SAFETY DATA SHEET

InterPlay Adenoviral N-terminal TAP Vectors, Part Number 240214

Section 1. Identification

1.1 Product identifier

Product name: InterPlay Adenoviral N-terminal TAP Vectors, Part Number 240214

Part No. (Chemical Kit): 240214

Part No.

<table>
<thead>
<tr>
<th>Material uses</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>240214-51</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>240214-52</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>240214-53</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>240217-51</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>240008-51</td>
</tr>
</tbody>
</table>

Validation date: 3/30/2017

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

Material uses:

- pNTAP Shuttle vector-A: 0.02 ml
- pNTAP Shuttle vector-B: 0.02 ml
- pNTAP Shuttle vector-C: 0.02 ml
- Adenoviral pTAP Shuttle-CAT Vector: 0.02 ml (20 µg, 1 µg/µl)
- pShuttle-CMV-lacZ Control Vector: 0.01 ml (10 µg, 1 µg/µl)

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

OSHA/HCS status:

- pNTAP Shuttle vector-A
  - 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 Shuttle vector-B
  - 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 Shuttle vector-C
  - 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.

- Adenoviral pTAP Shuttle-CAT 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...
## Section 2. Hazards identification

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

Not classified.

### 2.2 GHS label elements

#### Signal word

- pNTAP Shuttle vector-A: No signal word.
- pNTAP Shuttle vector-B: No signal word.
- pNTAP Shuttle vector-C: No signal word.
- Adenoviral pTAP Shuttle-CAT Vector: No signal word.
- pShuttle-CMV-lacZ Control Vector: No signal word.

#### Hazard statements

- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

#### Precautionary statements

**Prevention**

- pNTAP Shuttle vector-A: Not applicable.
- pNTAP Shuttle vector-B: Not applicable.
- pNTAP Shuttle vector-C: Not applicable.
- Adenoviral pTAP Shuttle-CAT Vector: Not applicable.
- pShuttle-CMV-lacZ Control Vector: Not applicable.

**Response**

- pNTAP Shuttle vector-A: Not applicable.
- pNTAP Shuttle vector-B: Not applicable.
- pNTAP Shuttle vector-C: Not applicable.
- Adenoviral pTAP Shuttle-CAT Vector: Not applicable.
- pShuttle-CMV-lacZ Control Vector: Not applicable.

**Storage**

- pNTAP Shuttle vector-A: Not applicable.
- pNTAP Shuttle vector-B: Not applicable.
- pNTAP Shuttle vector-C: Not applicable.
- Adenoviral pTAP Shuttle-CAT Vector: Not applicable.
- pShuttle-CMV-lacZ Control Vector: Not applicable.

**Disposal**

- pNTAP Shuttle vector-A: Not applicable.
- pNTAP Shuttle vector-B: Not applicable.
- pNTAP Shuttle vector-C: Not applicable.
- Adenoviral pTAP Shuttle-CAT Vector: Not applicable.
- pShuttle-CMV-lacZ Control Vector: Not applicable.
Section 2. Hazards identification

**Supplemental label elements**

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>None known.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>None known.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>None known.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>None known.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>None known.</td>
</tr>
</tbody>
</table>

**2.3 Other hazards**

**Hazards not otherwise classified**

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>None known.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>None known.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>None known.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>None known.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>None known.</td>
</tr>
</tbody>
</table>

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>Mixture</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>Mixture</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>Mixture</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>Mixture</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>Mixture</td>
</tr>
</tbody>
</table>

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

There are no 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**

**Eye contact**

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>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.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>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.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Inhalation**

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
</tbody>
</table>
## Section 4. First aid measures

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>pNTAP Shuttle vector-A</strong></td>
<td>Wash out mouth with water. Remove victim to</td>
</tr>
<tr>
<td>Remove contaminated skin with plenty of water.</td>
<td>fresh air and keep at rest in a position</td>
</tr>
<tr>
<td>Remove contaminated clothing and shoes.</td>
<td>comfortable for breathing. Get medical</td>
</tr>
<tr>
<td>Get medical attention if symptoms occur.</td>
<td>attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>pNTAP Shuttle vector-B</strong></td>
<td>Wash out mouth with water. Remove victim to</td>
</tr>
<tr>
<td>Remove contaminated skin with plenty of water.</td>
<td>fresh air and keep at rest in a position</td>
</tr>
<tr>
<td>Remove contaminated clothing and shoes.</td>
<td>comfortable for breathing. Get medical</td>
</tr>
<tr>
<td>Get medical attention if symptoms occur.</td>
<td>attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>pNTAP Shuttle vector-C</strong></td>
<td>Wash out mouth with water. Remove victim to</td>
</tr>
<tr>
<td>Remove contaminated skin with plenty of water.</td>
<td>fresh air and keep at rest in a position</td>
</tr>
<tr>
<td>Remove contaminated clothing and shoes.</td>
<td>comfortable for breathing. Get medical</td>
</tr>
<tr>
<td>Get medical attention if symptoms occur.</td>
<td>attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>Adenoviral pTAP Shuttle-CAT Vector</strong></td>
<td>Wash out mouth with water. Remove victim to</td>
</tr>
<tr>
<td>Remove contaminated skin with plenty of water.</td>
<td>fresh air and keep at rest in a position</td>
</tr>
<tr>
<td>Remove contaminated clothing and shoes.</td>
<td>comfortable for breathing. Get medical</td>
</tr>
<tr>
<td>Get medical attention if symptoms occur.</td>
<td>attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>pShuttle-CMV-lacZ Control Vector</strong></td>
<td>Wash out mouth with water. Remove victim to</td>
</tr>
<tr>
<td>Remove contaminated skin with plenty of water.</td>
<td>fresh air and keep at rest in a position</td>
</tr>
<tr>
<td>Remove contaminated clothing and shoes.</td>
<td>comfortable for breathing. Get medical</td>
</tr>
<tr>
<td>Get medical attention if symptoms occur.</td>
<td>attention if symptoms occur.</td>
</tr>
</tbody>
</table>

### Ingestion

- **pNTAP Shuttle vector-A**: 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 Shuttle vector-B**: 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 Shuttle vector-C**: 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.

- **Adenoviral pTAP Shuttle-CAT 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.

- **pShuttle-CMV-lacZ 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.
Section 4. First aid measures

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

**Eye contact**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Inhalation**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Skin contact**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Ingestion**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

Over-exposure signs/symptoms

**Eye contact**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Inhalation**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Skin contact**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Ingestion**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary
Section 4. First aid measures

Notes to physician:

- **pNTAP Shuttle vector-A**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- **pNTAP Shuttle vector-B**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- **pNTAP Shuttle vector-C**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- **Adenoviral pTAP Shuttle-CAT Vector**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- **pShuttle-CMV-lacZ Control Vector**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments:

- **pNTAP Shuttle vector-A**: No specific treatment.
- **pNTAP Shuttle vector-B**: No specific treatment.
- **pNTAP Shuttle vector-C**: No specific treatment.
- **Adenoviral pTAP Shuttle-CAT Vector**: No specific treatment.
- **pShuttle-CMV-lacZ Control Vector**: No specific treatment.

Protection of first-aiders:

- **pNTAP Shuttle vector-A**: No action shall be taken involving any personal risk or without suitable training.
- **pNTAP Shuttle vector-B**: No action shall be taken involving any personal risk or without suitable training.
- **pNTAP Shuttle vector-C**: No action shall be taken involving any personal risk or without suitable training.
- **Adenoviral pTAP Shuttle-CAT Vector**: No action shall be taken involving any personal risk or without suitable training.
- **pShuttle-CMV-lacZ Control Vector**: 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:

- **pNTAP Shuttle vector-A**: Use an extinguishing agent suitable for the surrounding fire.
- **pNTAP Shuttle vector-B**: Use an extinguishing agent suitable for the surrounding fire.
- **pNTAP Shuttle vector-C**: Use an extinguishing agent suitable for the surrounding fire.
- **Adenoviral pTAP Shuttle-CAT Vector**: Use an extinguishing agent suitable for the surrounding fire.
- **pShuttle-CMV-lacZ Control Vector**: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media:

- **pNTAP Shuttle vector-A**: None known.
- **pNTAP Shuttle vector-B**: None known.
- **pNTAP Shuttle vector-C**: None known.
- **Adenoviral pTAP Shuttle-CAT Vector**: None known.
- **pShuttle-CMV-lacZ Control Vector**: None known.

5.2 Special hazards arising from the substance or mixture

Date of issue: 03/30/2017
### Section 5. Fire-fighting measures

#### Specific hazards arising from the chemical

<table>
<thead>
<tr>
<th>Vector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
</tbody>
</table>

#### Hazardous thermal decomposition products

<table>
<thead>
<tr>
<th>Vector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

#### 5.3 Advice for firefighters

#### Special protective actions for fire-fighters

<table>
<thead>
<tr>
<th>Vector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

#### Special protective equipment for fire-fighters

<table>
<thead>
<tr>
<th>Vector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>
Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

- **pNTAP Shuttle vector-A**: 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.

- **pNTAP Shuttle vector-B**: 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.

- **pNTAP Shuttle vector-C**: 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.

- **Adenoviral pTAP Shuttle-CAT 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.

- **pShuttle-CMV-lacZ 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.

For emergency responders:

- **pNTAP Shuttle vector-A**: 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 Shuttle vector-B**: 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 Shuttle vector-C**: 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".

- **Adenoviral pTAP Shuttle-CAT 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".

- **pShuttle-CMV-lacZ 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".
## Section 6. Accidental release measures

### 6.2 Environmental precautions

<table>
<thead>
<tr>
<th>Vector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>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). 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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>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). 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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>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). 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.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>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). 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.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>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). 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.</td>
</tr>
</tbody>
</table>

### 6.3 Methods and materials for containment and cleaning up

<table>
<thead>
<tr>
<th>Methods for cleaning up</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>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.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>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.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>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.</td>
</tr>
</tbody>
</table>
### Section 7. Handling and storage

#### 7.1 Precautions for safe handling

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Advice on general occupational hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>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.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>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.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>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.</td>
</tr>
</tbody>
</table>

#### 7.2 Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Advice on general occupational hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>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.</td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

<table>
<thead>
<tr>
<th>Vector Type</th>
<th>Handling and Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>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.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>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.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>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.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>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.</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)

**Recommendations**
- pNTAP Shuttle vector-A: Industrial applications, Professional applications.
- pNTAP Shuttle vector-B: Industrial applications, Professional applications.
- pNTAP Shuttle vector-C: Industrial applications, Professional applications.
- Adenoviral pTAP Shuttle-CAT Vector: Industrial applications, Professional applications.
- pShuttle-CMV-lacZ Control Vector: Industrial applications, Professional applications.

**Industrial sector specific solutions**
- pNTAP Shuttle vector-A: Not applicable.
- pNTAP Shuttle vector-B: Not applicable.
- pNTAP Shuttle vector-C: Not applicable.
- Adenoviral pTAP Shuttle-CAT Vector: Not applicable.
- pShuttle-CMV-lacZ Control Vector: Not applicable.
Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

Individual protection measures

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

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

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.

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

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

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

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state: pNTAP Shuttle vector-A Liquid.
pNTAP Shuttle vector-B Liquid.
pNTAP Shuttle vector-C Liquid.
Adenoviral pTAP Shuttle-CAT Liquid.
Vector
pShuttle-CMV-lacZ Control Vector Liquid.

Date of issue: 03/30/2017
## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>pNTAP Shuttle vector-A</th>
<th>pNTAP Shuttle vector-B</th>
<th>pNTAP Shuttle vector-C</th>
<th>Adenoviral pTAP Shuttle-CAT Vector</th>
<th>pShuttle-CMV-lacZ Control Vector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Color</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>0°C (32°F)</td>
<td>0°C (32°F)</td>
<td>0°C (32°F)</td>
<td>0°C (32°F)</td>
<td>0°C (32°F)</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>100°C (212°F)</td>
<td>100°C (212°F)</td>
<td>100°C (212°F)</td>
<td>100°C (212°F)</td>
<td>100°C (212°F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>
### Section 9. Physical and chemical properties

#### Lower and upper explosive (flammable) limits
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.

#### Vapor pressure
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.

#### Vapor density
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.

#### Relative density
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.

#### Solubility
- pNTAP Shuttle vector-A: Easily soluble in the following materials: cold water and hot water.
- pNTAP Shuttle vector-B: Easily soluble in the following materials: cold water and hot water.
- pNTAP Shuttle vector-C: Easily soluble in the following materials: cold water and hot water.
- Adenoviral pTAP Shuttle-CAT Vector: Easily soluble in the following materials: cold water and hot water.
- pShuttle-CMV-lacZ Control Vector: Easily soluble in the following materials: cold water and hot water.

#### Partition coefficient: n-octanol/water
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.

#### Auto-ignition temperature
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.

#### Decomposition temperature
- pNTAP Shuttle vector-A: Not available.
- pNTAP Shuttle vector-B: Not available.
- pNTAP Shuttle vector-C: Not available.
- Adenoviral pTAP Shuttle-CAT Vector: Not available.
- pShuttle-CMV-lacZ Control Vector: Not available.
# Section 9. Physical and chemical properties

## Viscosity

<table>
<thead>
<tr>
<th>Vector</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>Not available.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>Not available.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>Not available.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>Not available.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

# Section 10. Stability and reactivity

## 10.1 Reactivity

<table>
<thead>
<tr>
<th>Vector</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
</tbody>
</table>

## 10.2 Chemical stability

<table>
<thead>
<tr>
<th>Vector</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

## 10.3 Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Vector</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
</tbody>
</table>

## 10.4 Conditions to avoid

<table>
<thead>
<tr>
<th>Vector</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

## 10.5 Incompatible materials

<table>
<thead>
<tr>
<th>Vector</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>pNTAP Shuttle vector-A</td>
<td>May react or be incompatible with oxidizing materials.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-B</td>
<td>May react or be incompatible with oxidizing materials.</td>
</tr>
<tr>
<td>pNTAP Shuttle vector-C</td>
<td>May react or be incompatible with oxidizing materials.</td>
</tr>
<tr>
<td>Adenoviral pTAP Shuttle-CAT Vector</td>
<td>May react or be incompatible with oxidizing materials.</td>
</tr>
<tr>
<td>pShuttle-CMV-lacZ Control Vector</td>
<td>May react or be incompatible with oxidizing materials.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

10.6 Hazardous decomposition products

- pNTAP Shuttle vector-A
  Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- pNTAP Shuttle vector-B
  Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- pNTAP Shuttle vector-C
  Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Adenoviral pTAP Shuttle-CAT Vector
  Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- pShuttle-CMV-lacZ Control Vector
  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**
  Not available.

- **Irritation/Corrosion**
  Not available.

- **Sensitization**
  Not available.

- **Mutagenicity**
  Not available.

- **Carcinogenicity**
  Not available.

- **Reproductive toxicity**
  Not available.

- **Teratogenicity**
  Not available.

- **Specific target organ toxicity (single exposure)**
  Not available.

- **Specific target organ toxicity (repeated exposure)**
  Not available.

- **Aspiration hazard**
  Not available.

- **Information on the likely routes of exposure**
  Not available.

- **Potential acute health effects**
  Not available.

Date of issue: 03/30/2017
Section 11. Toxicological information

**Eye contact**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Inhalation**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Skin contact**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Ingestion**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

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

**Eye contact**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Inhalation**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Skin contact**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: No specific data.

**Ingestion**
- pNTAP Shuttle vector-A: No specific data.
- pNTAP Shuttle vector-B: No specific data.
- pNTAP Shuttle vector-C: No specific data.
- Adenoviral pTAP Shuttle-CAT Vector: No specific data.
- pShuttle-CMV-lacZ Control Vector: 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.

Date of issue: 03/30/2017
Section 11. Toxicological information

**Long term exposure**

**Potential immediate effects**
- Not available.

**Potential delayed effects**
- Not available.

**Potential chronic health effects**

**General**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Carcinogenicity**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Mutagenicity**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Teratogenicity**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Developmental effects**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Fertility effects**
- pNTAP Shuttle vector-A: No known significant effects or critical hazards.
- pNTAP Shuttle vector-B: No known significant effects or critical hazards.
- pNTAP Shuttle vector-C: No known significant effects or critical hazards.
- Adenoviral pTAP Shuttle-CAT Vector: No known significant effects or critical hazards.
- pShuttle-CMV-lacZ Control Vector: No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
- Not available.
Section 12. Ecological information

12.1 Toxicity
Not available.

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Soil/water partition coefficient ($K_{OC}$) : 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. Empty containers orliners may retain some product residues. 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

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted. Clean Water Act (CWA) 311: Edetic acid
Section 15. Regulatory information

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 Classification
   Composition/information on ingredients
   No products were found.

State regulations
Massachusetts  : None of the components are listed.
New York  : None of the components are listed.
New Jersey  : None of the components are listed.
Pennsylvania  : None of the components are listed.
California Prop. 65  : None of the components are listed.

No products were found.

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  : All components are listed or exempted.
Canada inventory  : All components are listed or exempted.
China  : All components are listed or exempted.
Europe  : All components are listed or exempted.
Section 15. Regulatory information

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<th>Details</th>
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Section 16. Other information

History

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