Section 1. Identification

Product identifier : Agilent Protein 230 Kit, Part Number 5067-1517
Part no. (chemical kit) : 5067-1517
Part no. : Reagents P230 G2938-80026
Protein 230 Gel Matrix Not available.
Protein 230 Dye Concentrate Not available.
Protein 230 Ladder Not available.
Protein 230 Sample Buffer Not available.

Relevant identified uses of the substance or mixture and uses advised against

Material uses : Analytical reagent.
Research and Development
Protein 230 Gel Matrix 4 x 0.65 ml
Protein 230 Dye Concentrate 1 x 0.09 ml
Protein 230 Ladder 1 x 0.18 ml
Protein 230 Sample Buffer 4 x 0.2 ml

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

Protein 230 Dye Concentrate
H227 FLAMMABLE LIQUIDS - Category 4
H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2.2%

GHS label elements

Hazard pictograms : Protein 230 Dye Concentrate

Signal word : Protein 230 Gel Matrix No signal word.
Protein 230 Dye Concentrate DANGER
Protein 230 Ladder No signal word.
Protein 230 Sample Buffer No signal word.

Hazard statements : Protein 230 Gel Matrix No known significant effects or critical hazards.
Protein 230 Dye Concentrate H227 - Combustible liquid.
Protein 230 Ladder No known significant effects or critical hazards.
Protein 230 Sample Buffer No known significant effects or critical hazards.

Precautionary statements

Date of issue/Date of revision : 15/03/2022
Date of previous issue : 23/10/2020
Version : 8
1/20
Section 2. Hazard(s) identification

Prevention:  
- Protein 230 Gel Matrix: Not applicable.  
- Protein 230 Dye Concentrate: P280 - Wear eye or face protection.  
- Protein 230 Ladder: Not applicable.  
- Protein 230 Sample Buffer: Not applicable.

Response:  
- Protein 230 Gel Matrix: Not applicable.  
- Protein 230 Dye Concentrate: P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.  
- Protein 230 Ladder: Not applicable.  
- Protein 230 Sample Buffer: Not applicable.

Storage:  
- Protein 230 Gel Matrix: Not applicable.  
- Protein 230 Ladder: Not applicable.  
- Protein 230 Sample Buffer: Not applicable.

Disposal:  
- Protein 230 Gel Matrix: Not applicable.  
- Protein 230 Dye Concentrate: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.  
- Protein 230 Ladder: Not applicable.  
- Protein 230 Sample Buffer: Not applicable.

Supplemental label elements:  
- Additional warning phrases: Not applicable.

Other hazards which do not result in classification:  
- Protein 230 Gel Matrix: None known.  
- Protein 230 Dye Concentrate: None known.  
- Protein 230 Ladder: None known.  
- Protein 230 Sample Buffer: None known.

Section 3. Composition and ingredient information

Substance/mixture:  
- Protein 230 Gel Matrix: Mixture  
- Protein 230 Dye Concentrate: Mixture  
- Protein 230 Ladder: Mixture  
- Protein 230 Sample Buffer: Mixture

CAS number/other identifiers:

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>≥90</td>
<td>67-68-5</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>&lt;10</td>
<td>151-21-3</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>≥10 - ≤30</td>
<td>56-81-5</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.
### Section 4. First aid measures

#### Description of necessary first aid measures

<table>
<thead>
<tr>
<th>First aid measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>Protein 230 Gel Matrix</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>Protein 230 Gel Matrix</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Protein 230 Gel Matrix</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

Protein 230 Ladder: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protein 230 Sample Buffer: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Ingestion:

Protein 230 Gel Matrix: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protein 230 Dye Concentrate: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protein 230 Ladder: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protein 230 Sample Buffer: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Over-exposure signs/symptoms:

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact:

Protein 230 Gel Matrix: No known significant effects or critical hazards.
Protein 230 Dye Concentrate: Causes serious eye damage.
Protein 230 Ladder: No known significant effects or critical hazards.
Protein 230 Sample Buffer: No known significant effects or critical hazards.

Inhalation:

Protein 230 Gel Matrix: No known significant effects or critical hazards.
Protein 230 Dye Concentrate: No known significant effects or critical hazards.
Protein 230 Ladder: No known significant effects or critical hazards.
Protein 230 Sample Buffer: No known significant effects or critical hazards.

Skin contact:

Protein 230 Gel Matrix: No known significant effects or critical hazards.
Protein 230 Dye Concentrate: No known significant effects or critical hazards.
Protein 230 Ladder: No known significant effects or critical hazards.
Protein 230 Sample Buffer: No known significant effects or critical hazards.

Ingestion:

Protein 230 Gel Matrix: No known significant effects or critical hazards.
Protein 230 Dye Concentrate: No known significant effects or critical hazards.
Protein 230 Ladder: No known significant effects or critical hazards.
Protein 230 Sample Buffer: No known significant effects or critical hazards.
### Section 4. First aid measures

<table>
<thead>
<tr>
<th>Protection of first-aiders</th>
<th>Protein 230 Gel Matrix</th>
<th>No action shall be taken involving any personal risk or without suitable training.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: pain, watering, redness.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: pain, watering, redness.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indication of immediate medical attention and special treatment needed, if necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes to physician</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific treatments</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific treatment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: pain, watering, redness.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: pain or irritation, redness, blistering may occur.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indication of immediate medical attention and special treatment needed, if necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes to physician</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific treatments</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific treatment.</td>
</tr>
</tbody>
</table>
## Section 5. Firefighting measures

### Extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Protein 230 Gel Matrix</th>
<th>Use an extinguishing agent suitable for the surrounding fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Use dry chemical, CO₂, water spray (fog) or foam.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unsuitable extinguishing media</th>
<th>Protein 230 Gel Matrix</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Do not use water jet.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>None known.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>None known.</td>
</tr>
</tbody>
</table>

### Specific hazards arising from the chemical

<table>
<thead>
<tr>
<th>Protein 230 Gel Matrix</th>
<th>In a fire or if heated, a pressure increase will occur and the container may burst.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
</tbody>
</table>

### Hazardous thermal decomposition products

<table>
<thead>
<tr>
<th>Protein 230 Gel Matrix</th>
<th>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides, metal oxide/oxides</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, metal oxide/oxides</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, metal oxide/oxides</td>
</tr>
</tbody>
</table>

### Special protective actions for fire-fighters

<table>
<thead>
<tr>
<th>Protein 230 Gel Matrix</th>
<th>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

---
Section 5. Firefighting measures

<table>
<thead>
<tr>
<th>Protein 230 Sample Buffer</th>
<th>Protein 230 Gel Matrix</th>
<th>Protein 230 Dye Concentrate</th>
<th>Protein 230 Ladder</th>
<th>Protein 230 Sample Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>

Special protective equipment for fire-fighters:

- Protein 230 Gel Matrix
- Protein 230 Dye Concentrate
- Protein 230 Ladder
- Protein 230 Sample Buffer

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**:

- Protein 230 Gel Matrix: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
- Protein 230 Dye Concentrate: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- Protein 230 Ladder: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
- Protein 230 Sample Buffer: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

**For emergency responders**:

- Protein 230 Gel Matrix: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Protein 230 Dye Concentrate: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Protein 230 Ladder: If specialised clothing is required to deal with the
Environmental precautions

Protein 230 Gel Matrix
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Protein 230 Dye Concentrate
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Protein 230 Ladder
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Protein 230 Sample Buffer
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Protein 230 Gel Matrix
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Protein 230 Dye Concentrate
Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Protein 230 Ladder
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Protein 230 Sample Buffer
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures**

- **Protein 230 Gel Matrix**: Put on appropriate personal protective equipment (see Section 8).
- **Protein 230 Dye Concentrate**: Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
- **Protein 230 Ladder**: Put on appropriate personal protective equipment (see Section 8).
- **Protein 230 Sample Buffer**: Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene**

- **Protein 230 Gel Matrix**: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- **Protein 230 Dye Concentrate**: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- **Protein 230 Ladder**: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- **Protein 230 Sample Buffer**: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities**

- **Protein 230 Gel Matrix**: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Section 7. Handling and storage

Protein 230 Dye Concentrate  Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Protein 230 Ladder  Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Protein 230 Sample Buffer  Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>DFG MAC-values list (Germany, 8/2020). Absorbed through skin.</td>
</tr>
<tr>
<td></td>
<td>PEAK: 320 mg/m³, 4 times per shift, 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>TWA: 160 mg/m³, 8 hours.</td>
</tr>
<tr>
<td></td>
<td>PEAK: 100 ppm, 4 times per shift, 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>TWA: 50 ppm, 8 hours.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>Safe Work Australia (Australia, 12/2019).</td>
</tr>
<tr>
<td>Glycerol</td>
<td>TWA: 10 mg/m³, 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls    : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Section 8. Exposure controls and personal protection

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state: Protein 230 Gel Matrix Liquid.
Protein 230 Dye Concentrate Liquid.
Protein 230 Ladder Liquid.
Protein 230 Sample Buffer Liquid.

Colour: Protein 230 Gel Matrix Not available.
Protein 230 Dye Concentrate Blue.
Protein 230 Ladder Not available.
Protein 230 Sample Buffer Not available.

Odour: Protein 230 Gel Matrix Not available.
Protein 230 Dye Concentrate Not available.
Protein 230 Ladder Not available.
Protein 230 Sample Buffer Not available.

Odour threshold: Protein 230 Gel Matrix Not available.
Protein 230 Dye Concentrate Not available.
Protein 230 Ladder Not available.
Protein 230 Sample Buffer Not available.
# Section 9. Physical and chemical properties and safety characteristics

## pH
- Protein 230 Gel Matrix: Not available.
- Protein 230 Dye Concentrate: Not available.
- Protein 230 Ladder: Not available.
- Protein 230 Sample Buffer: Not available.

## Melting point/freezing point
- Protein 230 Gel Matrix: Not available.
- Protein 230 Dye Concentrate: Not available.
- Protein 230 Ladder: Not available.
- Protein 230 Sample Buffer: Not available.

## Boiling point, initial boiling point, and boiling range
- Protein 230 Gel Matrix: Not available.
- Protein 230 Dye Concentrate: Not available.
- Protein 230 Ladder: Not available.
- Protein 230 Sample Buffer: Not available.

## Flash point
- Protein 230 Gel Matrix: Not available.
- Protein 230 Dye Concentrate: Closed cup: 93°C (199.4°F)
- Protein 230 Ladder: Not available.
- Protein 230 Sample Buffer: Not available.

## Evaporation rate

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Closed cup</th>
<th>Open cup</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>°C</td>
<td>°F</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetic acid, (ethylenedinitrilo)tetra-, disodium salt, dihydrate</td>
<td>&gt;100</td>
<td>&gt;212</td>
</tr>
<tr>
<td>1,4-dimercaptobutane-2,3-diol</td>
<td>&gt;110</td>
<td>&gt;230</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>&gt;100</td>
<td>&gt;212</td>
</tr>
</tbody>
</table>

## Flammability
- Protein 230 Gel Matrix: Not applicable.
- Protein 230 Dye Concentrate: Not applicable.
- Protein 230 Ladder: Not applicable.
- Protein 230 Sample Buffer: Not applicable.

## Lower and upper explosion limit/flammability limit
- Protein 230 Gel Matrix: Not available.
- Protein 230 Dye Concentrate: Not available.
- Protein 230 Ladder: Not available.
- Protein 230 Sample Buffer: Not available.

## Vapour pressure

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Vapour Pressure at 20°C</th>
<th>Vapour pressure at 50°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm Hg</td>
<td>kPa</td>
</tr>
<tr>
<td>Protein 230 Gel Matrix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>23.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Trometamol</td>
<td>&lt;0.00075006</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>0.42</td>
<td>0.056</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>≤0.0013501</td>
<td>≤0.00018</td>
</tr>
</tbody>
</table>
### Section 9. Physical and chemical properties and safety characteristics

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>°C</th>
<th>°F</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protein 230 Dye Concentrate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>300 to 302</td>
<td>572 to 575.6</td>
<td>VDI 2263</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>310.5</td>
<td>590.9</td>
<td></td>
</tr>
<tr>
<td><strong>Protein 230 Ladder</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium azide</td>
<td>309</td>
<td>588.2</td>
<td>EU A.16</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>366</td>
<td>690.8</td>
<td></td>
</tr>
<tr>
<td><strong>Protein 230 Sample Buffer</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium azide</td>
<td>309</td>
<td>588.2</td>
<td>EU A.16</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>366</td>
<td>690.8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Ingredient Name</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative density</td>
<td>Protein 230 Gel Matrix</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>Protein 230 Gel Matrix</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Protein 230 Gel Matrix</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Protein 230 Gel Matrix</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td><strong>Ingredient name</strong></td>
<td>°C</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------</td>
<td>----</td>
</tr>
<tr>
<td><strong>Protein 230 Dye Concentrate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>23.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>0.05</td>
<td>0.0067</td>
</tr>
<tr>
<td><strong>Protein 230 Sample Buffer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>23.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>0.05</td>
<td>0.0067</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Protein 230 Gel Matrix</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Protein 230 Gel Matrix</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Particle characteristics</td>
<td>Protein 230 Gel Matrix</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific test data related to reactivity available for this product or its ingredients.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical stability</th>
<th>Protein 230 Gel Matrix</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possibility of hazardous reactions</th>
<th>Protein 230 Gel Matrix</th>
<th>Under normal conditions of storage and use, hazardous reactions will not occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conditions to avoid</th>
<th>Protein 230 Gel Matrix</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Avoid all possible sources of ignition (spark or flame).</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incompatible materials</th>
<th>Protein 230 Gel Matrix</th>
<th>May react or be incompatible with oxidising materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Reactive or incompatible with the following materials: oxidising materials</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous decomposition products</th>
<th>Protein 230 Gel Matrix</th>
<th>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity
## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>40000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>14500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1288 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

### Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>250 ug</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 50 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Mouse</td>
<td>-</td>
<td>24 hours 25 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 25 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 25 mg</td>
<td>-</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

### Sensitisation

Not available.

### Mutagenicity

**Conclusion/Summary**: Not available.

### Carcinogenicity

**Conclusion/Summary**: Not available.

### Reproductive toxicity

**Conclusion/Summary**: Not available.

### Teratogenicity

**Conclusion/Summary**: Not available.

### Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Category 3</td>
<td>-</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>Category 3</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

### Specific target organ toxicity (repeated exposure)

---

*Date of issue/Date of revision*: 15/03/2022  
*Date of previous issue*: 23/10/2020  
*Version*: 8  
15/20
**Section 11. Toxicological information**

Not available.

**Aspiration hazard**

Not available.

**Information on likely routes of exposure**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Routes of entry anticipated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>Oral, Dermal, Inhalation</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Oral, Dermal, Inhalation</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>Oral, Dermal, Inhalation</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>Oral, Dermal, Inhalation</td>
</tr>
</tbody>
</table>

**Potential acute health effects**

**Eye contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No known significant effects or critical hazards. Causes serious eye damage.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Inhalation**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Skin contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Ingestion**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: pain, watering, redness</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>Adverse symptoms may include the following: pain, watering, redness</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

**Inhalation**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

**Skin contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: pain or irritation, redness, blistering may occur</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

**Ingestion**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Adverse symptoms may include the following: stomach pains</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Short term exposure**

**Potential immediate effects**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>Not available.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Potential delayed effects**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Gel Matrix</td>
<td>Not available.</td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

*Date of issue/Date of revision: 15/03/2022, Date of previous issue: 23/10/2020, Version: 8*
Section 11. Toxicological information

### Long term exposure

**Potential immediate effects**: Not available.

**Potential delayed effects**: Not available.

**Potential chronic health effects**

<table>
<thead>
<tr>
<th>General</th>
<th>Protein 230 Gel Matrix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carcinogenicity</th>
<th>Protein 230 Gel Matrix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mutagenicity</th>
<th>Protein 230 Gel Matrix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reproductive toxicity</th>
<th>Protein 230 Gel Matrix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protein 230 Dye Concentrate</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Ladder</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Protein 230 Sample Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

### Numerical measures of toxicity

#### Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapours) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>23320.8</td>
<td>5431.9</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>14500</td>
<td>40000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>1288</td>
<td>300</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>50026.9</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>129.4</td>
</tr>
<tr>
<td>Protein 230 Ladder</td>
<td>12600</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Protein 230 Sample Buffer</td>
<td>16666.7</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>50</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

### Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>Acute LC50 25000 ppm Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Acute LC50 34000000 μg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 μ/L Marine water</td>
<td>Algae - Ulva lactuca</td>
<td>21 days</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>Acute EC50 1200 μg/l Marine water</td>
<td>Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 900 μg/l Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

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### Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protein 230 Dye Concentrate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td><strong>Protein 230 Ladder</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

### Proactivity and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protein 230 Dye Concentrate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>OECD 301D Ready Biodegradability - Closed Bottle Test</td>
<td>31 % - Not readily - 28 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>OECD 301B Ready Biodegradability - CO2 Evolution Test</td>
<td>95 % - Readily - 28 days</td>
<td>20 mg/l</td>
<td>Activated sludge</td>
</tr>
<tr>
<td><strong>Protein 230 Ladder</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>301D Ready Biodegradability - Closed Bottle Test</td>
<td>93 % - 30 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Soil/water partition coefficient (Koc)

- Not available.

### Other adverse effects

- No known significant effects or critical hazards.

### Aggregate Protein 230 Kit, Part Number 5067-1517
Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

ADG / IMDG / IATA

Not regulated as Dangerous Goods according to the ADG Code.

Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments

Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

6

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.
Canada : Not determined.
China : Not determined.
Europe : Not determined.
Japan : Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
New Zealand : Not determined.
Philippines : Not determined.
Republic of Korea : Not determined.
Taiwan : Not determined.

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Version : 8 19/20
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>At least one component is inactive.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

Section 16. Any other relevant information

**History**
- Date of issue/Date of revision: 15/03/2022
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- Version: 8

**Key to abbreviations**
- ADG = Australian Dangerous Goods
- ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- N/A = Not available
- SUSMP = Standard Uniform Schedule of Medicine and Poisons
- UN = United Nations

**Procedure used to derive the classification**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein 230 Dye Concentrate</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>FLAMMABLE LIQUIDS - Category 4</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1</td>
<td></td>
</tr>
</tbody>
</table>

**References**
- Not available.

**Notice to reader**

Disclaimer: The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.