Section 1. Identification

1.1 Product identifier

Product name: SureGuide gRNA Control Kit - 20 Reactions, Part Number 5190-7718
Part No. (Chemical Kit): 5190-7718
Part No.: Control DNA Target 50 ng/ul 5190-7536
Control gRNA 1uM 5190-7539
Validation date: 10/1/2015

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

Material uses: Analytical reagent.
Control DNA Target 50 ng/ul: 0.02 ml (x2)
Control gRNA 1uM: 0.01 ml

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

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

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status: Control DNA Target 50 ng/ul: Not classified.
Control gRNA 1uM: Not classified.

Classification of the substance or mixture

Ingredients of unknown toxicity: Control DNA Target 50 ng/ul: Not applicable.
Control gRNA 1uM: Not applicable.

2.2 GHS label elements

Signal word: Control DNA Target 50 ng/ul: No signal word.
Control gRNA 1uM: No signal word.

Hazard statements: Control DNA Target 50 ng/ul: No known significant effects or critical hazards.
Control gRNA 1uM: No known significant effects or critical hazards.

Date of issue: 10/01/2015
Section 2. Hazards identification

Precautionary statements

**Prevention:**
- Control DNA Target 50 ng/ul: Not applicable.
- Control gRNA 1uM: Not applicable.

**Response:**
- Control DNA Target 50 ng/ul: Not applicable.
- Control gRNA 1uM: Not applicable.

**Storage:**
- Control DNA Target 50 ng/ul: Not applicable.
- Control gRNA 1uM: Not applicable.

**Disposal:**
- Control DNA Target 50 ng/ul: Not applicable.
- Control gRNA 1uM: Not applicable.

**Supplemental label elements:**
- Control DNA Target 50 ng/ul: None known.
- Control gRNA 1uM: None known.

2.3 Other hazards

**Hazards not otherwise classified:**
- Control DNA Target 50 ng/ul: None known.
- Control gRNA 1uM: None known.

Section 3. Composition/information on ingredients

Substance/mixture:
- Control DNA Target 50 ng/ul: Mixture
- Control gRNA 1uM: Mixture

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

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

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

**Eye contact:**
- Control DNA Target 50 ng/ul: 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 gRNA 1uM: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation:**
- Control DNA Target 50 ng/ul: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Control gRNA 1uM: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact:**
- Control DNA Target 50 ng/ul: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Control gRNA 1uM: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
## Section 4. First aid measures

### Ingestion

| Control DNA Target 50 ng/ul | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |
| Control gRNA 1uM | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

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

#### Potential acute health effects

| Eye contact | Control DNA Target 50 ng/ul | No known significant effects or critical hazards. |
| Control gRNA 1uM | No known significant effects or critical hazards. |

| Inhalation | Control DNA Target 50 ng/ul | No known significant effects or critical hazards. |
| Control gRNA 1uM | No known significant effects or critical hazards. |

| Skin contact | Control DNA Target 50 ng/ul | No known significant effects or critical hazards. |
| Control gRNA 1uM | No known significant effects or critical hazards. |

| Ingestion | Control DNA Target 50 ng/ul | No known significant effects or critical hazards. |
| Control gRNA 1uM | No known significant effects or critical hazards. |

#### Over-exposure signs/symptoms

| Eye contact | Control DNA Target 50 ng/ul | No specific data. |
| Control gRNA 1uM | No specific data. |

| Inhalation | Control DNA Target 50 ng/ul | No specific data. |
| Control gRNA 1uM | No specific data. |

| Skin contact | Control DNA Target 50 ng/ul | No specific data. |
| Control gRNA 1uM | No specific data. |

| Ingestion | Control DNA Target 50 ng/ul | No specific data. |
| Control gRNA 1uM | No specific data. |

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

#### Notes to physician

| Control DNA Target 50 ng/ul | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Control gRNA 1uM | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |

#### Specific treatments

| Control DNA Target 50 ng/ul | No specific treatment. |
| Control gRNA 1uM | No specific treatment. |

#### Protection of first-aiders

| Control DNA Target 50 ng/ul | No action shall be taken involving any personal risk or without suitable training. |
| Control gRNA 1uM | No action shall be taken involving any personal risk or without suitable training. |

See toxicological information (Section 11)
Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

Unsuitable extinguishing media:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

Hazardous thermal decomposition products:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

5.3 Advice for firefighters

Special protective actions for fire-fighters:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

Special protective equipment for fire-fighters:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

5.4 Transportation information

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

For emergency personnel:
- No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

Date of issue: 10/01/2015
Section 6. Accidental release measures

For emergency responders:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

6.2 Environmental precautions:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

Methods for cleaning up:
- Control DNA Target 50 ng/ul
- Control gRNA 1uM

Section 7. Handling and storage

7.1 Precautions for safe handling
- Protective measures:
  - Control DNA Target 50 ng/ul
  - Control gRNA 1uM

- Advice on general occupational hygiene:
  - Control DNA Target 50 ng/ul
  - Control gRNA 1uM
Section 7. Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

Control DNA Target 50 ng/ul

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

Control gRNA 1uM

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

7.3 Specific end use(s)

Recommendations

Control DNA Target 50 ng/ul

Industrial applications, Professional applications.

Control gRNA 1uM

Industrial applications, Professional applications.

Industrial sector specific solutions

Control DNA Target 50 ng/ul

Not applicable.

Control gRNA 1uM

Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

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

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

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

Individual protection measures

Hygiene measures

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

Eye/face protection

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

Date of issue : 10/01/2015
Section 8. Exposure controls/personal protection

**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**: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state**: Control DNA Target 50 ng/ul Liquid. Control gRNA 1uM Liquid.

**Color**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Odor**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Odor threshold**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**pH**: Control DNA Target 50 ng/ul 8 Control gRNA 1uM 7

**Melting point**: Control DNA Target 50 ng/ul 0°C (32°F) Control gRNA 1uM 0°C (32°F)

**Boiling point**: Control DNA Target 50 ng/ul 100°C (212°F) Control gRNA 1uM 100°C (212°F)

**Flash point**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Evaporation rate**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Flammability (solid, gas)**: Control DNA Target 50 ng/ul Not applicable. Control gRNA 1uM Not applicable.

**Lower and upper explosive (flammable) limits**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Vapor pressure**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Vapor density**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Relative density**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.

**Solubility**: Control DNA Target 50 ng/ul Easily soluble in the following materials: cold water and hot water. Control gRNA 1uM Easily soluble in the following materials: cold water and hot water.

**Partition coefficient: n-octanol/water**: Control DNA Target 50 ng/ul Not available. Control gRNA 1uM Not available.
Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Control DNA Target 50 ng/ul</th>
<th>Control gRNA 1uM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

10.1 Reactivity
- Control DNA Target 50 ng/ul: No specific test data related to reactivity available for this product or its ingredients.
- Control gRNA 1uM: No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability
- Control DNA Target 50 ng/ul: The product is stable.
- Control gRNA 1uM: The product is stable.

10.3 Possibility of hazardous reactions
- Control DNA Target 50 ng/ul: Under normal conditions of storage and use, hazardous reactions will not occur.
- Control gRNA 1uM: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
- Control DNA Target 50 ng/ul: No specific data.
- Control gRNA 1uM: No specific data.

10.5 Incompatible materials
- Control DNA Target 50 ng/ul: May react or be incompatible with oxidizing materials.
- Control gRNA 1uM: May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products
- Control DNA Target 50 ng/ul: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Control gRNA 1uM: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Toxicological effect</th>
<th>Data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
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</tr>
<tr>
<td>Irritation/Corrosion</td>
<td>Not available.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Not available.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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## Section 11. Toxicological information

Not available.

**Teratogenicity**
Not available.

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

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

**Aspiration hazard**
Not available.

### Information on the likely routes of exposure

<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>Control DNA Target 50 ng/ul</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
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</table>

### Potential acute health effects

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Control DNA Target 50 ng/ul</th>
<th>No known significant effects or critical hazards.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Control DNA Target 50 ng/ul</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
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</table>

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

<table>
<thead>
<tr>
<th>Immediate effects</th>
<th>Control DNA Target 50 ng/ul</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
<td>No known significant effects or critical hazards.</td>
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</tbody>
</table>

#### Long term exposure

<table>
<thead>
<tr>
<th>Immediate effects</th>
<th>Control DNA Target 50 ng/ul</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
<td>No known significant effects or critical hazards.</td>
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</tbody>
</table>

**Potential chronic health effects**

<table>
<thead>
<tr>
<th>General</th>
<th>Control DNA Target 50 ng/ul</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Carcinogenicity</th>
<th>Control DNA Target 50 ng/ul</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
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</table>

<table>
<thead>
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<th>Mutagenicity</th>
<th>Control DNA Target 50 ng/ul</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
<td>No known significant effects or critical hazards.</td>
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</table>
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Teratogenicity</th>
<th>Control DNA Target 50 ng/ul</th>
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<tbody>
<tr>
<td>Developmental</td>
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<tr>
<td>effects</td>
<td>Control gRNA 1uM</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Fertility effects</td>
<td>Control DNA Target 50 ng/ul</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Control gRNA 1uM</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12. Ecological information

12.1 Toxicity
Not available.

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Soil/water partition coefficient ($K_{OC}$)
Not available.

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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

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

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

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Section 13. Disposal considerations

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

Section 14. Transport information

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 311: Edetic acid

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312 Classification : Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Canada inventory : All components are listed or exempted.

International regulations
Section 15. Regulatory information

International lists:
- Australia inventory (AICS): Not determined.
- China inventory (IECSC): All components are listed or exempted.
- Japan inventory: All components are listed or exempted.
- Korea inventory: Not determined.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): Not determined.
- Philippines inventory (PICCS): Not determined.
- Taiwan inventory (CSNN): All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals: Not listed
Chemical Weapons Convention List Schedule II Chemicals: Not listed
Chemical Weapons Convention List Schedule III Chemicals: Not listed

Section 16. Other information

History
- Date of issue: 10/1/2015
- Date of previous issue: 8/27/2014
- Version: 2

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