Cayman Chemical Company
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108

SAFETY DATA SHEET
Cytokeratin Monoclonal PE Antibody (Clone C-11)

1. Identification of the Substance/Mixture and of the Company/Undertaking

Product Code: 10478
Product Name: Cytokeratin Monoclonal PE Antibody (Clone C-11)
Synonyms: pan-Cytokeratin;
Intended Use: For research use only, not for human or veterinary use.

Manufacturer Information

Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

2. Hazards Identification

GHS Classification | Placard | Key word | GHS Hazard
---|---|---|---
Acute Toxicity: Oral, Category 2 | Skull and crossbones | Danger | Fatal if swallowed
Aquatic Toxicity (Acute), Category 1 | Pollution | Warning | Very toxic to aquatic life
Aquatic Toxicity (Chronic), Category 1 | Pollution | Warning | Very toxic to aquatic life with long lasting effects
Acute Toxicity: Skin, Category 1 | Skull and crossbones | Danger | Fatal in contact with skin
Serious Eye Damage/Eye Irritation, Category 2A | Exclamation point | Warning | Causes serious eye irritation
Skin Corrosion/Irritation, Category 3 | none | Warning | Causes mild skin irritation
Target Organ Systemic Toxicity (repeated exposure), Category 2 | Health hazard | Warning | May cause damage to {lungs} through prolonged or repeated exposure.

GHS Hazard Phrases:

H300: Fatal if swallowed.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H319: Causes serious eye irritation
H316: Causes mild skin irritation.
H310: Fatal in contact with skin
H373: May cause damage to {lungs} through prolonged or repeated exposure.
EUH032: Contact with acids liberates very toxic gas.

GHS Precaution Phrases:

P264: Wash hands thoroughly after handling.
P273: Avoid release to the environment - if this is not the intended use.
P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.
P262: Do not get in eyes, on skin, or on clothing.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.

GHS Response Phrases:

P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330: Rinse mouth.
P391: Collect spillage.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313: If eye irritation persists, get medical advice/attention.
P332+313: If skin irritation occurs, get medical advice/attention.
P361: Remove/Take off immediately all contaminated clothing.
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P302+350: IF ON SKIN: Gently wash with plenty of soap and water.
P310: Immediately call a POISON CENTER or doctor/physician.
P363: Wash contaminated clothing before reuse.
P314: Get medical attention/advice if you feel unwell.

GHS Storage and Disposal Phrases:
Please refer to Section 7 for Storage and Section 13 for Disposal information.

Route(s) of Entry:
Inhalation? Yes  Skin? Yes  Eyes? Yes  Ingestion? Yes  Other: Injection

Potential Health Effects (Acute and Chronic):
Causes mild skin irritation.
Causes serious eye irritation.
Contact with acids liberates very toxic gas.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be fatal if swallowed or absorbed through skin.
May be harmful by inhalation.
May cause damage to {lungs} through prolonged or repeated exposure.
May cause respiratory system irritation.

Target Organs:
Central nervous system, Heart, Brain.

LD 50 / LC 50:
No data available.

Signs and Symptoms Of Exposure:
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Medical Conditions Generally Aggravated By Exposure:
No data available.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cytokeratin Monoclonal PE Antibody (Clone C-11)</td>
<td>NA</td>
<td>0.071 %</td>
<td>NA</td>
<td>No phrases apply.</td>
<td>NA</td>
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<tr>
<td>2. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>70.872 %</td>
<td>232-936-2</td>
<td>No phrases apply.</td>
<td>MT6446000</td>
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<tr>
<td>4. Sodium phosphate, Dibasic</td>
<td>7558-79-4</td>
<td>9.922 %</td>
<td>231-448-7</td>
<td>R36</td>
<td>WC4500000</td>
</tr>
<tr>
<td>5. Sucrose</td>
<td>57-50-1</td>
<td>12.048 %</td>
<td>200-334-9</td>
<td>R48</td>
<td>WN6500000</td>
</tr>
</tbody>
</table>

4. First Aid Measures

Emergency and First Aid Procedures:

In Case of Inhalation:
Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

In Case of Skin Contact:
Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact:
Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion:
Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Indication of any immediate medical attention and special treatment needed:
No data available.

5. Fire Fighting Measures

Suitable Extinguishing Media:
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media:
A solid water stream may be inefficient.

flammable Properties and Hazards:
No data available.
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Flash Pt: No data.
Autoignition Pt: No data available.
Explosive Limits: LEL: No data. UEL: No data.
Hazardous Combustion Products: No data available.
Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6. Accidental Release Measures

- **Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid raising and breathing dust, and provide adequate ventilation.
- **Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.
- **Steps To Be Taken In Case Material Is Released Or Spilled:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

7. Handling and Storage

- **Precautions To Be Taken In Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
- **Precautions To Be Taken In Storing:** Keep container tightly closed. Store in accordance with information listed on the product insert.
- **Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cytokeratin Monoclonal PE Antibody (Clone C-11)</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
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<tr>
<td>2. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>3. Sodium azide</td>
<td>26628-22-8</td>
<td>No data.</td>
<td>CEIL: 0.29 mg/m3</td>
<td>No data.</td>
</tr>
<tr>
<td>5. Sucrose</td>
<td>57-50-1</td>
<td>PEL: 15 (dust); 5 (resp.) mg/m3</td>
<td>TLV: 10 mg/m3</td>
<td>No data.</td>
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</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
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<tr>
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<td>No data.</td>
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<tr>
<td>2. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
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<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>3. Sodium azide</td>
<td>26628-22-8</td>
<td>TWA: 0.1 mg/m3 ()</td>
<td>TWA: 0.1 mg/m3</td>
<td>TWA: 0.1 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 0.3 mg/m3 ()</td>
<td>STEL: 0.3 mg/m3</td>
<td>STEL: 0.3 mg/m3</td>
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<tr>
<td>5. Sucrose</td>
<td>57-50-1</td>
<td>TWA: 10 mg/m3 ()</td>
<td>TWA: 10 mg/m3</td>
<td>TWA: 10 mg/m3</td>
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<tr>
<td></td>
<td></td>
<td>STEL: 20 mg/m3 ()</td>
<td>STEL: 20 mg/m3</td>
<td>STEL: 20 mg/m3</td>
</tr>
</tbody>
</table>

**Protective Equipment Summary - Hazard Label Information:** Compatible chemical-resistant gloves
Eye wash station in work area
Lab coat
Safety glasses
Safety shower in work area
Vent Hood

**Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Eye Protection:** Safety glasses

**Protective Gloves:** Compatible chemical-resistant gloves
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Other Protective Clothing: Lab coat
Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.
Work/Hygienic/Maintenance Practices: Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.
Environmental Exposure Controls: No data available.

9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [ ] Liquid [ X ] Solid
Appearance and Odor: A lyophilized powder
pH: 7.4
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Autoignition Pt: No data.
Explosive Properties: No data available.
Oxidizing Properties: No data available.
Other Information
Percent Volatile: No data.

10. Stability and Reactivity

Reactivity: No data available.
Stability: Unstable [ ] Stable [ X ]
Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Conditions To Avoid: No data available.
Polymerization: Will occur [ ] Will not occur [ X ]
Incompatibility - Materials To Avoid:
acid chlorides
acids
halogenated hydrocarbon
metals
strong acids
strong oxidizing agents
Hazardous Decomposition Or Byproducts:
phosphorus oxides
sodium oxides

11. Toxicological Information

Toxicological Information: The toxicological effects of this product have not been thoroughly studied.

Sodium azide - Toxicity Data: Oral LD50 (rat): 27 mg/kg; Skin LD50 (rat): 50 mg/kg;
Sucrose - Toxicity Data: Oral LD50 (rat): 29,700 mg/kg;
Sodium phosphate, Dibasic - Irritation Data: Skin (rabbit): 500 mg (24h) mild;
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Chronic Toxicological Effects:
Sodium azide - Investigated as a mutagen, reproductive effector, and tumorigen.
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.
See actual entry in RTECS for complete information.
Sodium azide RTECS Number: VY8050000
Sodium phosphate, Dibasic RTECS Number: WC4500000
Sucrose RTECS Number: WN6500000

### Hazardous Components (Chemical Name)

<table>
<thead>
<tr>
<th></th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cytokeratin Monoclonal PE Antibody (Clone C-11)</td>
<td>NA</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>2.</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>4.</td>
<td>Sodium phosphate, Dibasic</td>
<td>7558-79-4</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>5.</td>
<td>Sucrose</td>
<td>57-50-1</td>
<td>n.a.</td>
<td>n.a.</td>
<td>A4</td>
</tr>
</tbody>
</table>

### 12. Ecological Information

**General Ecological Information:**
Avoid release into the environment - very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

Dispose in accordance with local, state, and federal regulations.

### 14. Transport Information

**Globally Harmonized System of Classification and Labelling**

- **Acute Toxicity:** Oral, Category 2 - Danger! Fatal if swallowed
- **Aquatic Toxicity (Acute):** Category 1 - Warning! Very toxic to aquatic life
- **Aquatic Toxicity (Chronic):** Category 1 - Warning! Very toxic to aquatic life with long lasting effects
- **Acute Toxicity:** Skin, Category 1 - Danger! Fatal in contact with skin
- **Serious Eye Damage/Eye Irritation:** Category 2A - Warning! Causes serious eye irritation
- **Skin Corrosion/Irritation:** Category 3 - Warning! Causes mild skin irritation
- **Target Organ Systemic Toxicity (repeated exposure):** Category 2 - Warning! May cause damage to lungs through prolonged or repeated exposure

**LAND TRANSPORT (US DOT)**

- **DOT Proper Shipping Name:** Not dangerous goods.

**LAND TRANSPORT (European ADR/RID)**

- **ADR/RID Shipping Name:** Not dangerous goods.

**AIR TRANSPORT (ICAO/IATA)**

- **ICAO/IATA Shipping Name:** Not dangerous goods.

**Additional Transport Information:**
Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**European Community Hazard Symbol codes**

- T+: Very Toxic; N: Dangerous for the environment

**European Community Risk and Safety Phrases**

- R27/28 - Very toxic in contact with skin and if swallowed.
- R32 - Contact with acid liberates very toxic gas.
- R36 - Irritating to eyes.
- R48 - Danger of serious damage to health by prolonged exposure.
- R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S22 - Do not breathe dust.
- S24/25 - Avoid contact with skin and eyes.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S28 - After contact with skin, wash immediately with plenty of soap-suds.
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)
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US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
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</thead>
<tbody>
<tr>
<td>1. Cytokeratin Monoclonal PE Antibody (Clone C-11)</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td>2. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3. Sodium azide</td>
<td>26628-22-8</td>
<td>Yes 500 LB</td>
<td>Yes 1000 LB</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4. Sodium phosphate, Dibasic</td>
<td>7558-79-4</td>
<td>No</td>
<td>Yes 5000 LB</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5. Sucrose</td>
<td>57-50-1</td>
<td>No</td>
<td>No</td>
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Other US EPA or State Lists

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<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
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<td>1. Cytokeratin Monoclonal PE Antibody (Clone C-11)</td>
<td>NA</td>
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<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>2. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
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<tr>
<td>3. Sodium azide</td>
<td>26628-22-8</td>
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<td>4. Sodium phosphate, Dibasic</td>
<td>7558-79-4</td>
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<td>5. Sucrose</td>
<td>57-50-1</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
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</tbody>
</table>

Regulatory Information Statement:

16. Other Information

Revision Date: 04/04/2013

Company Policy or Disclaimer
For research use only, not for human or veterinary use.

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required