

# SAFETY DATA SHEET

InterPlay Mammalian TAP System, Part Number 240103

## Section 1. Identification

### 1.1 Product identifier

<b>Product name</b>	: InterPlay Mammalian TAP System, Part Number 240103	
<b>Part No. (Chemical Kit)</b>	: 240103	
<b>Part No.</b>	:	<ul style="list-style-type: none"> <li>β-Mercaptoethanol 240107-53</li> <li>pNTAP-A Expression Vector 240101-51</li> <li>pNTAP-B Expression Vector 240101-52</li> <li>pNTAP-C Expression Vector 240101-53</li> <li>pNTAP-Mef2a Expression Control Vector 240101-55</li> <li>pCMV-Tag2-Mef2c Expression Control Vector 240101-54</li> <li>Lysis Buffer 240107-51</li> <li>0.5 M EDTA 240107-52</li> <li>Streptavidin Resin 240105-51</li> <li>Streptavidin Binding Buffer 240107-54</li> <li>Streptavidin Elution Buffer 240107-56</li> <li>Streptavidin Supernatant Supplement 240107-57</li> <li>MS-Grade Calmodulin Resin 240106-51</li> <li>Calmodulin Binding Buffer 240107-58</li> <li>Calmodulin Elution Buffer 240107-59</li> </ul>

**Validation date** : 1/23/2018

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

<b>Material uses</b>	: Analytical reagent.		
	:	<ul style="list-style-type: none"> <li>β-Mercaptoethanol 0.75 ml (69 µl 14.4 M)</li> <li>pNTAP-A Expression Vector 0.02 ml</li> <li>pNTAP-B Expression Vector 0.02 ml</li> <li>pNTAP-C Expression Vector 0.02 ml (20 µg 1 µg/µl)</li> <li>pNTAP-Mef2a Expression Control Vector 0.03 ml (30 µg 1 µg/µl)</li> <li>pCMV-Tag2-Mef2c Expression Control Vector 0.03 ml (30 µg 1 µg/µl)</li> <li>Lysis Buffer 50 ml</li> <li>0.5 M EDTA 0.2 ml</li> <li>Streptavidin Resin 1.25 ml</li> <li>Streptavidin Binding Buffer 25 ml</li> <li>Streptavidin Elution Buffer 5 ml</li> <li>Streptavidin Supernatant Supplement 0.1 ml</li> <li>MS-Grade Calmodulin Resin 0.625 ml</li> <li>Calmodulin Binding Buffer 40 ml</li> <li>Calmodulin Elution Buffer 2.5 ml</li> </ul>	

### 1.3 Details of the supplier of the safety data sheet

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
5301 Stevens Creek Blvd  
Santa Clara, CA 95051, USA  
800-227-9770

### 1.4 Emergency telephone number

**In case of emergency** : CHEMTREC®: 1-800-424-9300

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

<b>OSHA/HCS status</b>	:  -Mercaptoethanol	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
pNTAP-A Expression Vector		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
pNTAP-B Expression Vector		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
pNTAP-C Expression Vector		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
pNTAP-Mef2a Expression Control Vector		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
pCMV-Tag2-Mef2c Expression Control Vector		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Lysis Buffer		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
0.5 M EDTA		This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Streptavidin Resin		This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Streptavidin Binding Buffer		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Streptavidin Elution Buffer		While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Streptavidin Supernatant Supplement		This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
MS-Grade Calmodulin Resin		This material is considered hazardous by the OSHA

## Section 2. Hazards identification

Calmodulin Binding Buffer	Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Calmodulin Elution Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

### Classification of the substance or mixture

#### β-Mercaptoethanol

H227	FLAMMABLE LIQUIDS - Category 4
H301	ACUTE TOXICITY (oral) - Category 3
H310	ACUTE TOXICITY (dermal) - Category 2
H330	ACUTE TOXICITY (inhalation) - Category 2
H315	SKIN IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE - Category 1
H317	SKIN SENSITIZATION - Category 1
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

#### 0.5 M EDTA

H319	EYE IRRITATION - Category 2A
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#### Streptavidin Resin

H226	FLAMMABLE LIQUIDS - Category 3
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

#### Streptavidin Supernatant Supplement

H360	TOXIC TO REPRODUCTION (Unborn child) - Category 1B
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#### MS-Grade Calmodulin Resin

H226	FLAMMABLE LIQUIDS - Category 3
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

<b>Ingredients of unknown toxicity</b>	:	<input checked="" type="checkbox"/> 0.5 M EDTA	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 10 - 30%
			Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%
			Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 10 - 30%
		Streptavidin Supernatant Supplement	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
			Percentage of the mixture consisting of ingredient

## Section 2. Hazards identification

MS-Grade Calmodulin Resin (s) of unknown inhalation toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%

### 2.2 GHS label elements

#### Hazard pictograms

: <input checked="" type="checkbox"/> Mercaptoethanol	
0.5 M EDTA	
Streptavidin Resin	
Streptavidin Supernatant Supplement	
MS-Grade Calmodulin Resin	

#### Signal word

: <input checked="" type="checkbox"/> Mercaptoethanol	Danger
pNTAP-A Expression Vector	No signal word.
pNTAP-B Expression Vector	No signal word.
pNTAP-C Expression Vector	No signal word.
pNTAP-Mef2a Expression Control Vector	No signal word.
pCMV-Tag2-Mef2c Expression Control Vector	No signal word.
Lysis Buffer	No signal word.
0.5 M EDTA	Warning
Streptavidin Resin	Warning
Streptavidin Binding Buffer	No signal word.
Streptavidin Elution Buffer	No signal word.
Streptavidin Supernatant Supplement	Danger
MS-Grade Calmodulin Resin	Warning
Calmodulin Binding Buffer	No signal word.
Calmodulin Elution Buffer	No signal word.

#### Hazard statements

: <input checked="" type="checkbox"/> Mercaptoethanol	H227 - Combustible liquid. 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.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.

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pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	No known significant effects or critical hazards.
Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	H319 - Causes serious eye irritation.
Streptavidin Resin	H226 - Flammable liquid and vapor. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs through prolonged or repeated exposure. (liver)
Streptavidin Binding Buffer	No known significant effects or critical hazards.
Streptavidin Elution Buffer	No known significant effects or critical hazards.
Streptavidin Supernatant Supplement	H360 - May damage the unborn child.
MS-Grade Calmodulin Resin	H226 - Flammable liquid and vapor. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs through prolonged or repeated exposure. (liver)
Calmodulin Binding Buffer	No known significant effects or critical hazards.
Calmodulin Elution Buffer	No known significant effects or critical hazards.

### Precautionary statements

#### Prevention

:  Mercaptoethanol	P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P284 - Wear respiratory protection. P210 - Keep away from flames and hot surfaces. - No smoking. P271 - Use only outdoors or in a well-ventilated area. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
pNTAP-A Expression Vector	Not applicable.
pNTAP-B Expression Vector	Not applicable.
pNTAP-C Expression Vector	Not applicable.
pNTAP-Mef2a Expression Control Vector	Not applicable.
pCMV-Tag2-Mef2c Expression Control Vector	Not applicable.
Lysis Buffer	Not applicable.
0.5 M EDTA	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
Streptavidin Resin	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static

## Section 2. Hazards identification

Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement	discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling. Not applicable. Not applicable. P201 - Obtain special instructions before use.
MS-Grade Calmodulin Resin	P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling. Not applicable. Not applicable.
Calmodulin Binding Buffer Calmodulin Elution Buffer	P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. P302 + P361+P364 + P352 + P310 + P363 - IF ON SKIN: Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of soap and water. Immediately call a POISON CENTER or physician. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
pNTAP-A Expression Vector pNTAP-B Expression Vector pNTAP-C Expression Vector pNTAP-Mef2a Expression Control Vector pCMV-Tag2-Mef2c Expression Control Vector	

### Response

: -Mercaptoethanol

## Section 2. Hazards identification

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. P337 + P313 - If eye irritation persists: Get medical attention.
Streptavidin Resin	P314 - Get medical attention if you feel unwell. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant Supplement MS-Grade Calmodulin Resin	Not applicable. Not applicable. P308 + P313 - IF exposed or concerned: Get medical attention. P314 - Get medical attention if you feel unwell. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Calmodulin Binding Buffer Calmodulin Elution Buffer	Not applicable. Not applicable.
<b>Storage</b> : <input checked="" type="checkbox"/> Mercaptoethanol	P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
pNTAP-A Expression Vector pNTAP-B Expression Vector pNTAP-C Expression Vector pNTAP-Mef2a Expression Control Vector	Not applicable. Not applicable. Not applicable. Not applicable.
pCMV-Tag2-Mef2c Expression Control Vector	Not applicable.
Lysis Buffer 0.5 M EDTA Streptavidin Resin	Not applicable. Not applicable. P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
Streptavidin Binding Buffer Streptavidin Elution Buffer Streptavidin Supernatant	Not applicable. Not applicable. P405 - Store locked up.

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	Supplement	
	MS-Grade Calmodulin Resin	P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
	Calmodulin Binding Buffer	Not applicable.
	Calmodulin Elution Buffer	Not applicable.
<b>Disposal</b>	: $\beta$ -Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.
	pCMV-Tag2-Mef2c Expression Control Vector	Not applicable.
	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	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Supplement	
	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.
<b>Supplemental label elements</b>	: $\beta$ -Mercaptoethanol	None known.
	pNTAP-A Expression Vector	None known.
	pNTAP-B Expression Vector	None known.
	pNTAP-C Expression Vector	None known.
	pNTAP-Mef2a Expression Control Vector	None known.
	pCMV-Tag2-Mef2c Expression Control Vector	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	None known.
	Supplement	
	MS-Grade Calmodulin Resin	None known.
	Calmodulin Binding Buffer	None known.
	Calmodulin Elution Buffer	None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: $\beta$ -Mercaptoethanol	None known.
	pNTAP-A Expression Vector	None known.
	pNTAP-B Expression Vector	None known.
	pNTAP-C Expression Vector	None known.
	pNTAP-Mef2a Expression Control Vector	None known.
	pCMV-Tag2-Mef2c Expression Control Vector	None known.

## Section 2. Hazards identification

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

<b>Substance/mixture</b>	:	β-Mercaptoethanol	Substance
		pNTAP-A Expression Vector	Mixture
		pNTAP-B Expression Vector	Mixture
		pNTAP-C Expression Vector	Mixture
		pNTAP-Mef2a Expression Control Vector	Mixture
		pCMV-Tag2-Mef2c Expression Control Vector	Mixture
		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

Ingredient name	%	CAS number
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	100	60-24-2
<b>0.5 M EDTA</b> Edetic acid	≥10 - ≤25	60-00-4
<b>Streptavidin Resin</b> Ethanol	≥10 - ≤25	64-17-5
<b>Streptavidin Supernatant Supplement</b> calcium chloride Imidazole	≤3 <1	10043-52-4 288-32-4
<b>MS-Grade Calmodulin Resin</b> Ethanol Sodium chloride	≥10 - ≤25 ≤3	64-17-5 7647-14-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	:  -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.
pNTAP-A Expression Vector		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.
pNTAP-B Expression Vector		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.
pNTAP-C Expression Vector		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.
pNTAP-Mef2a Expression Control Vector		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.
pCMV-Tag2-Mef2c Expression Control Vector		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.
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.
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.

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		Continue to rinse for at least 10 minutes. Get medical attention.
	Calmodulin 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.
	Calmodulin 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.
<b>Inhalation</b>	:  -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.
	pNTAP-A Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pNTAP-B Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pNTAP-C Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pNTAP-Mef2a Expression Control Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pCMV-Tag2-Mef2c Expression Control Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	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.

## Section 4. First aid measures

Streptavidin Resin	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. Get medical attention. If necessary, call a poison center or physician. 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 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. Get medical attention. If necessary, call a poison center or physician. 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.

## Section 4. First aid measures

### Skin contact

: -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.
pNTAP-A Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pNTAP-B Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pNTAP-C Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pNTAP-Mef2a Expression Control Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pCMV-Tag2-Mef2c Expression Control Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
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. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. 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. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Calmodulin Binding Buffer	Flush contaminated skin with plenty of water.

## Section 4. First aid measures

### Ingestion

Calmodulin Elution Buffer	Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
:  -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 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.
pNTAP-A Expression Vector	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.
pNTAP-B Expression Vector	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.
pNTAP-C Expression Vector	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.
pNTAP-Mef2a Expression Control Vector	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.
pCMV-Tag2-Mef2c Expression Control Vector	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.
Lysis Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable

## Section 4. First aid measures

0.5 M EDTA

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.

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.

Streptavidin 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 necessary, call a poison center or 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.

Streptavidin 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.

Streptavidin 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.

Streptavidin Supernatant Supplement

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

## Section 4. First aid measures

MS-Grade Calmodulin Resin	occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. 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. 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 necessary, call a poison center or 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.
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.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

##### Eye contact

: $\beta$ -Mercaptoethanol	Causes serious eye damage.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.
pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	No known significant effects or critical hazards.
Lysis Buffer	No known significant effects or critical hazards.
0.5 M EDTA	Causes serious eye irritation.
Streptavidin Resin	Causes serious eye irritation.
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	Causes serious eye irritation.
Calmodulin Binding Buffer	No known significant effects or critical hazards.
Calmodulin Elution Buffer	No known significant effects or critical hazards.

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<b>Inhalation</b>	:	$\beta$ -Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
		pNTAP-A Expression Vector	No known significant effects or critical hazards.
		pNTAP-B Expression Vector	No known significant effects or critical hazards.
		pNTAP-C Expression Vector	No known significant effects or critical hazards.
		pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
		pCMV-Tag2-Mef2c Expression Control Vector	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	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
		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	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
<b>Skin contact</b>	:	$\beta$ -Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
		pNTAP-A Expression Vector	No known significant effects or critical hazards.
		pNTAP-B Expression Vector	No known significant effects or critical hazards.
		pNTAP-C Expression Vector	No known significant effects or critical hazards.
		pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Ingestion</b>	:	$\beta$ -Mercaptoethanol	Toxic if swallowed.
		pNTAP-A Expression Vector	No known significant effects or critical hazards.
		pNTAP-B Expression Vector	No known significant effects or critical hazards.
		pNTAP-C Expression Vector	No known significant effects or critical hazards.
		pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
		pCMV-Tag2-Mef2c Expression Control Vector	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	Can cause central nervous system (CNS) depression.
		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	Can cause central nervous system (CNS)

## Section 4. First aid measures

	Calmodulin Binding Buffer	depression.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
		No known significant effects or critical hazards.
<b>Over-exposure signs/symptoms</b>		
<b>Eye contact</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Resin	Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	No specific data.
	MS-Grade Calmodulin Resin	Adverse symptoms may include the following: pain or irritation watering redness
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
<b>Inhalation</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	Adverse symptoms may include the following:

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	MS-Grade Calmodulin Resin	reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
	:  -Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
<b>Ingestion</b>	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 fetal weight increase in fetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	No specific data.
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
	:  -Mercaptoethanol	Adverse symptoms may include the following: stomach pains
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
pNTAP-C Expression Vector	No specific data.	
pNTAP-Mef2a Expression Control Vector	No specific data.	
pCMV-Tag2-Mef2c Expression Control Vector	No specific data.	
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 fetal weight increase in fetal deaths skeletal malformations	
MS-Grade Calmodulin Resin	No specific data.	
Calmodulin Binding Buffer	No specific data.	

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Calmodulin Elution Buffer No specific data.

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	: $\beta$ -Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-A Expression Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-B Expression Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-C Expression Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pNTAP-Mef2a Expression Control Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Specific treatments</b>	: $\beta$ -Mercaptoethanol	No specific treatment.
	pNTAP-A Expression Vector	No specific treatment.
	pNTAP-B Expression Vector	No specific treatment.
	pNTAP-C Expression Vector	No specific treatment.
	pNTAP-Mef2a Expression Control Vector	No specific treatment.
	pCMV-Tag2-Mef2c Expression Control Vector	No specific treatment.
	Lysis Buffer	No specific treatment.

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	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.
	Calmodulin Binding Buffer	No specific treatment.
	Calmodulin Elution Buffer	No specific treatment.
<b>Protection of first-aiders</b>	:  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.
	pNTAP-A Expression Vector	No action shall be taken involving any personal risk or without suitable training.
	pNTAP-B Expression Vector	No action shall be taken involving any personal risk or without suitable training.
	pNTAP-C Expression Vector	No action shall be taken involving any personal risk or without suitable training.
	pNTAP-Mef2a Expression Control Vector	No action shall be taken involving any personal risk or without suitable training.
	pCMV-Tag2-Mef2c Expression Control Vector	No action shall be taken involving any personal risk or without suitable training.
	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. 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.
	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. 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.
	Calmodulin Binding Buffer	No action shall be taken involving any personal risk or without suitable training.

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Calmodulin Elution Buffer

No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

β-Mercaptoethanol	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
pNTAP-A Expression Vector	Use an extinguishing agent suitable for the surrounding fire.
pNTAP-B Expression Vector	Use an extinguishing agent suitable for the surrounding fire.
pNTAP-C Expression Vector	Use an extinguishing agent suitable for the surrounding fire.
pNTAP-Mef2a Expression Control Vector	Use an extinguishing agent suitable for the surrounding fire.
pCMV-Tag2-Mef2c Expression Control Vector	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 <sub>2</sub> , 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 <sub>2</sub> , 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	Do not use water jet.
pNTAP-A Expression Vector	None known.
pNTAP-B Expression Vector	None known.
pNTAP-C Expression Vector	None known.
pNTAP-Mef2a Expression Control Vector	None known.
pCMV-Tag2-Mef2c Expression Control Vector	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

## Section 5. Fire-fighting measures

### Specific hazards arising from the chemical

:  $\beta$ -Mercaptoethanol

Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

pNTAP-A Expression Vector

In a fire or if heated, a pressure increase will occur and the container may burst.

pNTAP-B Expression Vector

In a fire or if heated, a pressure increase will occur and the container may burst.

pNTAP-C Expression Vector

In a fire or if heated, a pressure increase will occur and the container may burst.

pNTAP-Mef2a Expression Control Vector

In a fire or if heated, a pressure increase will occur and the container may burst.

pCMV-Tag2-Mef2c Expression Control Vector

In a fire or if heated, a pressure increase will occur and the container may burst.

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 vapor. 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 vapor. 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.

Calmodulin Binding Buffer

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 thermal decomposition products

:  $\beta$ -Mercaptoethanol

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide  
sulfur oxides

pNTAP-A Expression Vector

No specific data.

pNTAP-B Expression Vector

No specific data.

pNTAP-C Expression Vector

No specific data.

pNTAP-Mef2a Expression Control Vector

No specific data.

pCMV-Tag2-Mef2c Expression Control Vector

No specific data.

Lysis Buffer

No specific data.

0.5 M EDTA

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide

## Section 5. Fire-fighting measures

Streptavidin Resin	nitrogen oxides 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 protective actions for fire-fighters

: $\beta$ -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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
pNTAP-A Expression Vector	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.
pNTAP-B Expression Vector	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.
pNTAP-C Expression Vector	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.
pNTAP-Mef2a Expression Control Vector	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.
pCMV-Tag2-Mef2c Expression Control Vector	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

## Section 5. Fire-fighting measures

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 taken involving any personal risk or without suitable training.

MS-Grade Calmodulin 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.

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.

### Special protective equipment for fire-fighters

:  $\beta$ -Mercaptoethanol

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

pNTAP-A Expression Vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

pNTAP-B Expression Vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

pNTAP-C Expression Vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

pNTAP-Mef2a Expression Control Vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

pCMV-Tag2-Mef2c Expression Control Vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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.

## Section 5. Fire-fighting measures

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.
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.
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.
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.
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.
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.
Calmodulin 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.
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.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**

: -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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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.

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.

No action shall be taken involving any personal

pNTAP-A Expression Vector

pNTAP-B Expression Vector

pNTAP-C Expression Vector

## Section 6. Accidental release measures

pNTAP-Mef2a Expression Control Vector	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. 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.
pCMV-Tag2-Mef2c Expression Control Vector	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.
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 spilled 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 spilled material. Avoid breathing vapor 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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor 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 spilled 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 spilled 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 spilled material. Avoid

## Section 6. Accidental release measures

breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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.

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.

**For emergency responders :**  $\beta$ -Mercaptoethanol

pNTAP-A Expression Vector

If specialized 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".

pNTAP-B Expression Vector

If specialized 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".

pNTAP-C Expression Vector

If specialized 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".

pNTAP-Mef2a Expression Control Vector

If specialized 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".

pCMV-Tag2-Mef2c Expression Control Vector

If specialized 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 specialized 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 specialized 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 specialized 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".

## Section 6. Accidental release measures

	spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". If specialized 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 specialized 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 specialized 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 specialized 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 specialized 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 specialized 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 specialized 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".
<b>6.2 Environmental precautions</b>	
: $\beta$ -Mercaptoethanol	Avoid dispersal of spilled 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).
pNTAP-A Expression Vector	Avoid dispersal of spilled 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).
pNTAP-B Expression Vector	Avoid dispersal of spilled 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).
pNTAP-C Expression Vector	Avoid dispersal of spilled 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).
pNTAP-Mef2a Expression Control Vector	Avoid dispersal of spilled 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).
pCMV-Tag2-Mef2c Expression Control Vector	Avoid dispersal of spilled 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).
Lysis Buffer	Avoid dispersal of spilled material and runoff and

## Section 6. Accidental release measures

	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 spilled 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 spilled 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 spilled 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 spilled 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 spilled 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 spilled 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 spilled 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 spilled 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 materials for containment and cleaning up

**Methods for cleaning up** :  $\beta$ -Mercaptoethanol

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.

pNTAP-A Expression Vector

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.

## Section 6. Accidental release measures

pNTAP-B Expression Vector	disposal contractor. 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.
pNTAP-C Expression Vector	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.
pNTAP-Mef2a Expression Control Vector	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.
pCMV-Tag2-Mef2c Expression Control Vector	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. 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

## Section 6. Accidental release measures

MS-Grade Calmodulin Resin	inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. 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.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

**Protective measures** : -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 vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
pNTAP-A Expression Vector	Put on appropriate personal protective equipment (see Section 8).
pNTAP-B Expression Vector	Put on appropriate personal protective equipment (see Section 8).
pNTAP-C Expression Vector	Put on appropriate personal protective equipment (see Section 8).
pNTAP-Mef2a Expression Control Vector	Put on appropriate personal protective equipment (see Section 8).
pCMV-Tag2-Mef2c Expression Control Vector	Put on appropriate personal protective equipment (see Section 8).
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 vapor or

## Section 7. Handling and storage

Streptavidin Resin	<p>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 hazardous. Do not reuse container.</p> <p>Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.</p>
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 vapor 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 breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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).

## Section 7. Handling and storage

### Advice on general occupational hygiene

Calmodulin Elution Buffer	Put on appropriate personal protective equipment (see Section 8).
: $\beta$ -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.
pNTAP-A Expression Vector	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.
pNTAP-B Expression Vector	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.
pNTAP-C Expression Vector	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.
pNTAP-Mef2a Expression Control Vector	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.
pCMV-Tag2-Mef2c Expression Control Vector	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 Section 8 for additional information on hygiene measures.
0.5 M EDTA	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

## Section 7. Handling and storage

Streptavidin Binding Buffer

Streptavidin Elution Buffer

Streptavidin Supernatant Supplement

MS-Grade Calmodulin Resin

Calmodulin Binding Buffer

Calmodulin Elution Buffer

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. 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. 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. 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. 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. 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. 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. 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

: -Mercaptoethanol

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be

## Section 7. Handling and storage

pNTAP-A Expression Vector

carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pNTAP-B Expression Vector

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pNTAP-C Expression Vector

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pNTAP-Mef2a Expression Control Vector

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

pCMV-Tag2-Mef2c Expression Control Vector

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for

## Section 7. Handling and storage

Lysis Buffer	<p>incompatible materials before handling or use. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
0.5 M EDTA	<p>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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Streptavidin Resin	<p>Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Streptavidin Binding Buffer	<p>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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Streptavidin Elution Buffer	<p>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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>

## Section 7. Handling and storage

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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. Store locked up. 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 unlabeled 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 unlabeled 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### 7.3 Specific end use(s)

#### Recommendations

: $\beta$ -Mercaptoethanol	Industrial applications, Professional applications.
pNTAP-A Expression Vector	Industrial applications, Professional applications.
pNTAP-B Expression Vector	Industrial applications, Professional applications.
pNTAP-C Expression Vector	Industrial applications, Professional applications.
pNTAP-Mef2a Expression Control Vector	Industrial applications, Professional applications.
pCMV-Tag2-Mef2c Expression Control Vector	Industrial applications, Professional applications.

## Section 7. Handling and storage

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 Buffer	Industrial applications, Professional applications.
Calmodulin Elution Buffer	Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b> : $\beta$ -Mercaptoethanol	Not applicable.
pNTAP-A Expression Vector	Not applicable.
pNTAP-B Expression Vector	Not applicable.
pNTAP-C Expression Vector	Not applicable.
pNTAP-Mef2a Expression Control Vector	Not applicable.
pCMV-Tag2-Mef2c Expression Control Vector	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

Ingredient name	Exposure limits
<b><math>\beta</math>-Mercaptoethanol</b> 2-Mercaptoethanol	<b>AIHA WEEL (United States, 10/2011).</b> <b>Absorbed through skin.</b> TWA: 0.2 ppm 8 hours.
<b>0.5 M EDTA</b> Edetic acid	None.
<b>Streptavidin Resin</b> Ethanol	<b>ACGIH TLV (United States, 3/2017).</b> STEL: 1000 ppm 15 minutes. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 1000 ppm 8 hours. TWA: 1900 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 1000 ppm 10 hours. TWA: 1900 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 1000 ppm 8 hours. TWA: 1900 mg/m <sup>3</sup> 8 hours.
<b>Streptavidin Supernatant Supplement</b> calcium chloride	None.

## Section 8. Exposure controls/personal protection

Imidazole	None.
<b>MS-Grade Calmodulin Resin</b>	<b>ACGIH TLV (United States, 3/2017).</b>
Ethanol	STEL: 1000 ppm 15 minutes.
	<b>OSHA PEL 1989 (United States, 3/1989).</b>
	TWA: 1000 ppm 8 hours.
	TWA: 1900 mg/m <sup>3</sup> 8 hours.
	<b>NIOSH REL (United States, 10/2016).</b>
	TWA: 1000 ppm 10 hours.
	TWA: 1900 mg/m <sup>3</sup> 10 hours.
	<b>OSHA PEL (United States, 6/2016).</b>
	TWA: 1000 ppm 8 hours.
	TWA: 1900 mg/m <sup>3</sup> 8 hours.
Sodium chloride	None.

### 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, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

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

### Individual protection measures

#### Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. 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.

##### 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.

## Section 8. Exposure controls/personal protection

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

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	:	β-Mercaptoethanol	Liquid.
		pNTAP-A Expression Vector	Liquid.
		pNTAP-B Expression Vector	Liquid.
		pNTAP-C Expression Vector	Liquid.
		pNTAP-Mef2a Expression Control Vector	Liquid.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Color</b>	:	β-Mercaptoethanol	Colorless.
		pNTAP-A Expression Vector	Not available.
		pNTAP-B Expression Vector	Not available.
		pNTAP-C Expression Vector	Not available.
		pNTAP-Mef2a Expression Control Vector	Not available.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Odor</b>	:	β-Mercaptoethanol	Characteristic.
		pNTAP-A Expression Vector	Not available.
		pNTAP-B Expression Vector	Not available.
		pNTAP-C Expression Vector	Not available.
		pNTAP-Mef2a Expression Control Vector	Not available.
		pCMV-Tag2-Mef2c Expression Control Vector	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.

## 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.
<b>Odor threshold</b>	: $\beta$ -Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>pH</b>	: $\beta$ -Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	7.5
	pNTAP-B Expression Vector	7.5
	pNTAP-C Expression Vector	7.5
	pNTAP-Mef2a Expression Control Vector	7.5
	pCMV-Tag2-Mef2c Expression Control Vector	7.5
	Lysis Buffer	8
	0.5 M EDTA	8
	Streptavidin Resin	7.5
	Streptavidin Binding Buffer	8
	Streptavidin Elution Buffer	8
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	7.5
	Calmodulin Binding Buffer	8
	Calmodulin Elution Buffer	8
<b>Melting point</b>	: $\beta$ -Mercaptoethanol	<-100°C (<-148°F)
	pNTAP-A Expression Vector	0°C (32°F)
	pNTAP-B Expression Vector	0°C (32°F)
	pNTAP-C Expression Vector	0°C (32°F)
	pNTAP-Mef2a Expression Control Vector	0°C (32°F)
	pCMV-Tag2-Mef2c Expression Control Vector	0°C (32°F)
	Lysis Buffer	0°C (32°F)
	0.5 M EDTA	Not available.
	Streptavidin Resin	Not available.
	Streptavidin Binding Buffer	0°C (32°F)
	Streptavidin Elution Buffer	0°C (32°F)
	Streptavidin Supernatant Supplement	0°C (32°F)
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	0°C (32°F)

## Section 9. Physical and chemical properties

	Calmodulin Elution Buffer	0°C (32°F)
<b>Boiling point</b>	: β-Mercaptoethanol	155.8°C (312.4°F)
	pNTAP-A Expression Vector	100°C (212°F)
	pNTAP-B Expression Vector	100°C (212°F)
	pNTAP-C Expression Vector	100°C (212°F)
	pNTAP-Mef2a Expression Control Vector	100°C (212°F)
	pCMV-Tag2-Mef2c Expression Control Vector	100°C (212°F)
	Lysis Buffer	100°C (212°F)
	0.5 M EDTA	Not available.
	Streptavidin Resin	Not available.
	Streptavidin Binding Buffer	100°C (212°F)
	Streptavidin Elution Buffer	100°C (212°F)
	Streptavidin Supernatant Supplement	100°C (212°F)
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	100°C (212°F)
	Calmodulin Elution Buffer	100°C (212°F)
<b>Flash point</b>	: β-Mercaptoethanol	Closed cup: 74°C (165.2°F) Open cup: 74°C (165.2°F)
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	Not available.
	Lysis Buffer	Not available.
	0.5 M EDTA	Not available.
	Streptavidin Resin	Closed cup: 37.8 to 61°C (100 to 141.8°F)
	Streptavidin Binding Buffer	Not available.
	Streptavidin Elution Buffer	Not available.
	Streptavidin Supernatant Supplement	Not available.
	MS-Grade Calmodulin Resin	Closed cup: 37.8 to 61°C (100 to 141.8°F)
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
<b>Evaporation rate</b>	: β-Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.

## Section 9. Physical and chemical properties

<b>Flammability (solid, gas)</b>	:	β-Mercaptoethanol	Not applicable.
		pNTAP-A Expression Vector	Not applicable.
		pNTAP-B Expression Vector	Not applicable.
		pNTAP-C Expression Vector	Not applicable.
		pNTAP-Mef2a Expression Control Vector	Not applicable.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
	<b>Lower and upper explosive (flammable) limits</b>	:	β-Mercaptoethanol
		pNTAP-A Expression Vector	Not available.
		pNTAP-B Expression Vector	Not available.
		pNTAP-C Expression Vector	Not available.
		pNTAP-Mef2a Expression Control Vector	Not available.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Vapor pressure</b>		:	β-Mercaptoethanol
		pNTAP-A Expression Vector	Not available.
		pNTAP-B Expression Vector	Not available.
		pNTAP-C Expression Vector	Not available.
		pNTAP-Mef2a Expression Control Vector	Not available.
		pCMV-Tag2-Mef2c Expression Control Vector	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.
	<b>Vapor density</b>	:	

## Section 9. Physical and chemical properties

	$\beta$ -Mercaptoethanol	2.7 [Air = 1]
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Relative density</b>	$\beta$ -Mercaptoethanol	1.1
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Solubility</b>	$\beta$ -Mercaptoethanol	Easily soluble in the following materials: cold water and hot water.
	pNTAP-A Expression Vector	Easily soluble in the following materials: cold water and hot water.
	pNTAP-B Expression Vector	Easily soluble in the following materials: cold water and hot water.
	pNTAP-C Expression Vector	Easily soluble in the following materials: cold water and hot water.
	pNTAP-Mef2a Expression Control Vector	Easily soluble in the following materials: cold water and hot water.
	pCMV-Tag2-Mef2c Expression Control Vector	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	Easily soluble in the following materials: cold water

## Section 9. Physical and chemical properties

	Supplement	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.
	Calmodulin Elution Buffer	Easily soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: $\beta$ -Mercaptoethanol	-0.056
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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	Not available.
	Supplement	
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
<b>Auto-ignition temperature</b>	: $\beta$ -Mercaptoethanol	295°C (563°F)
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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	Not available.
	Supplement	
	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
<b>Decomposition temperature</b>	: $\beta$ -Mercaptoethanol	Not available.
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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	Not available.
	Supplement	

## Section 9. Physical and chemical properties

	MS-Grade Calmodulin Resin	Not available.
	Calmodulin Binding Buffer	Not available.
	Calmodulin Elution Buffer	Not available.
<b>Viscosity</b>	: $\beta$ -Mercaptoethanol	Dynamic (room temperature): 3.43 mPa·s (3.43 cP)
	pNTAP-A Expression Vector	Not available.
	pNTAP-B Expression Vector	Not available.
	pNTAP-C Expression Vector	Not available.
	pNTAP-Mef2a Expression Control Vector	Not available.
	pCMV-Tag2-Mef2c Expression Control Vector	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.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: $\beta$ -Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-A Expression Vector	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-B Expression Vector	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-C Expression Vector	No specific test data related to reactivity available for this product or its ingredients.
	pNTAP-Mef2a Expression Control Vector	No specific test data related to reactivity available for this product or its ingredients.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
	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.



## Section 10. Stability and reactivity

pNTAP-Mef2a Expression Control Vector	No specific data.
pCMV-Tag2-Mef2c Expression Control Vector	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 pressurize, 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 pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.

<b>10.5 Incompatible materials</b> : $\beta$ -Mercaptoethanol	Reactive or incompatible with the following materials: oxidizing materials
pNTAP-A Expression Vector	May react or be incompatible with oxidizing materials.
pNTAP-B Expression Vector	May react or be incompatible with oxidizing materials.
pNTAP-C Expression Vector	May react or be incompatible with oxidizing materials.
pNTAP-Mef2a Expression Control Vector	May react or be incompatible with oxidizing materials.
pCMV-Tag2-Mef2c Expression Control Vector	May react or be incompatible with oxidizing materials.
Lysis Buffer	May react or be incompatible with oxidizing materials.
0.5 M EDTA	May react or be incompatible with oxidizing materials.
Streptavidin Resin	Reactive or incompatible with the following materials: oxidizing materials
Streptavidin Binding Buffer	May react or be incompatible with oxidizing materials.
Streptavidin Elution Buffer	May react or be incompatible with oxidizing materials.
Streptavidin Supernatant Supplement	May react or be incompatible with oxidizing materials.
MS-Grade Calmodulin Resin	Reactive or incompatible with the following materials: oxidizing materials
Calmodulin Binding Buffer	May react or be incompatible with oxidizing materials.
Calmodulin Elution Buffer	May react or be incompatible with oxidizing materials.

## Section 10. Stability and reactivity

<b>10.6 Hazardous decomposition products</b>	: $\beta$ -Mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pNTAP-A Expression Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pNTAP-B Expression Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pNTAP-C Expression Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pNTAP-Mef2a Expression Control Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pCMV-Tag2-Mef2c Expression Control Vector	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

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-
<b>Streptavidin Resin</b> Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m <sup>3</sup> 7 g/kg	4 hours -
<b>Streptavidin Supernatant Supplement</b> calcium chloride Imidazole	LD50 Oral LD50 Oral	Rat Rat	1 g/kg 220 mg/kg	- -
<b>MS-Grade Calmodulin Resin</b> Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m <sup>3</sup> 7 g/kg	4 hours -
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
<b>Streptavidin Resin</b> Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
<b>MS-Grade Calmodulin Resin</b> Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Conclusion/Summary

#### Skin

: **240105-51**: Repeated exposure may cause skin dryness or cracking.

## Section 11. Toxicological information

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
<b>Streptavidin Resin</b> Ethanol	-	1	-
<b>MS-Grade Calmodulin Resin</b> Ethanol	-	1	-

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
<b>Streptavidin Resin</b> Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
<b>MS-Grade Calmodulin Resin</b> Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
<b>Streptavidin Resin</b> Ethanol	Category 2	Not determined	liver
<b>MS-Grade Calmodulin Resin</b> Ethanol	Category 2	Not determined	liver

### Aspiration hazard

Not available.

## Section 11. Toxicological information

<b>Information on the likely routes of exposure</b>	<ul style="list-style-type: none"> <li>: <math>\beta</math>-Mercaptoethanol</li> <li>pNTAP-A Expression Vector</li> <li>pNTAP-B Expression Vector</li> <li>pNTAP-C Expression Vector</li> <li>pNTAP-Mef2a Expression Control Vector</li> <li>pCMV-Tag2-Mef2c Expression Control Vector</li> <li>Lysis Buffer</li> <li>0.5 M EDTA</li> <li>Streptavidin Resin</li> <li>Streptavidin Binding Buffer</li> <li>Streptavidin Elution Buffer</li> <li>Streptavidin Supernatant Supplement</li> <li>MS-Grade Calmodulin Resin</li> <li>Calmodulin Binding Buffer</li> <li>Calmodulin Elution Buffer</li> </ul>	<ul style="list-style-type: none"> <li>Routes of entry anticipated: Oral, Dermal, Inhalation.</li> <li>Not available.</li> <li>Not available.</li> <li>Not available.</li> <li>Not available.</li> <li>Not available.</li> <li>Not available.</li> <li>Routes of entry anticipated: Oral, Dermal, Inhalation.</li> <li>Routes of entry anticipated: Oral, Dermal, Inhalation.</li> <li>Not available.</li> <li>Not available.</li> <li>Routes of entry anticipated: Oral, Dermal, Inhalation.</li> <li>Routes of entry anticipated: Oral, Dermal, Inhalation.</li> <li>Not available.</li> <li>Not available.</li> </ul>
<b>Potential acute health effects</b>		
<b>Eye contact</b>	<ul style="list-style-type: none"> <li>: <math>\beta</math>-Mercaptoethanol</li> <li>pNTAP-A Expression Vector</li> <li>pNTAP-B Expression Vector</li> <li>pNTAP-C Expression Vector</li> <li>pNTAP-Mef2a Expression Control Vector</li> <li>pCMV-Tag2-Mef2c Expression Control Vector</li> <li>Lysis Buffer</li> <li>0.5 M EDTA</li> <li>Streptavidin Resin</li> <li>Streptavidin Binding Buffer</li> <li>Streptavidin Elution Buffer</li> <li>Streptavidin Supernatant Supplement</li> <li>MS-Grade Calmodulin Resin</li> <li>Calmodulin Binding Buffer</li> <li>Calmodulin Elution Buffer</li> </ul>	<ul style="list-style-type: none"> <li>Causes serious eye damage.</li> <li>No known significant effects or critical hazards.</li> <li>Causes serious eye irritation.</li> <li>Causes serious eye irritation.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Causes serious eye irritation.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>: <math>\beta</math>-Mercaptoethanol</li> <li>pNTAP-A Expression Vector</li> <li>pNTAP-B Expression Vector</li> <li>pNTAP-C Expression Vector</li> <li>pNTAP-Mef2a Expression Control Vector</li> <li>pCMV-Tag2-Mef2c Expression Control Vector</li> <li>Lysis Buffer</li> <li>0.5 M EDTA</li> <li>Streptavidin Resin</li> <li>Streptavidin Binding Buffer</li> <li>Streptavidin Elution Buffer</li> <li>Streptavidin Supernatant Supplement</li> </ul>	<ul style="list-style-type: none"> <li>Fatal if inhaled. May cause respiratory irritation.</li> <li>No known significant effects or critical hazards.</li> <li>Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>

## Section 11. Toxicological information

	MS-Grade Calmodulin Resin	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
	Calmodulin Binding Buffer	May cause respiratory irritation.
	Calmodulin Elution Buffer	No known significant effects or critical hazards.
<b>Skin contact</b>	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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.
<b>Ingestion</b>	: $\beta$ -Mercaptoethanol	Toxic if swallowed.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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	Can cause central nervous system (CNS) depression.
	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	Can cause central nervous system (CNS) depression.
	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

<b>Eye contact</b>	: $\beta$ -Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
	Lysis Buffer	No specific data.

## Section 11. Toxicological information

	0.5 M EDTA	Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Resin	Adverse symptoms may include the following: pain or irritation watering redness
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	No specific data.
	MS-Grade Calmodulin Resin	Adverse symptoms may include the following: pain or irritation watering redness
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.
<b>Inhalation</b>	:  -Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
	pNTAP-A Expression Vector	No specific data.
	pNTAP-B Expression Vector	No specific data.
	pNTAP-C Expression Vector	No specific data.
	pNTAP-Mef2a Expression Control Vector	No specific data.
	pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
	Lysis Buffer	No specific data.
	0.5 M EDTA	No specific data.
	Streptavidin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Streptavidin Binding Buffer	No specific data.
	Streptavidin Elution Buffer	No specific data.
	Streptavidin Supernatant Supplement	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations
	MS-Grade Calmodulin Resin	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Calmodulin Binding Buffer	No specific data.
	Calmodulin Elution Buffer	No specific data.

## Section 11. Toxicological information

<b>Skin contact</b>	:	β-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		pNTAP-A Expression Vector	No specific data.
		pNTAP-B Expression Vector	No specific data.
		pNTAP-C Expression Vector	No specific data.
		pNTAP-Mef2a Expression Control Vector	No specific data.
		pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
		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 fetal weight increase in fetal deaths skeletal malformations
		MS-Grade Calmodulin Resin	No specific data.
		Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.		
<b>Ingestion</b>	:	β-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
		pNTAP-A Expression Vector	No specific data.
		pNTAP-B Expression Vector	No specific data.
		pNTAP-C Expression Vector	No specific data.
		pNTAP-Mef2a Expression Control Vector	No specific data.
		pCMV-Tag2-Mef2c Expression Control Vector	No specific data.
		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 fetal weight increase in fetal deaths skeletal malformations
		MS-Grade Calmodulin Resin	No specific data.
		Calmodulin Binding Buffer	No specific data.
Calmodulin Elution Buffer	No specific data.		

### Delayed and immediate effects and also 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.

## Section 11. Toxicological information

### Potential chronic health effects

#### General

: $\beta$ -Mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.
pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	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	May cause damage to organs through prolonged or repeated exposure.
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	May cause damage to organs through prolonged or repeated exposure.
Calmodulin Binding Buffer	No known significant effects or critical hazards.
Calmodulin Elution Buffer	No known significant effects or critical hazards.

#### Carcinogenicity

: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.
pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	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

: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
pNTAP-A Expression Vector	No known significant effects or critical hazards.
pNTAP-B Expression Vector	No known significant effects or critical hazards.
pNTAP-C Expression Vector	No known significant effects or critical hazards.
pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
pCMV-Tag2-Mef2c Expression Control Vector	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.

## Section 11. Toxicological information

<b>Teratogenicity</b>	Calmodulin Elution Buffer	No known significant effects or critical hazards.
	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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	May damage the unborn child.
	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.	
<b>Developmental effects</b>	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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.	
<b>Fertility effects</b>	: $\beta$ -Mercaptoethanol	No known significant effects or critical hazards.
	pNTAP-A Expression Vector	No known significant effects or critical hazards.
	pNTAP-B Expression Vector	No known significant effects or critical hazards.
	pNTAP-C Expression Vector	No known significant effects or critical hazards.
	pNTAP-Mef2a Expression Control Vector	No known significant effects or critical hazards.
	pCMV-Tag2-Mef2c Expression Control Vector	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.	

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Route	ATE value
<b>Streptavidin Supernatant Supplement</b> Oral	90918.2 mg/kg
<b>MS-Grade Calmodulin Resin</b> Oral	103448.4 mg/kg

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>0.5 M EDTA</b> 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
<b>Streptavidin Resin</b> Ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
<b>Streptavidin Supernatant Supplement</b> calcium chloride	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
	Acute EC50 3130000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
<b>MS-Grade Calmodulin Resin</b> Ethanol	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
	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
Sodium chloride	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
	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 -	3 weeks

## Section 12. Ecological information

	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
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### 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>0.5 M EDTA</b> Edetic acid	-	-	Not readily
<b>Streptavidin Resin</b> Ethanol	-	-	Readily
<b>Streptavidin Supernatant Supplement</b> calcium chloride	-	-	Readily
<b>MS-Grade Calmodulin Resin</b> Ethanol	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	-0.056	-	low
<b>0.5 M EDTA</b> Edetic acid	-3.86	1.8	low
<b>Streptavidin Resin</b> Ethanol	-0.35	0.5	low
<b>Streptavidin Supernatant Supplement</b> calcium chloride	<3	-	low
Imidazole	-0.02	-	low
<b>MS-Grade Calmodulin Resin</b> Ethanol	-0.35	0.5	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**12.5 Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

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

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3316	UN3316	UN3316	UN3316	UN3316
UN proper shipping name	☑ Chemical kits	CHEMICAL KIT	EQUIPO QUIMICO	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9  	9 	9  	9 
Packing group	II	II	II	II	II
Environmental hazards	☒ No.	Yes.	☑ Yes. The environmentally hazardous substance mark is not required.	Yes.	☑ Yes. The environmentally hazardous substance mark is not required.

### Additional information

☑ **Remarks:** Excepted Quantity

**DOT Classification** : ☑ **Limited quantity** Yes.

**Packaging instruction** Exceptions: 161. Non-bulk: 161. Bulk: None.

**Quantity limitation** Passenger aircraft/rail: 10 kg. Cargo aircraft: 10 kg.

**Special provisions** 15

## Section 14. Transport information

- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.  
**Passenger Carrying Road or Rail Index** 10  
**Special provisions** 65, 141
- Mexico Classification** : **Special provisions** 251, 340
- 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

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

**Transport in bulk according to 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

**U.S. Federal regulations** : **TSCA 8(a) PAIR:** Polyoxyethylene octyl phenyl ether  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**Clean Water Act (CWA) 311:** Edetic acid; Disodium hydrogenorthophosphate

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

#### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

#### SARA 311/312

## Section 15. Regulatory information

<b>Classification</b>	: <b>β-Mercaptoethanol</b>	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
	pNTAP-A Expression Vector	Not applicable.
	pNTAP-B Expression Vector	Not applicable.
	pNTAP-C Expression Vector	Not applicable.
	pNTAP-Mef2a Expression Control Vector	Not applicable.
	pCMV-Tag2-Mef2c Expression Control Vector	Not applicable.
	Lysis Buffer	Not applicable.
	0.5 M EDTA	EYE IRRITATION - Category 2A
	Streptavidin Resin	FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
	Streptavidin Binding Buffer	Not applicable.
	Streptavidin Elution Buffer	Not applicable.
	Streptavidin Supernatant Supplement	TOXIC TO REPRODUCTION (Unborn child) - Category 1B
	MS-Grade Calmodulin Resin	FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
	Calmodulin Binding Buffer	Not applicable.
	Calmodulin Elution Buffer	Not applicable.

### Composition/information on ingredients

Name	%	Classification
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	100	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
<b>0.5 M EDTA</b> Edetic acid	≥10 - ≤25	EYE IRRITATION - Category 2A
<b>Streptavidin Resin</b> Ethanol	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2 HNOC - Defatting irritant

## Section 15. Regulatory information

<b>Streptavidin Supernatant Supplement</b>		
calcium chloride	≤3	ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A
Imidazole	<1	ACUTE TOXICITY (oral) - Category 3 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION (Unborn child) - Category 1B
<b>MS-Grade Calmodulin Resin</b>		
Ethanol	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
Sodium chloride	≤3	HNO <sub>3</sub> - Defatting irritant EYE IRRITATION - Category 2A

### State regulations

- Massachusetts** : The following components are listed: 2-MERCAPTOETHANOL; ETHYL ALCOHOL; DENATURED ALCOHOL
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: THIOGLYCOL; 2-MERCAPTOETHANOL; ETHYL ALCOHOL; ALCOHOL
- Pennsylvania** : The following components are listed: ETHANOL, 2-MERCAPTO-; DENATURED ALCOHOL; ETHANOL

### 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.

### Inventory list

- Australia** : Not determined.
- Canada** : Not determined.
- 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** : Not determined.
- Philippines** : Not determined.
- Republic of Korea** : Not determined.

## Section 15. Regulatory information

<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

## Section 16. Other information

### History

<b>Date of issue</b>	: 01/23/2018
<b>Date of previous issue</b>	: 05/31/2016.
<b>Version</b>	: 7

Indicates information that has changed from previously issued version.

### Notice to reader

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