

SAFETY DATA SHEET



InterPlay TAP Purification Kit, Part Number 240107

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

1.1 Product identifier

| | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|-----------|--|-------------------|-----------|--------------|-----------|------------|-----------|--------------------|-----------|-----------------------------|-----------|-----------------------------|-----------|-------------------------------------|-----------|---------------------------|-----------|---------------------------|-----------|---------------------------|-----------|
| Product name | : | InterPlay TAP Purification Kit, Part Number 240107 | | | | | | | | | | | | | | | | | | | | |
| Part No. (Kit) | : | 240107 | | | | | | | | | | | | | | | | | | | | |
| Part No. | : | <table><tr><td>β-Mercaptoethanol</td><td>200345-21</td></tr><tr><td>Lysis Buffer</td><td>240107-51</td></tr><tr><td>0.5 M EDTA</td><td>240107-52</td></tr><tr><td>Streptavidin Resin</td><td>240105-51</td></tr><tr><td>Streptavidin Binding Buffer</td><td>240107-54</td></tr><tr><td>Streptavidin Elution Buffer</td><td>240107-56</td></tr><tr><td>Streptavidin Supernatant Supplement</td><td>240107-57</td></tr><tr><td>MS-Grade Calmodulin Resin</td><td>240106-51</td></tr><tr><td>Calmodulin Binding Buffer</td><td>240107-58</td></tr><tr><td>Calmodulin Elution Buffer</td><td>240107-59</td></tr></table> | β-Mercaptoethanol | 200345-21 | Lysis Buffer | 240107-51 | 0.5 M EDTA | 240107-52 | Streptavidin Resin | 240105-51 | Streptavidin Binding Buffer | 240107-54 | Streptavidin Elution Buffer | 240107-56 | Streptavidin Supernatant Supplement | 240107-57 | MS-Grade Calmodulin Resin | 240106-51 | Calmodulin Binding Buffer | 240107-58 | Calmodulin Elution Buffer | 240107-59 |
| β-Mercaptoethanol | 200345-21 | | | | | | | | | | | | | | | | | | | | | |
| Lysis Buffer | 240107-51 | | | | | | | | | | | | | | | | | | | | | |
| 0.5 M EDTA | 240107-52 | | | | | | | | | | | | | | | | | | | | | |
| Streptavidin Resin | 240105-51 | | | | | | | | | | | | | | | | | | | | | |
| Streptavidin Binding Buffer | 240107-54 | | | | | | | | | | | | | | | | | | | | | |
| Streptavidin Elution Buffer | 240107-56 | | | | | | | | | | | | | | | | | | | | | |
| Streptavidin Supernatant Supplement | 240107-57 | | | | | | | | | | | | | | | | | | | | | |
| MS-Grade Calmodulin Resin | 240106-51 | | | | | | | | | | | | | | | | | | | | | |
| Calmodulin Binding Buffer | 240107-58 | | | | | | | | | | | | | | | | | | | | | |
| Calmodulin Elution Buffer | 240107-59 | | | | | | | | | | | | | | | | | | | | | |

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

Identified uses

| | | |
|-------------------------------------|-----------------|----------|
| Analytical reagent. | | |
| β-Mercaptoethanol | 0.75 ml (750 µl | 14.33 M) |
| Lysis Buffer | 50 ml | |
| 0.5 M EDTA | 0.2 ml | |
| Streptavidin Resin | 1.25 ml | |
| Streptavidin Binding Buffer | 25 ml | |
| Streptavidin Elution Buffer | 5 ml | |
| Streptavidin Supernatant Supplement | 0.1 ml | |
| MS-Grade Calmodulin Resin | 0.625 ml | |
| Calmodulin Binding Buffer | 40 ml | |
| Calmodulin Elution Buffer | 2.5 ml | |

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

InterPlay TAP Purification Kit, Part Number 240107

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

| | | | |
|---------------------------|---|-------------------------------------|----------------------------|
| Product definition | : | β -Mercaptoethanol | Mono-constituent substance |
| | | Lysis Buffer | Mixture |
| | | 0.5 M EDTA | Mixture |
| | | Streptavidin Resin | Mixture |
| | | Streptavidin Binding Buffer | Mixture |
| | | Streptavidin Elution Buffer | Mixture |
| | | Streptavidin Supernatant Supplement | Mixture |
| | | MS-Grade Calmodulin Resin | Mixture |
| | | Calmodulin Binding Buffer | Mixture |
| | | Calmodulin Elution Buffer | Mixture |

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

β -Mercaptoethanol

| | |
|------|--|
| H301 | ACUTE TOXICITY (oral) - Category 3 |
| H310 | ACUTE TOXICITY (dermal) - Category 2 |
| H330 | ACUTE TOXICITY (inhalation) - Category 2 |
| H315 | SKIN CORROSION/IRRITATION - Category 2 |
| H318 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 |
| H317 | SKIN SENSITISATION - Category 1 |
| H335 | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 |
| H411 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 |

0.5 M EDTA

| | |
|------|--|
| H319 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
|------|--|

Streptavidin Resin

| | |
|------|--------------------------------|
| H226 | FLAMMABLE LIQUIDS - Category 3 |
|------|--------------------------------|

Streptavidin Supernatant Supplement

| | |
|-------|--|
| H360D | REPRODUCTIVE TOXICITY (Unborn child) - Category 1B |
|-------|--|

MS-Grade Calmodulin Resin

| | |
|------|--------------------------------|
| H226 | FLAMMABLE LIQUIDS - Category 3 |
|------|--------------------------------|

| | | | |
|--|---|---|---|
| Ingredients of unknown toxicity | : | <input checked="" type="checkbox"/> Streptavidin Supernatant Supplement | Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% |
| | | | Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% |
| | | MS-Grade Calmodulin Resin | Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% |








See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

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SECTION 2: Hazards identification

| | | |
|--------------------------|--|--|
| Hazard pictograms | : <input checked="" type="checkbox"/> β -Mercaptoethanol |    |
| | 0.5 M EDTA |  |
| | Streptavidin Resin |  |
| | Streptavidin Supernatant Supplement |  |
| | MS-Grade Calmodulin Resin |  |
| Signal word | : β -Mercaptoethanol Lysis Buffer 0.5 M EDTA Streptavidin Resin Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin Calmodulin Binding Buffer Calmodulin Elution Buffer | Danger No signal word. Warning Warning No signal word. No signal word. Danger Warning No signal word. No signal word. |
| Hazard statements | : <input checked="" type="checkbox"/> β -Mercaptoethanol Lysis Buffer 0.5 M EDTA Streptavidin Resin Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin Calmodulin Binding Buffer Calmodulin Elution Buffer | H310 + H330 - Fatal in contact with skin or if inhaled. H301 - Toxic if swallowed. H318 - Causes serious eye damage. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H335 - May cause respiratory irritation. H411 - Toxic to aquatic life with long lasting effects. No known significant effects or critical hazards. H319 - Causes serious eye irritation. H226 - Flammable liquid and vapour. No known significant effects or critical hazards. No known significant effects or critical hazards. H360D - May damage the unborn child. H226 - Flammable liquid and vapour. No known significant effects or critical hazards. No known significant effects or critical hazards. |

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SECTION 2: Hazards identification

Precautionary statements

| | | |
|-------------------|---|--|
| Prevention | : <input checked="" type="checkbox"/> Mercaptoethanol | P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P273 - Avoid release to the environment. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapour. |
| | Lysis Buffer 0.5 M EDTA | Not applicable. P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling. |
| | Streptavidin Resin | P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | P201 - Obtain special instructions before use. |
| | MS-Grade Calmodulin Resin | P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |
| Response | : <input checked="" type="checkbox"/> Mercaptoethanol | P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or physician. P302 + P310 - IF ON SKIN: Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician. |
| | Lysis Buffer 0.5 M EDTA | Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | Streptavidin Resin | P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | P308 + P313 - IF exposed or concerned: Get medical attention. |
| | MS-Grade Calmodulin Resin | P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |
| Storage | : <input checked="" type="checkbox"/> Mercaptoethanol | P405 - Store locked up. |
| | Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Resin | Not applicable. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution | Not applicable. |

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SECTION 2: Hazards identification

| | | |
|---|--|--|
| | Buffer | |
| | Streptavidin Supernatant Supplement | P405 - Store locked up. |
| | MS-Grade Calmodulin Resin | Not applicable. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |
| Disposal | : β -Mercaptoethanol | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Resin | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | MS-Grade Calmodulin Resin | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |
| Hazardous ingredients | : <input checked="" type="checkbox"/> Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | - imidazole |
| | MS-Grade Calmodulin Resin | Not applicable. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |
| Supplemental label elements | : β -Mercaptoethanol | Not applicable. |
| | Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Resin | Not applicable. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | Not applicable. |
| | MS-Grade Calmodulin Resin | Not applicable. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |
| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | : β -Mercaptoethanol | Not applicable. |
| | Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Resin | Not applicable. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |

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SECTION 2: Hazards identification

| | |
|-------------------------------------|-----------------------------------|
| Streptavidin Supernatant Supplement | Restricted to professional users. |
| MS-Grade Calmodulin Resin | Not applicable. |
| Calmodulin Binding Buffer | Not applicable. |
| Calmodulin Elution Buffer | Not applicable. |

Special packaging requirements

| | | | |
|----------------------------------|---|-------------------------------------|-----------------|
| Tactile warning of danger | : | β-Mercaptoethanol | Not applicable. |
| | | Lysis Buffer | Not applicable. |
| | | 0.5 M EDTA | Not applicable. |
| | | Streptavidin Resin | Not applicable. |
| | | Streptavidin Binding Buffer | Not applicable. |
| | | Streptavidin Elution Buffer | Not applicable. |
| | | Streptavidin Supernatant Supplement | Not applicable. |
| | | MS-Grade Calmodulin Resin | Not applicable. |
| | | Calmodulin Binding Buffer | Not applicable. |
| | | Calmodulin Elution Buffer | Not applicable. |

2.3 Other hazards

| | | | |
|--|---|-------------------------------------|-------------|
| Other hazards which do not result in classification | : | β-Mercaptoethanol | None known. |
| | | Lysis Buffer | None known. |
| | | 0.5 M EDTA | None known. |
| | | Streptavidin Resin | None known. |
| | | Streptavidin Binding Buffer | None known. |
| | | Streptavidin Elution Buffer | None known. |
| | | Streptavidin Supernatant Supplement | None known. |
| | | MS-Grade Calmodulin Resin | None known. |
| | | Calmodulin Binding Buffer | None known. |
| | | Calmodulin Elution Buffer | None known. |

SECTION 3: Composition/information on ingredients

| | | | |
|-----------------------|---|-------------------------------------|----------------------------|
| 3.1 Substances | : | β-Mercaptoethanol | Mono-constituent substance |
| | | Lysis Buffer | Mixture |
| | | 0.5 M EDTA | Mixture |
| | | Streptavidin Resin | Mixture |
| | | Streptavidin Binding Buffer | Mixture |
| | | Streptavidin Elution Buffer | Mixture |
| | | Streptavidin Supernatant Supplement | Mixture |
| | | MS-Grade Calmodulin Resin | Mixture |
| | | Calmodulin Binding Buffer | Mixture |
| | | Calmodulin Elution Buffer | Mixture |

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SECTION 3: Composition/information on ingredients

| Product/ingredient name | Identifiers | % | Regulation (EC) No. 1272/2008 [CLP] | Type |
|--|---|-----------|---|---------|
| β-Mercaptoethanol 2-Mercaptoethanol | EC: 200-464-6 CAS: 60-24-2 | 100 | Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411 | [A] |
| Lysis Buffer Polyoxyethylene octyl phenyl ether | CAS: 9002-93-1 | ≤0.3 | Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 | [1] [5] |
| 0.5 M EDTA Edetic acid | EC: 200-449-4 CAS: 60-00-4 Index: 607-429-00-8 | ≥10 - ≤25 | Eye Irrit. 2, H319 | [1] |
| Streptavidin Resin Ethanol | EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5 | ≥10 - ≤25 | Flam. Liq. 2, H225 | [2] |
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | CAS: 9002-93-1 | ≤0.3 | Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 | [1] [5] |
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | CAS: 9002-93-1 | ≤0.3 | Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 | [1] [5] |
| Streptavidin Supernatant Supplement calcium chloride | EC: 233-140-8 CAS: 10043-52-4 Index: 017-013-00-2 | ≤3 | Eye Irrit. 2, H319 | [1] |
| Imidazole | EC: 206-019-2 CAS: 288-32-4 Index: 613-319-00-0 | <1 | Acute Tox. 4, H302 Skin Corr. 1C, H314 Repr. 1B, H360D (Unborn child) | [1] |
| MS-Grade Calmodulin Resin Ethanol | EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5 | ≥10 - ≤25 | Flam. Liq. 2, H225 | [2] |
| Sodium chloride | EC: 231-598-3 CAS: 7647-14-5 | ≤3 | Eye Irrit. 2, H319 | [1] |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | CAS: 9002-93-1 | ≤0.3 | Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 | [1] [5] |

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SECTION 3: Composition/information on ingredients

| | | | | |
|--|----------------|------|--|---------|
| Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether | CAS: 9002-93-1 | ≤0.3 | Aquatic Chronic 2, H411 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above. | [1] [5] |
|--|----------------|------|--|---------|

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.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

SECTION 4: First aid measures

4.1 Description of first aid measures

| | | |
|--------------------|-------------------------------------|--|
| Eye contact | : β-Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. |
| | Lysis Buffer | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| | 0.5 M EDTA | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. |
| | Streptavidin Resin | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs. |
| | Streptavidin Binding Buffer | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| | Streptavidin Elution Buffer | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| | Streptavidin Supernatant Supplement | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs. |
| | MS-Grade Calmodulin Resin | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs. |
| | Calmodulin Binding Buffer | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove |

SECTION 4: First aid measures

| | | |
|-------------------|-------------------------------------|--|
| | Calmodulin Elution Buffer | any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation | : β -Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. 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. |
| | Lysis Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | 0.5 M EDTA | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| | Streptavidin Resin | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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. |
| | Streptavidin Binding Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | Streptavidin Elution Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | Streptavidin Supernatant Supplement | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. 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. |
| | MS-Grade Calmodulin Resin | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to- |

SECTION 4: First aid measures

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| | | mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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. |
| | Calmodulin Binding Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | Calmodulin Elution Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| Skin contact | : β -Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | Lysis Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | 0.5 M EDTA | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | Streptavidin Resin | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | Streptavidin Binding Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | Streptavidin Elution Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | Streptavidin Supernatant Supplement | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | MS-Grade Calmodulin Resin | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | Calmodulin Binding Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | Calmodulin Elution Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | : β -Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 |

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SECTION 4: First aid measures

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| | <p>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.</p> |
| Lysis Buffer | <p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.</p> |
| 0.5 M EDTA | <p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention if adverse health effects persist or are severe. 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.</p> |
| Streptavidin Resin | <p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention if adverse health effects persist or are severe. 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.</p> |
| Streptavidin Binding Buffer | <p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.</p> |
| Streptavidin Elution Buffer | <p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.</p> |
| Streptavidin Supernatant Supplement | <p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention. Never give anything by mouth</p> |

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| | | |
|-----------------------------------|-------------------------------------|---|
| | | 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. |
| | MS-Grade Calmodulin Resin | Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention if adverse health effects persist or are severe. 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. |
| | Calmodulin Binding Buffer | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. |
| | Calmodulin Elution Buffer | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. |
| Protection of first-aiders | : β -Mercaptoethanol | 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. |
| | Lysis Buffer | No action shall be taken involving any personal risk or without suitable training. |
| | 0.5 M EDTA | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| | Streptavidin Resin | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| | Streptavidin Binding Buffer | No action shall be taken involving any personal risk or without suitable training. |
| | Streptavidin Elution Buffer | No action shall be taken involving any personal risk or without suitable training. |
| | Streptavidin Supernatant Supplement | 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. |
| | MS-Grade Calmodulin Resin | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| | Calmodulin Binding Buffer | No action shall be taken involving any personal risk or without suitable training. |
| | Calmodulin Elution Buffer | No action shall be taken involving any personal risk or |

SECTION 4: First aid measures

without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

| | | | | |
|---------------------|-------------------|-------------------------------------|---|--|
| Eye contact | : | β-Mercaptoethanol | Causes serious eye damage. | |
| | | Lysis Buffer | No known significant effects or critical hazards. | |
| | | 0.5 M EDTA | Causes serious eye irritation. | |
| | | Streptavidin Resin | No known significant effects or critical hazards. | |
| | | Streptavidin Binding Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Elution Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. | |
| | | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. | |
| | | Calmodulin Binding Buffer | No known significant effects or critical hazards. | |
| | | Calmodulin Elution Buffer | No known significant effects or critical hazards. | |
| | Inhalation | : | β-Mercaptoethanol | Fatal if inhaled. May cause respiratory irritation. |
| | | | Lysis Buffer | No known significant effects or critical hazards. |
| | | | 0.5 M EDTA | No known significant effects or critical hazards. |
| | | Streptavidin Resin | No known significant effects or critical hazards. | |
| | | Streptavidin Binding Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Elution Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. | |
| | | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. | |
| | | Calmodulin Binding Buffer | No known significant effects or critical hazards. | |
| | | Calmodulin Elution Buffer | No known significant effects or critical hazards. | |
| Skin contact | | : | β-Mercaptoethanol | Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. |
| | | | Lysis Buffer | No known significant effects or critical hazards. |
| | | | 0.5 M EDTA | No known significant effects or critical hazards. |
| | | Streptavidin Resin | No known significant effects or critical hazards. | |
| | | Streptavidin Binding Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Elution Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. | |
| | | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. | |
| | | Calmodulin Binding Buffer | No known significant effects or critical hazards. | |
| | | Calmodulin Elution Buffer | No known significant effects or critical hazards. | |
| | Ingestion | : | β-Mercaptoethanol | Toxic if swallowed. |
| | | | Lysis Buffer | No known significant effects or critical hazards. |
| | | | 0.5 M EDTA | No known significant effects or critical hazards. |
| | | Streptavidin Resin | No known significant effects or critical hazards. | |
| | | Streptavidin Binding Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Elution Buffer | No known significant effects or critical hazards. | |
| | | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. | |

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| | |
|---------------------------|---|
| MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| Calmodulin Elution Buffer | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| | | | |
|-------------------------------------|-------------------------------------|---|--|
| Eye contact | : β-Mercaptoethanol | Adverse symptoms may include the following: pain watering redness | |
| | Lysis Buffer | No specific data. | |
| | 0.5 M EDTA | Adverse symptoms may include the following: pain or irritation watering redness | |
| | Streptavidin Resin | No specific data. | |
| | Streptavidin Binding Buffer | No specific data. | |
| | Streptavidin Elution Buffer | No specific data. | |
| | Streptavidin Supernatant Supplement | No specific data. | |
| | MS-Grade Calmodulin Resin | No specific data. | |
| | Calmodulin Binding Buffer | No specific data. | |
| | Calmodulin Elution Buffer | No specific data. | |
| | Inhalation | : β-Mercaptoethanol | Adverse symptoms may include the following: respiratory tract irritation coughing |
| | | Lysis Buffer | No specific data. |
| 0.5 M EDTA | | No specific data. | |
| Streptavidin Resin | | No specific data. | |
| Streptavidin Binding Buffer | | No specific data. | |
| Streptavidin Elution Buffer | | No specific data. | |
| Streptavidin Supernatant Supplement | | Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations | |
| MS-Grade Calmodulin Resin | | No specific data. | |
| Calmodulin Binding Buffer | | No specific data. | |
| Calmodulin Elution Buffer | | No specific data. | |
| Skin contact | | : β-Mercaptoethanol | Adverse symptoms may include the following: pain or irritation redness blistering may occur |
| | | Lysis Buffer | No specific data. |
| | 0.5 M EDTA | No specific data. | |
| | Streptavidin Resin | No specific data. | |
| | Streptavidin Binding Buffer | No specific data. | |
| | Streptavidin Elution Buffer | No specific data. | |
| | Streptavidin Supernatant Supplement | Adverse symptoms may include the following: reduced foetal weight | |
| | MS-Grade Calmodulin Resin | No specific data. | |
| | Calmodulin Binding Buffer | No specific data. | |
| | Calmodulin Elution Buffer | No specific data. | |

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| | | |
|------------------|-------------------------------------|---|
| | | increase in foetal deaths skeletal malformations |
| | MS-Grade Calmodulin Resin | No specific data. |
| | Calmodulin Binding Buffer | No specific data. |
| | Calmodulin Elution Buffer | No specific data. |
| Ingestion | : β -Mercaptoethanol | Adverse symptoms may include the following: stomach pains |
| | Lysis Buffer | No specific data. |
| | 0.5 M EDTA | No specific data. |
| | Streptavidin Resin | No specific data. |
| | Streptavidin Binding Buffer | No specific data. |
| | Streptavidin Elution Buffer | No specific data. |
| | Streptavidin Supernatant Supplement | Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations |
| | MS-Grade Calmodulin Resin | No specific data. |
| | Calmodulin Binding Buffer | No specific data. |
| | Calmodulin Elution Buffer | No specific data. |

4.3 Indication of any immediate medical attention and special treatment needed

| | | |
|----------------------------|-------------------------------------|---|
| Notes to physician | : β -Mercaptoethanol | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Lysis Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | 0.5 M EDTA | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| | Streptavidin Resin | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Streptavidin Binding Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Streptavidin Elution Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Streptavidin Supernatant Supplement | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | MS-Grade Calmodulin Resin | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Calmodulin Binding Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Calmodulin Elution Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | : β -Mercaptoethanol | No specific treatment. |
| | Lysis Buffer | No specific treatment. |
| | 0.5 M EDTA | No specific treatment. |
| | Streptavidin Resin | No specific treatment. |
| | Streptavidin Binding Buffer | No specific treatment. |
| | Streptavidin Elution Buffer | No specific treatment. |
| | Streptavidin Supernatant Supplement | No specific treatment. |
| | MS-Grade Calmodulin Resin | No specific treatment. |

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| | |
|---------------------------|------------------------|
| Calmodulin Binding Buffer | No specific treatment. |
| Calmodulin Elution Buffer | No specific treatment. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

| | | | |
|-------------------------------------|---------------------------------------|--|-------------|
| Suitable extinguishing media | : β-Mercaptoethanol | Use an extinguishing agent suitable for the surrounding fire. | |
| | Lysis Buffer | Use an extinguishing agent suitable for the surrounding fire. | |
| | 0.5 M EDTA | Use an extinguishing agent suitable for the surrounding fire. | |
| | Streptavidin Resin | Use dry chemical, CO ₂ , water spray (fog) or foam. | |
| | Streptavidin Binding Buffer | Use an extinguishing agent suitable for the surrounding fire. | |
| | Streptavidin Elution Buffer | Use an extinguishing agent suitable for the surrounding fire. | |
| | Streptavidin Supernatant Supplement | Use an extinguishing agent suitable for the surrounding fire. | |
| | MS-Grade Calmodulin Resin | Use dry chemical, CO ₂ , water spray (fog) or foam. | |
| | Calmodulin Binding Buffer | Use an extinguishing agent suitable for the surrounding fire. | |
| | Calmodulin Elution Buffer | Use an extinguishing agent suitable for the surrounding fire. | |
| | Unsuitable extinguishing media | : β-Mercaptoethanol | None known. |
| | | Lysis Buffer | None known. |
| | | 0.5 M EDTA | None known. |
| Streptavidin Resin | | Do not use water jet. | |
| Streptavidin Binding Buffer | | None known. | |
| Streptavidin Elution Buffer | | None known. | |
| Streptavidin Supernatant Supplement | | None known. | |
| MS-Grade Calmodulin Resin | | Do not use water jet. | |
| Calmodulin Binding Buffer | | None known. | |
| Calmodulin Elution Buffer | | None known. | |

5.2 Special hazards arising from the substance or mixture

| | | |
|--|-------------------------------------|---|
| Hazards from the substance or mixture | : β-Mercaptoethanol | In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
| | Lysis Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. |
| | 0.5 M EDTA | In a fire or if heated, a pressure increase will occur and the container may burst. |
| | Streptavidin Resin | Flammable liquid and vapour. 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. |
| | Streptavidin Binding Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. |
| | Streptavidin Elution Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. |
| | Streptavidin Supernatant Supplement | In a fire or if heated, a pressure increase will occur and the container may burst. |
| | MS-Grade Calmodulin Resin | Flammable liquid and vapour. 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 |

SECTION 5: Firefighting measures

| | | |
|--------------------------------------|-------------------------------------|---|
| | Calmodulin Binding Buffer | of a subsequent explosion. In a fire or if heated, a pressure increase will occur and the container may burst. |
| | Calmodulin Elution Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. |
| Hazardous combustion products | : β -Mercaptoethanol | Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides |
| | Lysis Buffer | No specific data. |
| | 0.5 M EDTA | Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides |
| | Streptavidin Resin | Decomposition products may include the following materials: carbon dioxide carbon monoxide |
| | Streptavidin Binding Buffer | No specific data. |
| | Streptavidin Elution Buffer | No specific data. |
| | Streptavidin Supernatant Supplement | Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides |
| | MS-Grade Calmodulin Resin | Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides |
| | Calmodulin Binding Buffer | No specific data. |
| | Calmodulin Elution Buffer | No specific data. |

5.3 Advice for firefighters

| | | |
|--|-------------------------------------|--|
| Special precautions for fire-fighters | : β -Mercaptoethanol | 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. |
| | Lysis Buffer | 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. |
| | 0.5 M EDTA | 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. |
| | Streptavidin Resin | 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. |
| | Streptavidin Binding Buffer | 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. |
| | Streptavidin Elution Buffer | 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. |
| | Streptavidin Supernatant Supplement | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be |

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Special protective equipment for fire-fighters

| | |
|-------------------------------------|--|
| MS-Grade Calmodulin Resin | taken involving any personal risk or without suitable training. 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. |
| Calmodulin Binding Buffer | 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. |
| Calmodulin Elution Buffer | 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. |
| : β-Mercaptoethanol | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Lysis Buffer | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| 0.5 M EDTA | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Streptavidin Resin | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Streptavidin Binding Buffer | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Streptavidin Elution Buffer | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Streptavidin Supernatant Supplement | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| MS-Grade Calmodulin Resin | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Calmodulin Binding | Fire-fighters should wear appropriate protective equipment |

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| | |
|---------------------------|---|
| Buffer | and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| Calmodulin Elution Buffer | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

| | | |
|------------------------------------|-------------------------------------|---|
| For non-emergency personnel | : β -Mercaptoethanol | 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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | Lysis 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. |
| | 0.5 M EDTA | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | Streptavidin Resin | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | Streptavidin Binding 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. |
| | Streptavidin Elution 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. |
| | Streptavidin Supernatant Supplement | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | MS-Grade Calmodulin Resin | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. |

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SECTION 6: Accidental release measures

For emergency responders

| | | |
|--|-------------------------------------|--|
| | | Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | Calmodulin Binding 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 spilled material. Put on appropriate personal protective equipment. |
| | Calmodulin Elution 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 spilled material. Put on appropriate personal protective equipment. |
| | : β -Mercaptoethanol | 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". |
| | Lysis Buffer | 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". |
| | 0.5 M EDTA | 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". |
| | Streptavidin Resin | 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". |
| | Streptavidin Binding Buffer | 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". |
| | Streptavidin Elution Buffer | 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". |
| | Streptavidin Supernatant Supplement | 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". |
| | MS-Grade Calmodulin Resin | 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". |
| | Calmodulin Binding Buffer | 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". |
| | Calmodulin Elution Buffer | 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". |

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SECTION 6: Accidental release measures

| | | |
|--------------------------------------|-------------------------------------|--|
| 6.2 Environmental precautions | : β -Mercaptoethanol | 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage. |
| | Lysis 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). |
| | 0.5 M EDTA | 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). |
| | Streptavidin Resin | 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). |
| | Streptavidin Binding 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). |
| | Streptavidin Elution 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). |
| | Streptavidin Supernatant Supplement | 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). |
| | MS-Grade Calmodulin Resin | 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). |
| | Calmodulin Binding 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). |
| | Calmodulin Elution 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). |

6.3 Methods and material for containment and cleaning up

| | | |
|--------------------------------|----------------------------|---|
| Methods for cleaning up | : β -Mercaptoethanol | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| | Lysis Buffer | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| | 0.5 M EDTA | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| | Streptavidin Resin | Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. |

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SECTION 6: Accidental release measures

| | |
|-------------------------------------|--|
| | Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| Streptavidin Binding Buffer | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| Streptavidin Elution Buffer | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| Streptavidin Supernatant Supplement | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| MS-Grade Calmodulin Resin | 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, or 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. |
| Calmodulin Binding Buffer | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |
| Calmodulin Elution Buffer | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or 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. |

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

| | | |
|----------------------------|----------------------------|---|
| Protective measures | : β -Mercaptoethanol | Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| Lysis Buffer | | Put on appropriate personal protective equipment (see Section 8). |
| 0.5 M EDTA | | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be |

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SECTION 7: Handling and storage


| | |
|--|---|
| Streptavidin Resin | hazardous. Do not reuse container. Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| Streptavidin Binding Buffer | Put on appropriate personal protective equipment (see Section 8). |
| Streptavidin Elution Buffer | Put on appropriate personal protective equipment (see Section 8). |
| Streptavidin Supernatant Supplement | Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| MS-Grade Calmodulin Resin | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| Calmodulin Binding Buffer | Put on appropriate personal protective equipment (see Section 8). |
| Calmodulin Elution Buffer | Put on appropriate personal protective equipment (see Section 8). |
| Advice on general occupational hygiene : β -Mercaptoethanol | 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. |
| Lysis 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 |

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| | |
|-------------------------------------|---|
| 0.5 M EDTA | Section 8 for additional information on hygiene measures. 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. |
| Streptavidin Resin | 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. |
| Streptavidin Binding 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. |
| Streptavidin Elution 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. |
| Streptavidin Supernatant Supplement | 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. |
| MS-Grade Calmodulin Resin | 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. |
| Calmodulin Binding 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. |
| Calmodulin Elution 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. |

7.2 Conditions for safe storage, including any incompatibilities

| | | |
|----------------|--|--|
| Storage | :  -Mercaptoethanol | 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. Store locked up. 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

| | |
|-------------------------------------|---|
| Lysis 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. |
| 0.5 M EDTA | 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. |
| Streptavidin Resin | 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. Eliminate all ignition sources. Separate from oxidizing 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. |
| Streptavidin Binding 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. |
| Streptavidin Elution 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. |
| Streptavidin Supernatant Supplement | 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. Store locked up. 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. |

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| | |
|---------------------------|---|
| MS-Grade Calmodulin Resin | 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. Eliminate all ignition sources. Separate from oxidizing 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. |
| Calmodulin Binding 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. |
| Calmodulin Elution 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. |

Danger criteria

| Category | Notification and MAPP threshold | Safety report threshold |
|---|---------------------------------|-------------------------|
| β-Mercaptoethanol H2 E2 | 50 200 | 200 500 |
| Streptavidin Resin P5c | 5000 | 50000 |
| MS-Grade Calmodulin Resin P5c | 5000 | 50000 |

7.3 Specific end use(s)

| Recommendations | |
|-------------------------------------|---|
| β-Mercaptoethanol | Industrial applications, Professional applications. |
| Lysis Buffer | Industrial applications, Professional applications. |
| 0.5 M EDTA | Industrial applications, Professional applications. |
| Streptavidin Resin | Industrial applications, Professional applications. |
| Streptavidin Binding Buffer | Industrial applications, Professional applications. |
| Streptavidin Elution Buffer | Industrial applications, Professional applications. |
| Streptavidin Supernatant Supplement | Industrial applications, Professional applications. |
| MS-Grade Calmodulin Resin | Industrial applications, Professional applications. |
| Calmodulin Binding | Industrial applications, Professional applications. |

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| | | |
|---|-------------------------------------|---|
| | Buffer | |
| | Calmodulin Elution Buffer | Industrial applications, Professional applications. |
| Industrial sector specific solutions | : β -Mercaptoethanol | Not applicable. |
| | Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Resin | Not applicable. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | Not applicable. |
| | MS-Grade Calmodulin Resin | Not applicable. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|---|---|
| Streptavidin Resin Ethanol | EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 1000 ppm 8 hours. TWA: 1920 mg/m ³ 8 hours. |
| MS-Grade Calmodulin Resin Ethanol | EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 1000 ppm 8 hours. TWA: 1920 mg/m ³ 8 hours. |

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

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27/51

SECTION 8: Exposure controls/personal protection

- 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. Contaminated work clothing should not be allowed out of the workplace. 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- 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.
- 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | | | |
|-----------------------|---|-------------------------------------|---------|
| Physical state | : | β-Mercaptoethanol | Liquid. |
| | | Lysis Buffer | Liquid. |
| | | 0.5 M EDTA | Liquid. |
| | | Streptavidin Resin | Liquid. |
| | | Streptavidin Binding Buffer | Liquid. |
| | | Streptavidin Elution Buffer | Liquid. |
| | | Streptavidin Supernatant Supplement | Liquid. |
| | | MS-Grade Calmodulin Resin | Liquid. |
| | | Calmodulin Binding Buffer | Liquid. |
| | | Calmodulin Elution Buffer | Liquid. |

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SECTION 9: Physical and chemical properties

| | | | | |
|------------------------|--------------|-------------------------------------|--------------------|-----------------|
| Colour | : | β-Mercaptoethanol | Colourless. | |
| | | Lysis Buffer | Not available. | |
| | | 0.5 M EDTA | Not available. | |
| | | Streptavidin Resin | Not available. | |
| | | Streptavidin Binding Buffer | Not available. | |
| | | Streptavidin Elution Buffer | Not available. | |
| | | Streptavidin Supernatant Supplement | Not available. | |
| | | MS-Grade Calmodulin Resin | Not available. | |
| | | Calmodulin Binding Buffer | Not available. | |
| | | Calmodulin Elution Buffer | Not available. | |
| | Odour | : | β-Mercaptoethanol | Characteristic. |
| | | | Lysis Buffer | Not available. |
| | | | 0.5 M EDTA | Not available. |
| | | | Streptavidin Resin | Not available. |
| | | Streptavidin Binding Buffer | Not available. | |
| | | Streptavidin Elution Buffer | Not available. | |
| | | Streptavidin Supernatant Supplement | Not available. | |
| | | MS-Grade Calmodulin Resin | Not available. | |
| | | Calmodulin Binding Buffer | Not available. | |
| | | Calmodulin Elution Buffer | Not available. | |
| Odour threshold | | : | β-Mercaptoethanol | Not available. |
| | | | Lysis Buffer | Not available. |
| | | | 0.5 M EDTA | Not available. |
| | | | Streptavidin Resin | Not available. |
| | | Streptavidin Binding Buffer | Not available. | |
| | | Streptavidin Elution Buffer | Not available. | |
| | | Streptavidin Supernatant Supplement | Not available. | |
| | | MS-Grade Calmodulin Resin | Not available. | |
| | | Calmodulin Binding Buffer | Not available. | |
| | | Calmodulin Elution Buffer | Not available. | |
| | pH | : | β-Mercaptoethanol | Not available. |
| | | | Lysis Buffer | 8 |
| | | | 0.5 M EDTA | 8 |
| | | | Streptavidin Resin | 7.5 |
| | | Streptavidin Binding Buffer | 8 | |
| | | Streptavidin Elution Buffer | 8 | |
| | | Streptavidin Supernatant | Not available. | |

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SECTION 9: Physical and chemical properties

| | | |
|--|----------------------------|------------------------------------|
| | Supplement | |
| | MS-Grade Calmodulin | 7.5 |
| | Resin | |
| | Calmodulin Binding | 8 |
| | Buffer | |
| | Calmodulin Elution | 8 |
| | Buffer | |
| Melting point/freezing point | : β -Mercaptoethanol | -100°C |
| | Lysis Buffer | 0°C |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding | 0°C |
| | Buffer | |
| | Streptavidin Elution | 0°C |
| | Buffer | |
| | Streptavidin | 0°C |
| | Supernatant | |
| | Supplement | |
| | MS-Grade Calmodulin | Not available. |
| | Resin | |
| | Calmodulin Binding | 0°C |
| | Buffer | |
| | Calmodulin Elution | 0°C |
| | Buffer | |
| Initial boiling point and boiling range | : β -Mercaptoethanol | 157°C |
| | Lysis Buffer | 100°C |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding | 100°C |
| | Buffer | |
| | Streptavidin Elution | 100°C |
| | Buffer | |
| | Streptavidin | 100°C |
| | Supernatant | |
| | Supplement | |
| | MS-Grade Calmodulin | Not available. |
| | Resin | |
| | Calmodulin Binding | 100°C |
| | Buffer | |
| | Calmodulin Elution | 100°C |
| | Buffer | |
| Flash point | : β -Mercaptoethanol | Closed cup: 74°C Open cup: 74°C |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Closed cup: 37.8 to 61°C |
| | Streptavidin Binding | Not available. |
| | Buffer | |
| | Streptavidin Elution | Not available. |
| | Buffer | |
| | Streptavidin | Not available. |
| | Supernatant | |
| | Supplement | |
| | MS-Grade Calmodulin | Closed cup: 37.8 to 61°C |
| | Resin | |
| | Calmodulin Binding | Not available. |
| | Buffer | |
| | Calmodulin Elution | Not available. |
| | Buffer | |

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| | | | |
|---|-------------------------------------|---------------------|-----------------------------|
| Evaporation rate | : β-Mercaptoethanol | Not available. | |
| | Lysis Buffer | Not available. | |
| | 0.5 M EDTA | Not available. | |
| | Streptavidin Resin | Not available. | |
| | Streptavidin Binding Buffer | Not available. | |
| | Streptavidin Elution Buffer | Not available. | |
| | Streptavidin Supernatant Supplement | Not available. | |
| | MS-Grade Calmodulin Resin | Not available. | |
| | Calmodulin Binding Buffer | Not available. | |
| | Calmodulin Elution Buffer | Not available. | |
| | Flammability (solid, gas) | : β-Mercaptoethanol | Not applicable. |
| | | Lysis Buffer | Not applicable. |
| | | 0.5 M EDTA | Not applicable. |
| | | Streptavidin Resin | Not applicable. |
| Streptavidin Binding Buffer | | Not applicable. | |
| Streptavidin Elution Buffer | | Not applicable. | |
| Streptavidin Supernatant Supplement | | Not applicable. | |
| MS-Grade Calmodulin Resin | | Not applicable. | |
| Calmodulin Binding Buffer | | Not applicable. | |
| Calmodulin Elution Buffer | | Not applicable. | |
| Upper/lower flammability or explosive limits | | : β-Mercaptoethanol | Lower: 2.3% Upper: 18% |
| | | Lysis Buffer | Not available. |
| | | 0.5 M EDTA | Not available. |
| | | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. | |
| | Streptavidin Elution Buffer | Not available. | |
| | Streptavidin Supernatant Supplement | Not available. | |
| | MS-Grade Calmodulin Resin | Not available. | |
| | Calmodulin Binding Buffer | Not available. | |
| | Calmodulin Elution Buffer | Not available. | |
| | Vapour pressure | : β-Mercaptoethanol | 0.13 kPa [room temperature] |
| | | Lysis Buffer | Not available. |
| | | 0.5 M EDTA | Not available. |
| | | Streptavidin Resin | Not available. |
| Streptavidin Binding Buffer | | Not available. | |
| Streptavidin Elution Buffer | | Not available. | |
| Streptavidin | | Not available. | |

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SECTION 9: Physical and chemical properties

| | | |
|-------------------------|-------------------------------------|--|
| | Supernatant Supplement | |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Vapour density | : β -Mercaptoethanol | 2.7 [Air = 1] |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Relative density | : β -Mercaptoethanol | 1.1 |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Solubility(ies) | : β -Mercaptoethanol | Easily soluble in the following materials: cold water and hot water. |
| | Lysis Buffer | Easily soluble in the following materials: cold water and hot water. |
| | 0.5 M EDTA | Soluble in the following materials: cold water and hot water. |
| | Streptavidin Resin | Soluble in the following materials: cold water and hot water. |
| | Streptavidin Binding Buffer | Easily soluble in the following materials: cold water and hot water. |
| | Streptavidin Elution Buffer | Easily soluble in the following materials: cold water and hot water. |
| | Streptavidin Supernatant Supplement | Easily soluble in the following materials: cold water and hot water. |
| | MS-Grade Calmodulin Resin | Soluble in the following materials: cold water and hot water. |
| | Calmodulin Binding Buffer | Easily soluble in the following materials: cold water and hot water. |

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SECTION 9: Physical and chemical properties

| | | |
|---|-------------------------------------|--|
| | Calmodulin Elution Buffer | Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/water | : β-Mercaptoethanol | -0.056 |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Auto-ignition temperature | : β-Mercaptoethanol | 295°C |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Decomposition temperature | : β-Mercaptoethanol | Not available. |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Viscosity | : β-Mercaptoethanol | Dynamic (room temperature): 3.43 mPa·s |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |

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SECTION 9: Physical and chemical properties

| | | |
|-----------------------------|-------------------------------------|----------------|
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Explosive properties | : β -Mercaptoethanol | Not available. |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |
| Oxidising properties | : β -Mercaptoethanol | Not available. |
| | Lysis Buffer | Not available. |
| | 0.5 M EDTA | Not available. |
| | Streptavidin Resin | Not available. |
| | Streptavidin Binding Buffer | Not available. |
| | Streptavidin Elution Buffer | Not available. |
| | Streptavidin Supernatant Supplement | Not available. |
| | MS-Grade Calmodulin Resin | Not available. |
| | Calmodulin Binding Buffer | Not available. |
| | Calmodulin Elution Buffer | Not available. |

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

| | | |
|------------------------|-----------------------------|--|
| 10.1 Reactivity | : β -Mercaptoethanol | No specific test data related to reactivity available for this product or its ingredients. |
| | Lysis Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| | 0.5 M EDTA | No specific test data related to reactivity available for this product or its ingredients. |
| | Streptavidin Resin | No specific test data related to reactivity available for this product or its ingredients. |
| | Streptavidin Binding Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| | Streptavidin Elution Buffer | No specific test data related to reactivity available for this product or its ingredients. |

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SECTION 10: Stability and reactivity

| | |
|-------------------------------------|--|
| Streptavidin Supernatant Supplement | No specific test data related to reactivity available for this product or its ingredients. |
| MS-Grade Calmodulin Resin | No specific test data related to reactivity available for this product or its ingredients. |
| Calmodulin Binding Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| Calmodulin Elution Buffer | No specific test data related to reactivity available for this product or its ingredients. |

| | | |
|--------------------------------|-------------------------------------|------------------------|
| 10.2 Chemical stability | : β-Mercaptoethanol | The product is stable. |
| | Lysis Buffer | The product is stable. |
| | 0.5 M EDTA | The product is stable. |
| | Streptavidin Resin | The product is stable. |
| | Streptavidin Binding Buffer | The product is stable. |
| | Streptavidin Elution Buffer | The product is stable. |
| | Streptavidin Supernatant Supplement | The product is stable. |
| | MS-Grade Calmodulin Resin | The product is stable. |
| | Calmodulin Binding Buffer | The product is stable. |
| | Calmodulin Elution Buffer | The product is stable. |

| | | |
|--|-------------------------------------|---|
| 10.3 Possibility of hazardous reactions | : β-Mercaptoethanol | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Lysis Buffer | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | 0.5 M EDTA | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Streptavidin Resin | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Streptavidin Binding Buffer | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Streptavidin Elution Buffer | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Streptavidin Supernatant Supplement | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | MS-Grade Calmodulin Resin | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Calmodulin Binding Buffer | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | Calmodulin Elution Buffer | Under normal conditions of storage and use, hazardous reactions will not occur. |

| | | |
|---------------------------------|-------------------------------------|---|
| 10.4 Conditions to avoid | : β-Mercaptoethanol | No specific data. |
| | Lysis Buffer | No specific data. |
| | 0.5 M EDTA | No specific data. |
| | Streptavidin Resin | Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| | Streptavidin Binding Buffer | No specific data. |
| | Streptavidin Elution Buffer | No specific data. |
| | Streptavidin Supernatant Supplement | No specific data. |
| | MS-Grade Calmodulin Resin | Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |

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SECTION 10: Stability and reactivity

Calmodulin Binding Buffer No specific data.
Calmodulin Elution Buffer No specific data.

10.5 Incompatible materials

: β -Mercaptoethanol May react or be incompatible with oxidising materials.
Lysis Buffer May react or be incompatible with oxidising materials.
0.5 M EDTA May react or be incompatible with oxidising materials.
Streptavidin Resin Reactive or incompatible with the following materials:
oxidizing materials
Streptavidin Binding Buffer May react or be incompatible with oxidising materials.
Streptavidin Elution Buffer May react or be incompatible with oxidising materials.
Streptavidin Supernatant Supplement May react or be incompatible with oxidising materials.
MS-Grade Calmodulin Resin Reactive or incompatible with the following materials:
oxidizing materials
Calmodulin Binding Buffer May react or be incompatible with oxidising materials.
Calmodulin Elution Buffer May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products

: β -Mercaptoethanol Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Lysis Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
0.5 M EDTA Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Streptavidin Resin Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Streptavidin Binding Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Streptavidin Elution Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Streptavidin Supernatant Supplement Under normal conditions of storage and use, hazardous decomposition products should not be produced.
MS-Grade Calmodulin Resin Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Calmodulin Binding Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Calmodulin Elution Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-----------|---------|------------|----------|
| β -Mercaptoethanol 2-Mercaptoethanol | LD50 Oral | Rat | 244 mg/kg | - |
| Lysis Buffer Polyoxyethylene octyl phenyl ether | LD50 Oral | Rat | 1800 mg/kg | - |
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | LD50 Oral | Rat | 1800 mg/kg | - |

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SECTION 11: Toxicological information

| | | | | |
|---|------------------------|------------|---------------------|--------|
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | LD50 Oral | Rat | 1800 mg/kg | - |
| Streptavidin Supernatant Supplement calcium chloride Imidazole | LD50 Oral LD50 Oral | Rat Rat | 1 g/kg 220 mg/kg | - - |
| MS-Grade Calmodulin Resin Sodium chloride | LD50 Oral | Rat | 3000 mg/kg | - |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | LD50 Oral | Rat | 1800 mg/kg | - |
| Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether | LD50 Oral | Rat | 1800 mg/kg | - |

Acute toxicity estimates

Not available.

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--|--------------------------|---------|-------|--------------------------|-------------|
| β-Mercaptoethanol 2-Mercaptoethanol | Eyes - Severe irritant | Rabbit | - | 2 milligrams | - |
| Lysis Buffer Polyoxyethylene octyl phenyl ether | Eyes - Moderate irritant | Rabbit | - | 24 hours 10 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | Eyes - Moderate irritant | Rabbit | - | 24 hours 10 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | Eyes - Moderate irritant | Rabbit | - | 24 hours 10 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |
| MS-Grade Calmodulin Resin Sodium chloride | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 10 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | Eyes - Moderate irritant | Rabbit | - | 24 hours 10 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |

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| | | | | | |
|--|--------------------------|--------|---|--------------------------|---|
| Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether | Eyes - Moderate irritant | Rabbit | - | 24 hours 10 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|---|------------|-------------------|------------------------------|
| β-Mercaptoethanol 2-Mercaptoethanol | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

| | |
|-------------------------------------|--|
| β-Mercaptoethanol | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| Lysis Buffer | Not available. |
| 0.5 M EDTA | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| Streptavidin Resin | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| Streptavidin Binding Buffer | Not available. |
| Streptavidin Elution Buffer | Not available. |
| Streptavidin Supernatant Supplement | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| MS-Grade Calmodulin Resin | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| Calmodulin Binding Buffer | Not available. |
| Calmodulin Elution Buffer | Not available. |

Potential acute health effects

Inhalation

| | |
|-------------------------------------|---|
| β-Mercaptoethanol | Fatal if inhaled. May cause respiratory irritation. |
| Lysis Buffer | No known significant effects or critical hazards. |
| 0.5 M EDTA | No known significant effects or critical hazards. |
| Streptavidin Resin | No known significant effects or critical hazards. |
| Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| Streptavidin Elution Buffer | No known significant effects or critical hazards. |
| Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| Calmodulin Elution Buffer | No known significant effects or critical hazards. |

Ingestion

| | |
|-----------------------------|---|
| β-Mercaptoethanol | Toxic if swallowed. |
| Lysis Buffer | No known significant effects or critical hazards. |
| 0.5 M EDTA | No known significant effects or critical hazards. |
| Streptavidin Resin | No known significant effects or critical hazards. |
| Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| Streptavidin Elution Buffer | No known significant effects or critical hazards. |

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SECTION 11: Toxicological information

| | | |
|---------------------|-------------------------------------|--|
| | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| | Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| | Calmodulin Elution Buffer | No known significant effects or critical hazards. |
| Skin contact | : β -Mercaptoethanol | Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 0.5 M EDTA | No known significant effects or critical hazards. |
| | Streptavidin Resin | No known significant effects or critical hazards. |
| | Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| | Streptavidin Elution Buffer | No known significant effects or critical hazards. |
| | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| | Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| | Calmodulin Elution Buffer | No known significant effects or critical hazards. |
| Eye contact | : β -Mercaptoethanol | Causes serious eye damage. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 0.5 M EDTA | Causes serious eye irritation. |
| | Streptavidin Resin | No known significant effects or critical hazards. |
| | Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| | Streptavidin Elution Buffer | No known significant effects or critical hazards. |
| | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| | Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| | Calmodulin Elution Buffer | No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | | |
|-------------------|-------------------------------------|---|
| Inhalation | : β -Mercaptoethanol | Adverse symptoms may include the following: respiratory tract irritation coughing |
| | Lysis Buffer | No specific data. |
| | 0.5 M EDTA | No specific data. |
| | Streptavidin Resin | No specific data. |
| | Streptavidin Binding Buffer | No specific data. |
| | Streptavidin Elution Buffer | No specific data. |
| | Streptavidin Supernatant Supplement | Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations |
| | MS-Grade Calmodulin Resin | No specific data. |
| | Calmodulin Binding Buffer | No specific data. |
| | Calmodulin Elution Buffer | No specific data. |

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SECTION 11: Toxicological information

| | | | |
|---------------------|---|-------------------------------------|---|
| Ingestion | : | β-Mercaptoethanol | Adverse symptoms may include the following: stomach pains |
| | | Lysis Buffer | No specific data. |
| | | 0.5 M EDTA | No specific data. |
| | | Streptavidin Resin | No specific data. |
| | | Streptavidin Binding Buffer | No specific data. |
| | | Streptavidin Elution Buffer | No specific data. |
| | | Streptavidin Supernatant Supplement | Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations |
| | | MS-Grade Calmodulin Resin | No specific data. |
| | | Calmodulin Binding Buffer | No specific data. |
| | | Calmodulin Elution Buffer | No specific data. |
| Skin contact | : | β-Mercaptoethanol | Adverse symptoms may include the following: pain or irritation redness blistering may occur |
| | | Lysis Buffer | No specific data. |
| | | 0.5 M EDTA | No specific data. |
| | | Streptavidin Resin | No specific data. |
| | | Streptavidin Binding Buffer | No specific data. |
| | | Streptavidin Elution Buffer | No specific data. |
| | | Streptavidin Supernatant Supplement | Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations |
| | | MS-Grade Calmodulin Resin | No specific data. |
| | | Calmodulin Binding Buffer | No specific data. |
| | | Calmodulin Elution Buffer | No specific data. |
| Eye contact | : | β-Mercaptoethanol | Adverse symptoms may include the following: pain watering redness |
| | | Lysis Buffer | No specific data. |
| | | 0.5 M EDTA | Adverse symptoms may include the following: pain or irritation watering redness |
| | | Streptavidin Resin | No specific data. |
| | | Streptavidin Binding Buffer | No specific data. |
| | | Streptavidin Elution Buffer | No specific data. |
| | | Streptavidin Supernatant Supplement | No specific data. |
| | | MS-Grade Calmodulin Resin | No specific data. |
| | | Calmodulin Binding Buffer | No specific data. |
| | | Calmodulin Elution Buffer | No specific data. |

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SECTION 11: Toxicological information

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| | | |
|------------------------|-------------------------------------|---|
| General | : β -Mercaptoethanol | Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 0.5 M EDTA | No known significant effects or critical hazards. |
| | Streptavidin Resin | No known significant effects or critical hazards. |
| | Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| | Streptavidin Elution Buffer | No known significant effects or critical hazards. |
| | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| | Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| | Calmodulin Elution Buffer | No known significant effects or critical hazards. |
| Carcinogenicity | : β -Mercaptoethanol | No known significant effects or critical hazards. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 0.5 M EDTA | No known significant effects or critical hazards. |
| | Streptavidin Resin | No known significant effects or critical hazards. |
| | Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| | Streptavidin Elution Buffer | No known significant effects or critical hazards. |
| | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| | Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| | Calmodulin Elution Buffer | No known significant effects or critical hazards. |
| Mutagenicity | : β -Mercaptoethanol | No known significant effects or critical hazards. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 0.5 M EDTA | No known significant effects or critical hazards. |
| | Streptavidin Resin | No known significant effects or critical hazards. |
| | Streptavidin Binding Buffer | No known significant effects or critical hazards. |
| | Streptavidin Elution Buffer | No known significant effects or critical hazards. |
| | Streptavidin Supernatant Supplement | No known significant effects or critical hazards. |
| | MS-Grade Calmodulin Resin | No known significant effects or critical hazards. |
| | Calmodulin Binding Buffer | No known significant effects or critical hazards. |
| | Calmodulin Elution Buffer | No known significant effects or critical hazards. |

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| | | |
|------------------------------|---|--|
| Teratogenicity | : β-Mercaptoethanol Lysis Buffer 0.5 M EDTA Streptavidin Resin Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin Calmodulin Binding Buffer Calmodulin Elution Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May damage the unborn child. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : β-Mercaptoethanol Lysis Buffer 0.5 M EDTA Streptavidin Resin Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin Calmodulin Binding Buffer Calmodulin Elution Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Fertility effects | : β-Mercaptoethanol Lysis Buffer 0.5 M EDTA Streptavidin Resin Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin Calmodulin Binding Buffer Calmodulin Elution Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|---|------------------------------------|--|----------|
| Lysis Buffer Polyoxyethylene octyl phenyl ether | Acute LC50 5.85 mg/l Fresh water | Crustaceans - Ceriodaphnia rigaudi - Neonate | 48 hours |
| | Acute LC50 11.2 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4500 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| 0.5 M EDTA Edetic acid | Acute EC50 113000 µg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 41000 µg/l Fresh water | Fish - Lepomis macrochirus | 96 hours |

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| | | | |
|--|---|--|--------------------------------|
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | Acute LC50 5.85 mg/l Fresh water | Crustaceans - Ceriodaphnia rigaudi - Neonate | 48 hours |
| | Acute LC50 11.2 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4500 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | Acute LC50 5.85 mg/l Fresh water | Crustaceans - Ceriodaphnia rigaudi - Neonate | 48 hours |
| | Acute LC50 11.2 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4500 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Streptavidin Supernatant Supplement calcium chloride | Acute EC50 3130000 µg/l Fresh water | Algae - Navicula seminulum | 96 hours |
| | Acute EC50 464000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 270 mg/l Marine water | Crustaceans - Americamysis bahia | 48 hours |
| | Acute LC50 2110 mg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| MS-Grade Calmodulin Resin Sodium chloride | Acute EC50 4.74 g/L Fresh water | Algae - Chlamydomonas reinhardtii | 96 hours |
| | Acute EC50 519.6 mg/l Fresh water | Crustaceans - Cypris subglobosa | 48 hours |
| | Acute EC50 402600 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute IC50 6.87 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 1000000 µg/l Fresh water | Fish - Morone saxatilis - Larvae | 96 hours |
| | Chronic LC10 781 mg/l Fresh water | Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) | 3 weeks |
| | Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water | Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult | 96 hours 21 days 8 weeks |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | Acute LC50 5.85 mg/l Fresh water | Crustaceans - Ceriodaphnia rigaudi - Neonate | 48 hours |
| | Acute LC50 11.2 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4500 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether | Acute LC50 5.85 mg/l Fresh water | Crustaceans - Ceriodaphnia rigaudi - Neonate | 48 hours |
| | Acute LC50 11.2 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4500 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |

12.2 Persistence and degradability

Not available.

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SECTION 12: Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| Lysis Buffer Polyoxyethylene octyl phenyl ether | - | - | Readily |
| 0.5 M EDTA Edetic acid | - | - | Not readily |
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | - | - | Readily |
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | - | - | Readily |
| Streptavidin Supernatant Supplement calcium chloride | - | - | Readily |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | - | - | Readily |
| Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether | - | - | Readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--|--------------------|-----|-----------|
| β-Mercaptoethanol 2-Mercaptoethanol | -0.056 | - | low |
| Lysis Buffer Polyoxyethylene octyl phenyl ether | 4.86 | - | high |
| 0.5 M EDTA Edetic acid | -3.86 | 1.8 | low |
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | 4.86 | - | high |
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | 4.86 | - | high |
| Streptavidin Supernatant Supplement calcium chloride | <3 | - | low |
| Imidazole | -0.02 | - | low |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | 4.86 | - | high |

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SECTION 12: Ecological information

| | | | |
|---|------|---|------|
| Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether | 4.86 | - | high |
|---|------|---|------|

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : 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.


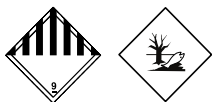

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| | ADR/RID | IMDG | IATA |
|---------------------------------|--|--|--|
| 14.1 UN number | UN3316 | UN3316 | UN3316 |
| 14.2 UN proper shipping name | CHEMICAL KIT | CHEMICAL KIT | Chemical kit |
| 14.3 Transport hazard class(es) | 9  | 9  | 9  |
| 14.4 Packing group | II | II | II |
| | | | |

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SECTION 14: Transport information

| | | | |
|-----------------------------------|------|------|--|
| 14.5 Environmental hazards | Yes. | Yes. | Yes. The environmentally hazardous substance mark is not required. |
|-----------------------------------|------|------|--|

Additional information

Remarks: Excepted Quantity

- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 90
Limited quantity See SP 251
Special provisions 251, 340
Tunnel code (E)
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-A, _S-P_
Special provisions 251, 340
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.
Special provisions A44, A163

14.6 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.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

| Ingredient name | Intrinsic property | Status | Reference number | Date of revision |
|--|---|-------------|------------------|------------------|
| Lysis Buffer Polyoxyethylene octyl phenyl ether | Substance of equivalent concern for environment | Recommended | ED/169/2012 | 2/10/2014 |
| Streptavidin Binding Buffer Polyoxyethylene octyl phenyl ether | Substance of equivalent concern for environment | Recommended | ED/169/2012 | 2/10/2014 |
| Streptavidin Elution Buffer Polyoxyethylene octyl phenyl ether | Substance of equivalent concern for environment | Recommended | ED/169/2012 | 2/10/2014 |
| Calmodulin Binding Buffer Polyoxyethylene octyl phenyl ether | Substance of | Recommended | ED/169/2012 | 2/10/2014 |

Date of issue/Date of revision : 23/01/2018

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SECTION 15: Regulatory information

| | | | | |
|--|--|--------------------|--------------------|------------------|
| <p>Calmodulin Elution Buffer Polyoxyethylene octyl phenyl ether</p> | <p>equivalent concern for environment</p> <p>Substance of equivalent concern for environment</p> | <p>Recommended</p> | <p>ED/169/2012</p> | <p>2/10/2014</p> |
|--|--|--------------------|--------------------|------------------|

| | | |
|---|--|-----------------------------------|
| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | β-Mercaptoethanol | Not applicable. |
| | Lysis Buffer | Not applicable. |
| | 0.5 M EDTA | Not applicable. |
| | Streptavidin Resin | Not applicable. |
| | Streptavidin Binding Buffer | Not applicable. |
| | Streptavidin Elution Buffer | Not applicable. |
| | Streptavidin Supernatant Supplement | Restricted to professional users. |
| | MS-Grade Calmodulin Resin | Not applicable. |
| | Calmodulin Binding Buffer | Not applicable. |
| | Calmodulin Elution Buffer | Not applicable. |

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

| |
|--|
| Category |
| <p>β-Mercaptoethanol H2 E2</p> <p>Streptavidin Resin P5c</p> <p>MS-Grade Calmodulin Resin P5c</p> |

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

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.

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SECTION 15: Regulatory information

Inventory list

| | |
|--------------------------|--|
| Australia | : All components are listed or exempted. |
| Canada | : All components are listed or exempted. |
| China | : All components are listed or exempted. |
| Europe | : All components are listed or exempted. |
| Japan | : Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined. |
| Malaysia | : Not determined. |
| New Zealand | : All components are listed or exempted. |
| Philippines | : All components are listed or exempted. |
| Republic of Korea | : Not determined. |
| Taiwan | : All components are listed or exempted. |
| Thailand | : <input checked="" type="checkbox"/> Not determined. |
| Turkey | : Not determined. |
| United States | : All components are listed or exempted. |
| Viet Nam | : <input checked="" type="checkbox"/> Not determined. |

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|---|--|
| β-Mercaptoethanol Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411 | On basis of test data On basis of test data On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment |
| 0.5 M EDTA Eye Irrit. 2, H319 | Calculation method |
| Streptavidin Resin Flam. Liq. 3, H226 | On basis of test data |
| Streptavidin Supernatant Supplement Repr. 1B, H360D (Unborn child) | Calculation method |
| MS-Grade Calmodulin Resin Flam. Liq. 3, H226 | On basis of test data |

Full text of abbreviated H statements

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SECTION 16: Other information

β-Mercaptoethanol

| | |
|------|--|
| H301 | Toxic if swallowed. |
| H310 | Fatal in contact with skin. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H330 | Fatal if inhaled. |
| H335 | May cause respiratory irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |

Lysis Buffer

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H411 | Toxic to aquatic life with long lasting effects. |

0.5 M EDTA

| | |
|------|--------------------------------|
| H319 | Causes serious eye irritation. |
|------|--------------------------------|

Streptavidin Resin

| | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |

Streptavidin Binding Buffer

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H411 | Toxic to aquatic life with long lasting effects. |

Streptavidin Elution Buffer

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H411 | Toxic to aquatic life with long lasting effects. |

Streptavidin Supernatant Supplement

| | |
|-------|--|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H319 | Causes serious eye irritation. |
| H360D | May damage the unborn child. |

MS-Grade Calmodulin Resin

| | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |

Calmodulin Binding Buffer

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H411 | Toxic to aquatic life with long lasting effects. |

Calmodulin Elution Buffer

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H411 | Toxic to aquatic life with long lasting effects. |

[Full text of classifications \[CLP/GHS\]](#)

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SECTION 16: Other information

β-Mercaptoethanol

Acute Tox. 2, H310
 Acute Tox. 2, H330
 Acute Tox. 3, H301
 Aquatic Chronic 2, H411
 Eye Dam. 1, H318
 Skin Irrit. 2, H315
 Skin Sens. 1, H317
 STOT SE 3, H335

ACUTE TOXICITY (dermal) - Category 2
 ACUTE TOXICITY (inhalation) - Category 2
 ACUTE TOXICITY (oral) - Category 3
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 SKIN CORROSION/IRRITATION - Category 2
 SKIN SENSITISATION - Category 1
 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

Lysis Buffer

Acute Tox. 4, H302
 Aquatic Chronic 2, H411
 Eye Dam. 1, H318
 Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 SKIN CORROSION/IRRITATION - Category 2

0.5 M EDTA

Eye Irrit. 2, H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Streptavidin Resin

Flam. Liq. 2, H225
 Flam. Liq. 3, H226

FLAMMABLE LIQUIDS - Category 2
 FLAMMABLE LIQUIDS - Category 3

Streptavidin Binding Buffer

Acute Tox. 4, H302
 Aquatic Chronic 2, H411
 Eye Dam. 1, H318
 Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 SKIN CORROSION/IRRITATION - Category 2

Streptavidin Elution Buffer

Acute Tox. 4, H302
 Aquatic Chronic 2, H411
 Eye Dam. 1, H318
 Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 SKIN CORROSION/IRRITATION - Category 2

Streptavidin Supernatant Supplement

Acute Tox. 4, H302
 Eye Irrit. 2, H319
 Repr. 1B, H360D
 Skin Corr. 1C, H314

ACUTE TOXICITY (oral) - Category 4
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
 REPRODUCTIVE TOXICITY (Unborn child) - Category 1B
 SKIN CORROSION/IRRITATION - Category 1C

MS-Grade Calmodulin Resin

Eye Irrit. 2, H319
 Flam. Liq. 2, H225
 Flam. Liq. 3, H226

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
 FLAMMABLE LIQUIDS - Category 2
 FLAMMABLE LIQUIDS - Category 3

Calmodulin Binding Buffer

Acute Tox. 4, H302
 Aquatic Chronic 2, H411
 Eye Dam. 1, H318
 Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 SKIN CORROSION/IRRITATION - Category 2

Calmodulin Elution Buffer

Acute Tox. 4, H302
 Aquatic Chronic 2, H411
 Eye Dam. 1, H318
 Skin Irrit. 2, H315

ACUTE TOXICITY (oral) - Category 4
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 SKIN CORROSION/IRRITATION - Category 2

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Date of issue/Date of revision : 23/01/2018

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SECTION 16: Other information

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Version : 2

Notice to reader

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