

# SAFETY DATA SHEET



SureGuide Cas9 Programmable Nuclease Kit - 20 Reactions, Part Number 5190-7715

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

### 1.1 Product identifier

**Product name** : SureGuide Cas9 Programmable Nuclease Kit - 20 Reactions, Part Number 5190-7715

**UK (GB) REACH Registration number**

| Registration number                                                                                                | Legal entity |
|--------------------------------------------------------------------------------------------------------------------|--------------|
| <b>RNase Free Water</b><br>Exempt from REACH: According to the provisions of Article 2(7)(a) and Annex IV of REACH | -            |

**CAS number** :

|                                                      |                 |
|------------------------------------------------------|-----------------|
| <input checked="" type="checkbox"/> RNase Free Water | 7732-18-5       |
| Control DNA Target                                   | Not applicable. |
| 10X Cas9 Digestion Buffer                            | Not applicable. |
| Cas9 Nuclease                                        | Not applicable. |
| Control gRNA                                         | Not applicable. |

**Part no. (chemical kit)** : 5190-7715

**Part no.** :

|                                                      |           |
|------------------------------------------------------|-----------|
| <input checked="" type="checkbox"/> RNase Free Water | 740000-42 |
| Control DNA Target                                   | 5190-7536 |
| 10X Cas9 Digestion Buffer                            | 5190-7537 |
| Cas9 Nuclease                                        | 5190-7538 |
| Control gRNA                                         | 5190-7539 |

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

**Identified uses** :

|                                                         |                           |
|---------------------------------------------------------|---------------------------|
| <input checked="" type="checkbox"/> Analytical reagent. |                           |
| <input checked="" type="checkbox"/> RNase Free Water    | 1.5 ml                    |
| Control DNA Target                                      | 0.022 ml (20 µl 50 ng/µl) |
| 10X Cas9 Digestion Buffer                               | 0.04 ml                   |
| Cas9 Nuclease                                           | 0.02 ml (20 reactions)    |
| Control gRNA                                            | 0.01 ml (10 µl 1 µM)      |

**Uses advised against** : None known.

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

Agilent Technologies LDA UK Ltd.  
5500 Lakeside Cheadle Royal Business Park,  
Cheadle, Cheshire, SK8 3GR  
United Kingdom  
Tel: +44 (0) 345 712 5292

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

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

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

|                           |   |                                                     |                            |
|---------------------------|---|-----------------------------------------------------|----------------------------|
| <b>Product definition</b> | : | <input checked="" type="checkbox"/> Nase Free Water | Mono-constituent substance |
|                           |   | Control DNA Target                                  | Mixture                    |
|                           |   | 10X Cas9 Digestion Buffer                           | Mixture                    |
|                           |   | Cas9 Nuclease                                       | Mixture                    |
|                           |   | Control gRNA                                        | Mixture                    |

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

#### Cas9 Nuclease

H317 SKIN SENSITISATION Category 1

|                                                     |                                                                                                   |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Nase Free Water | The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended. |
| Control DNA Target                                  | The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended. |
| 10X Cas9 Digestion Buffer                           | The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended. |
| Cas9 Nuclease                                       | The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.     |
| Control gRNA                                        | The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended. |

|                                        |   |                                                               |                                                                                                      |
|----------------------------------------|---|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Ingredients of unknown toxicity</b> | : | <input checked="" type="checkbox"/> 10X Cas9 Digestion Buffer | Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30% |
|                                        |   | Cas9 Nuclease                                                 | Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10%      |
|                                        |   |                                                               | Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 30 - 60% |

|                                           |   |                                                               |                                                                           |
|-------------------------------------------|---|---------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Ingredients of unknown ecotoxicity</b> | : | <input checked="" type="checkbox"/> 10X Cas9 Digestion Buffer | Contains 3% of components with unknown hazards to the aquatic environment |
|-------------------------------------------|---|---------------------------------------------------------------|---------------------------------------------------------------------------|

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

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

### 2.2 Label elements

**Hazard pictograms** : Cas9 Nuclease



|                    |   |                                                     |                 |
|--------------------|---|-----------------------------------------------------|-----------------|
| <b>Signal word</b> | : | <input checked="" type="checkbox"/> Nase Free Water | No signal word. |
|                    |   | Control DNA Target                                  | No signal word. |
|                    |   | 10X Cas9 Digestion Buffer                           | No signal word. |
|                    |   | Cas9 Nuclease                                       | Warning         |
|                    |   | Control gRNA                                        | No signal word. |

|                          |   |                                                     |                                                   |
|--------------------------|---|-----------------------------------------------------|---------------------------------------------------|
| <b>Hazard statements</b> | : | <input checked="" type="checkbox"/> Nase Free Water | No known significant effects or critical hazards. |
|                          |   | Control DNA Target                                  | No known significant effects or critical hazards. |
|                          |   | 10X Cas9 Digestion Buffer                           | No known significant effects or critical hazards. |
|                          |   | Cas9 Nuclease                                       | H317 - May cause an allergic skin reaction.       |
|                          |   | Control gRNA                                        | No known significant effects or critical hazards. |

### Precautionary statements

|                   |   |                                                     |                                                                  |
|-------------------|---|-----------------------------------------------------|------------------------------------------------------------------|
| <b>Prevention</b> | : | <input checked="" type="checkbox"/> Nase Free Water | Not applicable.                                                  |
|                   |   | Control DNA Target                                  | Not applicable.                                                  |
|                   |   | 10X Cas9 Digestion Buffer                           | Not applicable.                                                  |
|                   |   | Cas9 Nuclease                                       | P280 - Wear protective gloves.<br>P261 - Avoid breathing vapour. |
|                   |   | Control gRNA                                        | Not applicable.                                                  |

## SECTION 2: Hazards identification

|                                                                                                                                           |                                                                                                                                                |                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Response</b>                                                                                                                           | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br>Cas9 Nuclease                     | Not applicable.<br>Not applicable.<br>Not applicable.<br>P362 + P364 - Take off contaminated clothing and wash it before reuse.<br>P302 + P352 - IF ON SKIN: Wash with plenty of water.<br>P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention. |
| <b>Storage</b>                                                                                                                            | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br>Cas9 Nuclease<br>Control gRNA     | Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.                                                                                                                                                                                  |
| <b>Disposal</b>                                                                                                                           | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br>Cas9 Nuclease                     | Not applicable.<br>Not applicable.<br>Not applicable.<br>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.                                                                                            |
| <b>Hazardous ingredients</b>                                                                                                              | : <input checked="" type="checkbox"/> Cas9 Nuclease                                                                                            | 2-mercaptoethanol                                                                                                                                                                                                                                                            |
| <b>Supplemental label elements</b>                                                                                                        | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br><br>Cas9 Nuclease<br>Control gRNA | Not applicable.<br>Not applicable.<br>Contains 2,4,7,9-Tetramethyldec-5-yne-4,7-diol, ethoxylated.<br>May produce an allergic reaction.<br>Safety data sheet available on request.<br>Not applicable.<br>Not applicable.                                                     |
| <b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b> | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br>Cas9 Nuclease<br>Control gRNA     | Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.                                                                                                                                                                                  |
| <b>Special packaging requirements</b>                                                                                                     |                                                                                                                                                |                                                                                                                                                                                                                                                                              |
| <b>Containers to be fitted with child-resistant fastenings</b>                                                                            | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br>Cas9 Nuclease<br>Control gRNA     | Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.                                                                                                                                                                                  |
| <b>Tactile warning of danger</b>                                                                                                          | : <input checked="" type="checkbox"/> RNase Free Water<br>Control DNA Target<br>10X Cas9 Digestion Buffer<br>Cas9 Nuclease<br>Control gRNA     | Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.                                                                                                                                                                                  |

### 2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

|                                                      | PBT | P   | B   | T   | vPvB                       | vP  | vB  |
|------------------------------------------------------|-----|-----|-----|-----|----------------------------|-----|-----|
| <input checked="" type="checkbox"/> RNase Free Water |     |     |     |     |                            |     |     |
| Not applicable (Inorganic)                           |     | N/A | N/A | N/A | Not applicable (Inorganic) | N/A | N/A |

**SECTION 2: Hazards identification**

|                                                                                                                   |                                                                                       |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Control DNA Target                                                            | This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| 10X Cas9 Digestion Buffer                                                                                         | This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| Cas9 Nuclease                                                                                                     | This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| Control gRNA                                                                                                      | This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| <b>Other hazards which do not result in classification</b> : <input checked="" type="checkbox"/> RNase Free Water | None known.                                                                           |
| Control DNA Target                                                                                                | None known.                                                                           |
| 10X Cas9 Digestion Buffer                                                                                         | None known.                                                                           |
| Cas9 Nuclease                                                                                                     | None known.                                                                           |
| Control gRNA                                                                                                      | None known.                                                                           |

**SECTION 3: Composition/information on ingredients**

|                       |                                                        |                            |
|-----------------------|--------------------------------------------------------|----------------------------|
| <b>3.1 Substances</b> | : <input checked="" type="checkbox"/> RNase Free Water | Mono-constituent substance |
|                       | Control DNA Target                                     | Mixture                    |
|                       | 10X Cas9 Digestion Buffer                              | Mixture                    |
|                       | Cas9 Nuclease                                          | Mixture                    |
|                       | Control gRNA                                           | Mixture                    |

| Product/ingredient name                                                                      | Identifiers                                                                       | %         | Classification                                                                                                                                                                                                                                       | Type    |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <input checked="" type="checkbox"/> RNase Free Water<br>water                                | UK (GB) REACH #: Annex IV<br>REACH #: Annex IV<br>EC: 231-791-2<br>CAS: 7732-18-5 | 100       | Not classified.                                                                                                                                                                                                                                      | [1]     |
| <b>Cas9 Nuclease</b><br>Glycerol                                                             | UK (GB) REACH #: Annex V<br>REACH #: Annex V<br>EC: 200-289-5<br>CAS: 56-81-5     | ≥50 - ≤75 | Not classified.                                                                                                                                                                                                                                      | [2]     |
| 2-Mercaptoethanol                                                                            | EC: 200-464-6<br>CAS: 60-24-2                                                     | ≤0.3      | Acute Tox. 3, H301<br>Acute Tox. 2, H310<br>Acute Tox. 3, H331<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Skin Sens. 1A, H317<br>Repr. 2, H361f<br>STOT RE 2, H373<br>(heart, liver)<br>Aquatic Acute 1, H400<br>(M=1)<br>Aquatic Chronic 2, H411 | [1]     |
| Poly(oxy-1,2-ethanediyl), .alpha.-[<br>(1,1,3,3-tetramethylbutyl)phenyl]-<br>omega.-hydroxy- | CAS: 9036-19-5                                                                    | <0.1      | Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Aquatic Acute 1, H400<br>(M=10)<br>Aquatic Chronic 1, H410 (M=1)<br><b>See Section 16 for the full text of the H statements declared above.</b>                                     | [1] [3] |

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

### SECTION 3: Composition/information on ingredients

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| Nase Free Water | [1] Constituent                                                |
| Cas9 Nuclease   | [1] Substance classified with a health or environmental hazard |
|                 | [2] Substance with a workplace exposure limit                  |
|                 | [3] Substance of equivalent concern                            |

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

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

|                     |   |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|---|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : | Nase Free Water           | 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.                                                                                                                                                                                                                                                                                                                                                                                      |
|                     |   | Control DNA Target        | 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.                                                                                                                                                                                                                                                                                                                                                                                      |
|                     |   | 10X Cas9 Digestion 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.                                                                                                                                                                                                                                                                                                                                                                                      |
|                     |   | Cas9 Nuclease             | 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.                                                                                                                                                                                                                                                                                                                                           |
|                     |   | Control gRNA              | 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>   | : | Nase Free Water           | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                     |   | Control DNA Target        | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                     |   | 10X Cas9 Digestion Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.                                                                                                                                                                                                                                                                        |
|                     |   | Cas9 Nuclease             | 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. |
|                     |   | Control gRNA              | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Skin contact</b> | : | Nase Free Water           | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                     |   | Control DNA Target        | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                     |   | 10X Cas9 Digestion Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                     |   | Cas9 Nuclease             | 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure.                                                                                                                                                                                                                                                                   |

**SECTION 4: First aid measures**

|                                   |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   |                           | Wash clothing before reuse. Clean shoes thoroughly before reuse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                   | Control gRNA              | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Ingestion</b>                  | : RNase Free Water        | Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                   | Control DNA Target        | Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                   | 10X Cas9 Digestion Buffer | Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                   | Cas9 Nuclease             | Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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. |
|                                   | Control gRNA              | Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Protection of first-aiders</b> | : RNase Free Water        | No action shall be taken involving any personal risk or without suitable training.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                   | Control DNA Target        | No action shall be taken involving any personal risk or without suitable training.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                   | 10X Cas9 Digestion Buffer | No action shall be taken involving any personal risk or without suitable training.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                   | Cas9 Nuclease             | 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   | Control gRNA              | No action shall be taken involving any personal risk or without suitable training.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**4.2 Most important symptoms and effects, both acute and delayed**

Over-exposure signs/symptoms

|                    |                           |                   |
|--------------------|---------------------------|-------------------|
| <b>Eye contact</b> | : RNase Free Water        | No specific data. |
|                    | Control DNA Target        | No specific data. |
|                    | 10X Cas9 Digestion Buffer | No specific data. |
|                    | Cas9 Nuclease             | No specific data. |
|                    | Control gRNA              | No specific data. |

## SECTION 4: First aid measures

|                     |   |                           |                                                                      |
|---------------------|---|---------------------------|----------------------------------------------------------------------|
| <b>Inhalation</b>   | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | No specific data.                                                    |
|                     |   | Control gRNA              | No specific data.                                                    |
| <b>Skin contact</b> | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | Adverse symptoms may include the following:<br>irritation<br>redness |
|                     |   | Control gRNA              | No specific data.                                                    |
| <b>Ingestion</b>    | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | No specific data.                                                    |
|                     |   | Control gRNA              | No specific data.                                                    |

### 4.3 Indication of any immediate medical attention and special treatment needed

|                            |   |                           |                                                                                                                                                                     |
|----------------------------|---|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Notes to physician</b>  | : | ☑Nase Free Water          | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.                                           |
|                            |   | Control DNA Target        | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.                                           |
|                            |   | 10X Cas9 Digestion Buffer | 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. |
|                            |   | Cas9 Nuclease             | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.                                           |
|                            |   | Control gRNA              | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.                                           |
| <b>Specific treatments</b> | : | ☑Nase Free Water          | No specific treatment.                                                                                                                                              |
|                            |   | Control DNA Target        | No specific treatment.                                                                                                                                              |
|                            |   | 10X Cas9 Digestion Buffer | No specific treatment.                                                                                                                                              |
|                            |   | Cas9 Nuclease             | No specific treatment.                                                                                                                                              |
|                            |   | Control gRNA              | No specific treatment.                                                                                                                                              |

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

|                                       |   |                           |                                                               |
|---------------------------------------|---|---------------------------|---------------------------------------------------------------|
| <b>Suitable extinguishing media</b>   | : | ☑Nase Free Water          | Use an extinguishing agent suitable for the surrounding fire. |
|                                       |   | Control DNA Target        | Use an extinguishing agent suitable for the surrounding fire. |
|                                       |   | 10X Cas9 Digestion Buffer | Use an extinguishing agent suitable for the surrounding fire. |
|                                       |   | Cas9 Nuclease             | Use an extinguishing agent suitable for the surrounding fire. |
|                                       |   | Control gRNA              | Use an extinguishing agent suitable for the surrounding fire. |
| <b>Unsuitable extinguishing media</b> | : | ☑Nase Free Water          | None known.                                                   |
|                                       |   | Control DNA Target        | None known.                                                   |
|                                       |   | 10X Cas9 Digestion Buffer | None known.                                                   |
|                                       |   | Cas9 Nuclease             | None known.                                                   |
|                                       |   | Control gRNA              | None known.                                                   |

### 5.2 Special hazards arising from the substance or mixture

## SECTION 5: Firefighting measures

|                                              |   |                           |                                                                                                                                                                        |
|----------------------------------------------|---|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hazards from the substance or mixture</b> | : | ☒Nase Free Water          | In a fire or if heated, a pressure increase will occur and the container may burst.                                                                                    |
|                                              |   | Control DNA Target        | In a fire or if heated, a pressure increase will occur and the container may burst.                                                                                    |
|                                              |   | 10X Cas9 Digestion Buffer | In a fire or if heated, a pressure increase will occur and the container may burst.                                                                                    |
|                                              |   | Cas9 Nuclease             | In a fire or if heated, a pressure increase will occur and the container may burst.                                                                                    |
|                                              |   | Control gRNA              | In a fire or if heated, a pressure increase will occur and the container may burst.                                                                                    |
| <b>Hazardous combustion products</b>         | : | ☒Nase Free Water          | No specific data.                                                                                                                                                      |
|                                              |   | Control DNA Target        | No specific data.                                                                                                                                                      |
|                                              |   | 10X Cas9 Digestion Buffer | Decomposition products may include the following materials:<br><br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides<br>halogenated compounds<br>metal oxide/oxides |
|                                              |   | Cas9 Nuclease             | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>halogenated compounds<br>metal oxide/oxides                        |
|                                              |   | Control gRNA              | No specific data.                                                                                                                                                      |

### 5.3 Advice for firefighters

|                                                       |   |                           |                                                                                                                                                                                             |
|-------------------------------------------------------|---|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Special protective actions for fire-fighters</b>   | : | ☒Nase Free Water          | 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. |
|                                                       |   | Control DNA Target        | 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. |
|                                                       |   | 10X Cas9 Digestion 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. |
|                                                       |   | Cas9 Nuclease             | 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. |
|                                                       |   | Control gRNA              | 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. |
| <b>Special protective equipment for fire-fighters</b> | : | ☒Nase Free Water          | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.                         |
|                                                       |   | Control DNA Target        | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.                         |
|                                                       |   | 10X Cas9 Digestion Buffer | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.                         |
|                                                       |   | Cas9 Nuclease             | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.                         |
|                                                       |   | Control gRNA              | 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

|                                    |   |                           |                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------|---|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>For non-emergency personnel</b> | : | ☑Nase Free Water          | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.                                                                                                                           |
|                                    |   | Control DNA Target        | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.                                                                                                                           |
|                                    |   | 10X Cas9 Digestion Buffer | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.                                                                                                                           |
|                                    |   | Cas9 Nuclease             | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
|                                    |   | Control gRNA              | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.                                                                                                                           |

|                                 |   |                           |                                                                                                                                                                                                           |
|---------------------------------|---|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>For emergency responders</b> | : | ☑Nase Free Water          | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
|                                 |   | Control DNA Target        | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
|                                 |   | 10X Cas9 Digestion Buffer | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
|                                 |   | Cas9 Nuclease             | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
|                                 |   | Control gRNA              | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |

### 6.2 Environmental precautions

|   |                           |                                                                                                                                                                                                                       |
|---|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| : | ☑Nase Free Water          | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
|   | Control DNA Target        | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
|   | 10X Cas9 Digestion Buffer | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
|   | Cas9 Nuclease             | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant                                                                                                 |

## SECTION 6: Accidental release measures

|              |                                                                                                                                                                                                                                                                                                                                    |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control gRNA | <p>authorities if the product has caused environmental pollution (sewers, waterways, soil or air).<br/>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).</p> |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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

|                                                          |                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Methods for cleaning up</b> : RNase Free Water</p> | <p>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.</p> |
| Control DNA Target                                       | <p>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.</p> |
| 10X Cas9 Digestion Buffer                                | <p>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.</p> |
| Cas9 Nuclease                                            | <p>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.</p> |
| Control gRNA                                             | <p>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.</p> |

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

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

|                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Protective measures</b> : RNase Free Water</p> | <p>Put on appropriate personal protective equipment (see Section 8).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Control DNA Target                                   | <p>Put on appropriate personal protective equipment (see Section 8).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10X Cas9 Digestion Buffer                            | <p>Put on appropriate personal protective equipment (see Section 8).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Cas9 Nuclease                                        | <p>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 ingest. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.</p> |
| Control gRNA                                         | <p>Put on appropriate personal protective equipment (see Section 8).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## SECTION 7: Handling and storage

### Advice on general occupational hygiene

: RNase Free Water

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.

Control DNA Target

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.

10X Cas9 Digestion 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.

Cas9 Nuclease

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.

Control gRNA

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

#### Storage

: RNase Free Water

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

Control DNA Target

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

10X Cas9 Digestion Buffer

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

Cas9 Nuclease

Store in accordance with local regulations. Store in original

## SECTION 7: Handling and storage

Control gRNA

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

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

### 7.3 Specific end use(s)

|                                             |   |                           |                                                     |
|---------------------------------------------|---|---------------------------|-----------------------------------------------------|
| <b>Recommendations</b>                      | : | ☑ RNase Free Water        | Industrial applications, Professional applications. |
|                                             |   | Control DNA Target        | Industrial applications, Professional applications. |
| <b>Industrial sector specific solutions</b> | : | 10X Cas9 Digestion Buffer | Industrial applications, Professional applications. |
|                                             |   | Cas9 Nuclease             | Industrial applications, Professional applications. |
|                                             |   | Control gRNA              | Industrial applications, Professional applications. |
|                                             |   | ☑ RNase Free Water        | Not available.                                      |
|                                             |   | Control DNA Target        | Not available.                                      |
|                                             |   | 10X Cas9 Digestion Buffer | Not available.                                      |
|                                             |   | Cas9 Nuclease             | Not available.                                      |
|                                             |   | Control gRNA              | Not available.                                      |

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

| Product/ingredient name     | Exposure limit values                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------|
| ☑ Cas9 Nuclease<br>Glycerol | <b>EH40/2005 WELs (United Kingdom (UK), 1/2020).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist |

#### Biological exposure indices

No exposure indices known.

**Recommended monitoring procedures** : ☑ Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

| Product/ingredient name              | Type | Exposure          | Value              | Population         | Effects  |
|--------------------------------------|------|-------------------|--------------------|--------------------|----------|
| ☑ Cas9 Nuclease<br>2-Mercaptoethanol | DNEL | Short term Oral   | 0.025 mg/kg bw/day | General population | Systemic |
|                                      | DNEL | Long term Oral    | 0.025 mg/kg bw/day | General population | Systemic |
|                                      | DNEL | Short term Dermal | 0.05 mg/kg bw/day  | Workers            | Systemic |
|                                      | DNEL | Long term Dermal  | 0.05 mg/kg bw/day  | Workers            | Systemic |

## SECTION 8: Exposure controls/personal protection

|  |      |                          |                        |         |          |
|--|------|--------------------------|------------------------|---------|----------|
|  | DNEL | Short term<br>Inhalation | 0.17 mg/m <sup>3</sup> | Workers | Systemic |
|  | DNEL | Long term<br>Inhalation  | 0.17 mg/m <sup>3</sup> | Workers | Systemic |

### PNECs

No PNECs available

### 8.2 Exposure controls

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

#### 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.

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

## SECTION 9: Physical and chemical properties

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

### 9.1 Information on basic physical and chemical properties

#### Appearance

**Physical state** : Nase Free Water      Liquid.  
Control DNA Target      Liquid.  
10X Cas9 Digestion      Liquid.  
Buffer  
Cas9 Nuclease      Liquid.  
Control gRNA      Liquid.

**Colour** : Nase Free Water      Colourless.  
Control DNA Target      Not available.  
10X Cas9 Digestion      Not available.  
Buffer  
Cas9 Nuclease      Not available.  
Control gRNA      Not available.

**SECTION 9: Physical and chemical properties**

**Odour** : Nase Free Water Odourless.  
 Control DNA Target Not available.  
 10X Cas9 Digestion Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA Not available.

**Odour threshold** : Nase Free Water Not available.  
 Control DNA Target Not available.  
 10X Cas9 Digestion Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA Not available.

**Melting point/freezing point** : Nase Free Water 0°C  
 Control DNA Target 0°C  
 10X Cas9 Digestion Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA 0°C

**Initial boiling point and boiling range** : Nase Free Water 100°C  
 Control DNA Target 100°C  
 10X Cas9 Digestion Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA 100°C

**Flammability** : Nase Free Water Not applicable.  
 Control DNA Target Not applicable.  
 10X Cas9 Digestion Not applicable.  
 Buffer  
 Cas9 Nuclease Not applicable.  
 Control gRNA Not applicable.

**Upper/lower flammability or explosive limits** : Nase Free Water Not available.  
 Control DNA Target Not available.  
 10X Cas9 Digestion Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA Not available.

**Flash point** :

| Ingredient name                                   | Closed cup |        | Open cup |        |
|---------------------------------------------------|------------|--------|----------|--------|
|                                                   | °C         | Method | °C       | Method |
| <input checked="" type="checkbox"/> Cas9 Nuclease |            |        |          |        |
| glycerol                                          | -          | -      | 177      | -      |

**Auto-ignition temperature** :

| Ingredient name                                   | °C  | Method |
|---------------------------------------------------|-----|--------|
| <input checked="" type="checkbox"/> Cas9 Nuclease |     |        |
| glycerol                                          | 370 | -      |

**Decomposition temperature** : Nase Free Water Not available.  
 Control DNA Target Not available.  
 10X Cas9 Digestion Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA Not available.

**pH** : Nase Free Water 7  
 Control DNA Target 8  
 10X Cas9 Digestion 7  
 Buffer  
 Cas9 Nuclease 7  
 Control gRNA 7

**SECTION 9: Physical and chemical properties**

**Viscosity** :  RNase Free Water Not available.  
 Control DNA Target Not available.  
 10X Cas9 Digestion Buffer Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA Not available.

| <b>Solubility(ies)</b> | <b>Media</b>                                         | <b>Result</b> |
|------------------------|------------------------------------------------------|---------------|
|                        | <input checked="" type="checkbox"/> RNase Free Water |               |
|                        | water                                                | Soluble       |
|                        | <b>Control DNA Target</b>                            |               |
|                        | water                                                | Soluble       |
|                        | <b>10X Cas9 Digestion Buffer</b>                     |               |
|                        | water                                                | Soluble       |
|                        | <b>Cas9 Nuclease</b>                                 |               |
|                        | water                                                | Soluble       |
|                        | <b>Control gRNA</b>                                  |               |
|                        | water                                                | Soluble       |

**Partition coefficient: n-octanol/water** :  RNase Free Water -1.38  
 Control DNA Target Not applicable.  
 10X Cas9 Digestion Buffer Not applicable.  
 Buffer  
 Cas9 Nuclease Not applicable.  
 Control gRNA Not applicable.

**Vapour pressure** :  RNase Free Water 2.3 kPa (17.5 mm Hg) [room temperature]  
 12.3 kPa (92.258 mm Hg) [50°C]

| <b>Ingredient name</b>                                        | <b>Vapour Pressure at 20° C</b> |            |               | <b>Vapour pressure at 50° C</b> |            |               |
|---------------------------------------------------------------|---------------------------------|------------|---------------|---------------------------------|------------|---------------|
|                                                               | <b>mm Hg</b>                    | <b>kPa</b> | <b>Method</b> | <b>mm Hg</b>                    | <b>kPa</b> | <b>Method</b> |
| <input checked="" type="checkbox"/> <b>Control DNA Target</b> |                                 |            |               |                                 |            |               |
| water                                                         | 17.5                            | 2.3        | -             | 92.258                          | 12.3       | -             |
| <b>10X Cas9 Digestion Buffer</b>                              |                                 |            |               |                                 |            |               |
| water                                                         | 17.5                            | 2.3        | -             | 92.258                          | 12.3       | -             |
| <b>Cas9 Nuclease</b>                                          |                                 |            |               |                                 |            |               |
| water                                                         | 17.5                            | 2.3        | -             | 92.258                          | 12.3       | -             |
| glycerol                                                      | 0.000075                        | 0.00001    | -             | 0.0025                          | 0.00033    | -             |
| <b>Control gRNA</b>                                           |                                 |            |               |                                 |            |               |
| water                                                         | 17.5                            | 2.3        | -             | 92.258                          | 12.3       | -             |

**Evaporation rate** :  RNase Free Water Not available.  
 Control DNA Target Not available.  
 10X Cas9 Digestion Buffer Not available.  
 Buffer  
 Cas9 Nuclease Not available.  
 Control gRNA Not available.

## SECTION 9: Physical and chemical properties

|                             |                                                       |                |
|-----------------------------|-------------------------------------------------------|----------------|
| <b>Relative density</b>     | : <input checked="" type="checkbox"/> Nase Free Water | 1              |
|                             | Control DNA Target                                    | Not available. |
|                             | 10X Cas9 Digestion Buffer                             | Not available. |
|                             | Cas9 Nuclease                                         | Not available. |
|                             | Control gRNA                                          | Not available. |
| <b>Vapour density</b>       | : <input checked="" type="checkbox"/> Nase Free Water | 0.62 [Air = 1] |
|                             | Control DNA Target                                    | Not available. |
|                             | 10X Cas9 Digestion Buffer                             | Not available. |
|                             | Cas9 Nuclease                                         | Not available. |
|                             | Control gRNA                                          | Not available. |
| <b>Explosive properties</b> | : <input checked="" type="checkbox"/> Nase Free Water | Not available. |
|                             | Control DNA Target                                    | Not available. |
|                             | 10X Cas9 Digestion Buffer                             | Not available. |
|                             | Cas9 Nuclease                                         | Not available. |
|                             | Control gRNA                                          | Not available. |
| <b>Oxidising properties</b> | : <input checked="" type="checkbox"/> Nase Free Water | Not available. |
|                             | Control DNA Target                                    | Not available. |
|                             | 10X Cas9 Digestion Buffer                             | Not available. |
|                             | Cas9 Nuclease                                         | Not available. |
|                             | Control gRNA                                          | Not available. |

### Particle characteristics

|                             |                                                       |                 |
|-----------------------------|-------------------------------------------------------|-----------------|
| <b>Median particle size</b> | : <input checked="" type="checkbox"/> Nase Free Water | Not applicable. |
|                             | Control DNA Target                                    | Not applicable. |
|                             | 10X Cas9 Digestion Buffer                             | Not applicable. |
|                             | Cas9 Nuclease                                         | Not applicable. |
|                             | Control gRNA                                          | Not applicable. |

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

|                                |                                                       |                                                                                            |
|--------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>         | : <input checked="" type="checkbox"/> Nase Free Water | No specific test data related to reactivity available for this product or its ingredients. |
|                                | Control DNA Target                                    | No specific test data related to reactivity available for this product or its ingredients. |
|                                | 10X Cas9 Digestion Buffer                             | No specific test data related to reactivity available for this product or its ingredients. |
|                                | Cas9 Nuclease                                         | No specific test data related to reactivity available for this product or its ingredients. |
|                                | Control gRNA                                          | No specific test data related to reactivity available for this product or its ingredients. |
| <b>10.2 Chemical stability</b> | : <input checked="" type="checkbox"/> Nase Free Water | The product is stable.                                                                     |
|                                | Control DNA Target                                    | The product is stable.                                                                     |
|                                | 10X Cas9 Digestion Buffer                             | The product is stable.                                                                     |
|                                | Cas9 Nuclease                                         | The product is stable.                                                                     |
|                                | Control gRNA                                          | The product is stable.                                                                     |

## SECTION 10: Stability and reactivity

|                                                |                                                              |                                                                                                      |
|------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>10.3 Possibility of hazardous reactions</b> | : <input checked="" type="checkbox"/> <b>Nase Free Water</b> | Under normal conditions of storage and use, hazardous reactions will not occur.                      |
|                                                | Control DNA Target                                           | Under normal conditions of storage and use, hazardous reactions will not occur.                      |
|                                                | 10X Cas9 Digestion Buffer                                    | Under normal conditions of storage and use, hazardous reactions will not occur.                      |
|                                                | Cas9 Nuclease                                                | Under normal conditions of storage and use, hazardous reactions will not occur.                      |
|                                                | Control gRNA                                                 | Under normal conditions of storage and use, hazardous reactions will not occur.                      |
| <b>10.4 Conditions to avoid</b>                | : <input checked="" type="checkbox"/> <b>Nase Free Water</b> | No specific data.                                                                                    |
|                                                | Control DNA Target                                           | No specific data.                                                                                    |
|                                                | 10X Cas9 Digestion Buffer                                    | No specific data.                                                                                    |
|                                                | Cas9 Nuclease                                                | No specific data.                                                                                    |
|                                                | Control gRNA                                                 | No specific data.                                                                                    |
| <b>10.5 Incompatible materials</b>             | : <input checked="" type="checkbox"/> <b>Nase Free Water</b> | May react or be incompatible with oxidising materials.                                               |
|                                                | Control DNA Target                                           | May react or be incompatible with oxidising materials.                                               |
|                                                | 10X Cas9 Digestion Buffer                                    | May react or be incompatible with oxidising materials.                                               |
|                                                | Cas9 Nuclease                                                | May react or be incompatible with oxidising materials.                                               |
|                                                | Control gRNA                                                 | May react or be incompatible with oxidising materials.                                               |
| <b>10.6 Hazardous decomposition products</b>   | : <input checked="" type="checkbox"/> <b>Nase Free Water</b> | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|                                                | Control DNA Target                                           | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|                                                | 10X Cas9 Digestion Buffer                                    | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|                                                | Cas9 Nuclease                                                | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|                                                | Control gRNA                                                 | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

| Product/ingredient name                                                               | Result    | Species | Dose        | Exposure |
|---------------------------------------------------------------------------------------|-----------|---------|-------------|----------|
| <input checked="" type="checkbox"/> <b>Cas9 Nuclease</b>                              |           |         |             |          |
| Glycerol                                                                              | LD50 Oral | Rat     | 12600 mg/kg | -        |
| 2-Mercaptoethanol                                                                     | LD50 Oral | Rat     | 244 mg/kg   | -        |
| Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | LD50 Oral | Rat     | 2800 mg/kg  | -        |

#### Acute toxicity estimates

| Product/ingredient name                                                               | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---------------------------------------------------------------------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> <b>Cas9 Nuclease</b>                              |              |                |                          |                             |                                     |
| Cas9 Nuclease                                                                         | 152500.0     | 125000         | N/A                      | 871.1                       | N/A                                 |
| Glycerol                                                                              | 12600        | N/A            | N/A                      | N/A                         | N/A                                 |
| 2-Mercaptoethanol                                                                     | 244          | 200            | N/A                      | 3                           | N/A                                 |
| Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | 500          | N/A            | N/A                      | N/A                         | N/A                                 |

#### Irritation/Corrosion

## SECTION 11: Toxicological information

| Product/ingredient name                                                                                                                            | Result                 | Species | Score | Exposure        | Observation |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------|-------|-----------------|-------------|
| <b>Cas9 Nuclease</b><br>Glycerol<br><br>2-Mercaptoethanol<br>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | Eyes - Mild irritant   | Rabbit  | -     | 24 hours 500 mg | -           |
|                                                                                                                                                    | Skin - Mild irritant   | Rabbit  | -     | 24 hours 500 mg | -           |
|                                                                                                                                                    | Eyes - Severe irritant | Rabbit  | -     | 2 mg            | -           |
|                                                                                                                                                    | Eyes - Severe irritant | Rabbit  | -     | 1 %             | -           |
|                                                                                                                                                    |                        |         |       |                 |             |

### Sensitiser

**Conclusion/Summary** : Not available.

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

| Product/ingredient name                   | Category   | Route of exposure | Target organs |
|-------------------------------------------|------------|-------------------|---------------|
| <b>Cas9 Nuclease</b><br>2-Mercaptoethanol | Category 2 | -                 | heart, liver  |

### Aspiration hazard

Not available.

### Information on likely routes of exposure

**Nase Free Water** : Not available.  
**Control DNA Target** : Not available.  
**10X Cas9 Digestion Buffer** : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.  
**Cas9 Nuclease** : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.  
**Control gRNA** : Not available.

### Potential acute health effects

**Inhalation** : **Nase Free Water** : No known significant effects or critical hazards.  
**Control DNA Target** : No known significant effects or critical hazards.  
**10X Cas9 Digestion Buffer** : No known significant effects or critical hazards.  
**Cas9 Nuclease** : No known significant effects or critical hazards.  
**Control gRNA** : No known significant effects or critical hazards.

**Ingestion** : **Nase Free Water** : No known significant effects or critical hazards.  
**Control DNA Target** : No known significant effects or critical hazards.  
**10X Cas9 Digestion Buffer** : No known significant effects or critical hazards.  
**Cas9 Nuclease** : No known significant effects or critical hazards.  
**Control gRNA** : No known significant effects or critical hazards.

## SECTION 11: Toxicological information

|                     |   |                           |                                                   |
|---------------------|---|---------------------------|---------------------------------------------------|
| <b>Skin contact</b> | : | ☑Nase Free Water          | No known significant effects or critical hazards. |
|                     |   | Control DNA Target        | No known significant effects or critical hazards. |
|                     |   | 10X Cas9 Digestion Buffer | No known significant effects or critical hazards. |
|                     |   | Cas9 Nuclease             | May cause an allergic skin reaction.              |
|                     |   | Control gRNA              | No known significant effects or critical hazards. |
| <b>Eye contact</b>  | : | ☑Nase Free Water          | No known significant effects or critical hazards. |
|                     |   | Control DNA Target        | No known significant effects or critical hazards. |
|                     |   | 10X Cas9 Digestion Buffer | No known significant effects or critical hazards. |
|                     |   | Cas9 Nuclease             | No known significant effects or critical hazards. |
|                     |   | Control gRNA              | No known significant effects or critical hazards. |

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

|                     |   |                           |                                                                      |
|---------------------|---|---------------------------|----------------------------------------------------------------------|
| <b>Inhalation</b>   | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | No specific data.                                                    |
|                     |   | Control gRNA              | No specific data.                                                    |
| <b>Ingestion</b>    | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | No specific data.                                                    |
|                     |   | Control gRNA              | No specific data.                                                    |
| <b>Skin contact</b> | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | Adverse symptoms may include the following:<br>irritation<br>redness |
|                     |   | Control gRNA              | No specific data.                                                    |
| <b>Eye contact</b>  | : | ☑Nase Free Water          | No specific data.                                                    |
|                     |   | Control DNA Target        | No specific data.                                                    |
|                     |   | 10X Cas9 Digestion Buffer | No specific data.                                                    |
|                     |   | Cas9 Nuclease             | No specific data.                                                    |
|                     |   | Control gRNA              | No specific data.                                                    |

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

#### Short term exposure

|                                    |   |                |
|------------------------------------|---|----------------|
| <b>Potential immediate effects</b> | : | Not available. |
| <b>Potential delayed effects</b>   | : | Not available. |

#### Long term exposure

|                                    |   |                |
|------------------------------------|---|----------------|
| <b>Potential immediate effects</b> | : | Not available. |
| <b>Potential delayed effects</b>   | : | Not available. |

#### Potential chronic health effects

**Conclusion/Summary** : Not available.

|                |   |                           |                                                                                                     |
|----------------|---|---------------------------|-----------------------------------------------------------------------------------------------------|
| <b>General</b> | : | ☑Nase Free Water          | No known significant effects or critical hazards.                                                   |
|                |   | Control DNA Target        | No known significant effects or critical hazards.                                                   |
|                |   | 10X Cas9 Digestion Buffer | No known significant effects or critical hazards.                                                   |
|                |   | Cas9 Nuclease             | Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. |
|                |   | Control gRNA              | No known significant effects or critical hazards.                                                   |

## SECTION 11: Toxicological information

|                              |                                                       |                                                   |
|------------------------------|-------------------------------------------------------|---------------------------------------------------|
| <b>Carcinogenicity</b>       | : <input checked="" type="checkbox"/> Nase Free Water | No known significant effects or critical hazards. |
|                              | Control DNA Target                                    | No known significant effects or critical hazards. |
|                              | 10X Cas9 Digestion Buffer                             | No known significant effects or critical hazards. |
|                              | Cas9 Nuclease                                         | No known significant effects or critical hazards. |
|                              | Control gRNA                                          | No known significant effects or critical hazards. |
| <b>Mutagenicity</b>          | : <input checked="" type="checkbox"/> Nase Free Water | No known significant effects or critical hazards. |
|                              | Control DNA Target                                    | No known significant effects or critical hazards. |
|                              | 10X Cas9 Digestion Buffer                             | No known significant effects or critical hazards. |
|                              | Cas9 Nuclease                                         | No known significant effects or critical hazards. |
|                              | Control gRNA                                          | No known significant effects or critical hazards. |
| <b>Reproductive toxicity</b> | : <input checked="" type="checkbox"/> Nase Free Water | No known significant effects or critical hazards. |
|                              | Control DNA Target                                    | No known significant effects or critical hazards. |
|                              | 10X Cas9 Digestion Buffer                             | No known significant effects or critical hazards. |
|                              | Cas9 Nuclease                                         | No known significant effects or critical hazards. |
|                              | Control gRNA                                          | No known significant effects or critical hazards. |

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name                                                               | Result                             | Species                                                           | Exposure |
|---------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------|----------|
| <input checked="" type="checkbox"/> Cas9 Nuclease                                     | Acute LC50 54000 mg/l Fresh water  | Fish - Trout - <i>Oncorhynchus mykiss</i>                         | 96 hours |
| Glycerol                                                                              | Acute EC50 0.4 mg/l Fresh water    | Daphnia                                                           | 48 hours |
| 2-Mercaptoethanol                                                                     | Acute EC50 210 µg/l Fresh water    | Algae - Green algae - <i>Selenastrum sp.</i>                      | 96 hours |
| Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | Acute LC50 10800 µg/l Marine water | Crustaceans - Aesop shrimp - <i>Pandalus montagui</i> - Adult     | 48 hours |
|                                                                                       | Acute LC50 2.518 mg/l Fresh water  | Daphnia - Water flea - <i>Daphnia magna</i>                       | 48 hours |
|                                                                                       | Acute LC50 7200 µg/l Fresh water   | Fish - Rainbow trout,donaldson trout - <i>Oncorhynchus mykiss</i> | 96 hours |

**Conclusion/Summary** : Not available.

### 12.2 Persistence and degradability

| Product/ingredient name                           | Test                                                                     | Result                       | Dose    | Inoculum |
|---------------------------------------------------|--------------------------------------------------------------------------|------------------------------|---------|----------|
| <input checked="" type="checkbox"/> Cas9 Nuclease | 301D Ready Biodegradability - Closed Bottle Test                         | 93 % - 30 days               | -       | -        |
| Glycerol                                          | OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test) | 69 % - Not readily - 60 days | 20 mg/l | -        |
| 2-Mercaptoethanol                                 |                                                                          |                              |         |          |

**Conclusion/Summary** : Not available.

## SECTION 12: Ecological information

| Product/ingredient name                   | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------------------------|-------------------|------------|------------------|
| <b>RNase Free Water</b><br>water          | -                 | -          | Readily          |
| <b>Cas9 Nuclease</b><br>2-Mercaptoethanol | -                 | -          | Not readily      |

### 12.3 Bioaccumulative potential

| Product/ingredient name                                                                           | LogP <sub>ow</sub> | BCF   | Potential |
|---------------------------------------------------------------------------------------------------|--------------------|-------|-----------|
| <b>RNase Free Water</b><br>water                                                                  | -1.38              | -     | Low       |
| <b>Cas9 Nuclease</b><br>Glycerol                                                                  | -1.76              | -     | Low       |
| 2-Mercaptoethanol                                                                                 | -0.056             | -     | Low       |
| Poly(oxy-1,2-ethanediyl), .<br>alpha.-[<br>(1,1,3,3-tetramethylbutyl)<br>phenyl]-.omega.-hydroxy- | 2.7                | 78.67 | Low       |

### 12.4 Mobility in soil

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

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

| Product/ingredient name          | PBT                           | P   | B   | T   | vPvB                          | vP  | vB  |
|----------------------------------|-------------------------------|-----|-----|-----|-------------------------------|-----|-----|
| <b>RNase Free Water</b><br>water | Not applicable<br>(Inorganic) | N/A | N/A | N/A | Not applicable<br>(Inorganic) | N/A | N/A |

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

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

#### Packaging

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

**Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

|                                 | ADR/RID        | IMDG           | IATA           |
|---------------------------------|----------------|----------------|----------------|
| 14.1 UN number                  | Not regulated. | Not regulated. | Not regulated. |
| 14.2 UN proper shipping name    | -              | -              | -              |
| 14.3 Transport hazard class(es) | -              | -              | -              |
| 14.4 Packing group              | -              | -              | -              |
| 14.5 Environmental hazards      | No.            | No.            | No.            |

### Additional information

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

**14.7 Transport in bulk according to IMO instruments** : Not available.

## SECTION 15: Regulatory information


### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture UK (GB)/REACH

#### Annex XIV - List of substances subject to authorisation

##### Annex XIV

None of the components are listed.

##### Substances of very high concern

| Intrinsic property                                                                                                                                          | Ingredient name                                                                                                               | Status    | Reference number | Date of revision |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|------------------|
|  <b>Cas9 Nuclease</b><br>Substance of equivalent concern for environment | 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated covering well-defined substances and UVCB substances, polymers and homologues | Candidate | -                | 12/19/2012       |

##### Ozone depleting substances

Not listed.


##### Prior Informed Consent (PIC)

Not listed.

##### Persistent Organic Pollutants

Not listed.

### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

| Product / Ingredient name                                                                                                 | Identifiers | Status |
|---------------------------------------------------------------------------------------------------------------------------|-------------|--------|
|  <b>Cas9 Nuclease</b><br>Cas9 Nuclease |             | 3      |

## SECTION 15: Regulatory information

|              |   |                           |                 |
|--------------|---|---------------------------|-----------------|
| <b>Label</b> | : | RNase Free Water          | Not applicable. |
|              |   | Control DNA Target        | Not applicable. |
|              |   | 10X Cas9 Digestion Buffer | Not applicable. |
|              |   | Cas9 Nuclease             | Not applicable. |
|              |   | Control gRNA              | Not applicable. |

### Seveso Directive

This product is not controlled under the Seveso Directive.

### EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

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

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

**United States** : All components are active or exempted.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

### Procedure used to derive the classification

| Classification                      | Justification      |
|-------------------------------------|--------------------|
| Cas9 Nuclease<br>Skin Sens. 1, H317 | Calculation method |

### Full text of abbreviated H statements

**SECTION 16: Other information**

**Cas9 Nuclease**

|       |                                                                    |
|-------|--------------------------------------------------------------------|
| H301  | Toxic if swallowed.                                                |
| H302  | Harmful if swallowed.                                              |
| H310  | Fatal in contact with skin.                                        |
| H315  | Causes skin irritation.                                            |
| H317  | May cause an allergic skin reaction.                               |
| H318  | Causes serious eye damage.                                         |
| H331  | Toxic if inhaled.                                                  |
| H361f | Suspected of damaging fertility.                                   |
| H373  | May cause damage to organs through prolonged or repeated exposure. |
| H400  | Very toxic to aquatic life.                                        |
| H410  | Very toxic to aquatic life with long lasting effects.              |
| H411  | Toxic to aquatic life with long lasting effects.                   |

[Full text of classifications](#)

**Cas9 Nuclease**

|                   |                                                                 |
|-------------------|-----------------------------------------------------------------|
| Acute Tox. 2      | ACUTE TOXICITY - Category 2                                     |
| Acute Tox. 3      | ACUTE TOXICITY - Category 3                                     |
| Acute Tox. 4      | ACUTE TOXICITY - Category 4                                     |
| Aquatic Acute 1   | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1                  |
| Aquatic Chronic 1 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1                 |
| Aquatic Chronic 2 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2                 |
| Eye Dam. 1        | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1                  |
| Repr. 2           | REPRODUCTIVE TOXICITY - Category 2                              |
| Skin Irrit. 2     | SKIN CORROSION/IRRITATION - Category 2                          |
| Skin Sens. 1      | SKIN SENSITISATION - Category 1                                 |
| Skin Sens. 1A     | SKIN SENSITISATION - Category 1A                                |
| STOT RE 2         | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 |

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