**: Daphnia magna
- **Mobility**: see log Pow
- **Biodegradation**: No information available
- **Bioaccumulation**: No information available
SECTION 13: Disposal considerations

Dispose of contents/containers in accordance with local regulations.

SECTION 14: Transport information

IATA

Proper Shipping Name: Not classified as dangerous within the meaning of transport regulations.
Hazard Class: None
Subsidiary class: None
Packing group: None
UN-No: None

Australia HazChem Code: 2YE

SECTION 15: Regulatory information

International Inventories

Complies

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>PICCS</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>Listed</td>
<td>-</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>China</th>
<th>AICS</th>
<th>KECL</th>
<th>DSL</th>
<th>NDSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>-</td>
</tr>
</tbody>
</table>

Korea

This product complies with applicable Korean chemical regulations.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Industrial Safety and Health Act (ISHA)</th>
<th>Toxic Chemicals Control Act (TCCA)</th>
<th>Wastes Control Act</th>
<th>National Emergency Management Agency (NEMA) - Dangerous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>1A - Known Human Carcinogen based on human evidence (limited to alcoholic beverages, Serial No. 386) TWA</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>400 L (Alcohol, denatured)</td>
</tr>
</tbody>
</table>

SECTION 16: Other information
Reason for revision
SDS sections updated

For research use only.

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRENTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE"

End of Safety Data Sheet