SAFETY DATA SHEET

RRHD pH Method Development Kit, Part Number 5190-6152

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

This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

1.1 Product identifier

Product name: RRHD pH Method Development Kit, Part Number 5190-6152

Part no. (chemical kit): 5190-6152

Part no.:
- RRHD SB-C18 857700-902
- RRHD Eclipse Plus C18 959757-902
- RRHD Extend - C18 757700-902

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

Identified uses: Analytical chemistry.
- LC column
- Solvent volume: <10 ml

RRHD SB-C18 2.1 x 50mm, 1.8μm, 1200bar
RRHD Eclipse Plus C18 2.1 x 50mm, 1.8μm
RRHD Extend - C18 2.1 x 50mm, 1.8μm, 1200bar

Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Deutschland GmbH
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

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

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

2.1 Classification of the substance or mixture

Product definition:
- RRHD SB-C18 Mixture (encapsulated in article)
- RRHD Eclipse Plus C18 Mixture (encapsulated in article)
- RRHD Extend - C18 Mixture (encapsulated in article)

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

RRHD SB-C18
- H225 FLAMMABLE LIQUIDS Category 2
- H319 SERIOUS EYE DAMAGE/EYE IRRITATION Category 2

RRHD Eclipse Plus C18
- H225 FLAMMABLE LIQUIDS Category 2
- H319 SERIOUS EYE DAMAGE/EYE IRRITATION Category 2
**SECTION 2: Hazards identification**

### RRHD Extend - C18

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>FLAMMABLE LIQUIDS</td>
<td>Category 2</td>
</tr>
<tr>
<td>H319</td>
<td>SERIOUS EYE DAMAGE/EYE IRRITATION</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

### RRHD SB-C18

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

### RRHD Eclipse Plus C18

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

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**: RRHD SB-C18

RRHD Eclipse Plus C18

RRHD Extend - C18

**Signal word**: RRHD SB-C18 - Danger

RRHD Eclipse Plus C18 - Danger

RRHD Extend - C18 - Danger

**Hazard statements**: RRHD SB-C18 - H225 - Highly flammable liquid and vapour.

H319 - Causes serious eye irritation.


H319 - Causes serious eye irritation.

RRHD Extend - C18 - H225 - Highly flammable liquid and vapour.

H319 - Causes serious eye irritation.

**Precautionary statements**

**Prevention**: RRHD SB-C18 - P280 - Wear eye or face protection.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

RRHD Eclipse Plus C18 - P280 - Wear eye or face protection.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

RRHD Extend - C18 - P280 - Wear eye or face protection.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Response**: RRHD SB-C18 - P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 - If eye irritation persists: Get medical advice or attention.

RRHD Eclipse Plus C18 - P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 - If eye irritation persists: Get medical advice or attention.

RRHD Extend - C18 - P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 - If eye irritation persists: Get medical advice or attention.
SECTION 2: Hazards identification

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII: RRHD SB-C18 This mixture does not contain any substances that are assessed to be a PBT or a vPvB. RRHD Eclipse Plus C18 This mixture does not contain any substances that are assessed to be a PBT or a vPvB. RRHD Extend - C18 This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification: RRHD SB-C18 None known. RRHD Eclipse Plus C18 None known. RRHD Extend - C18 None known.

SECTION 3: Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

3.1 Substances: RRHD SB-C18 Mixture (encapsulated in article) RRHD Eclipse Plus C18 Mixture (encapsulated in article) RRHD Extend - C18 Mixture (encapsulated in article)
SECTION 3: Composition/information on ingredients

RRHD SB-C18

<table>
<thead>
<tr>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>acetonitrile</td>
<td>200-835-2</td>
<td>75-05-8</td>
<td>608-001-00-3</td>
<td>≥10 - &lt;25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ATE [Dermal] = 1100 mg/kg
ATE [Inhalation (vapours)] = 11 mg/l

Contains: Organosilane bonded silica gel

Note: To the best of our knowledge, the acute and chronic toxicological properties of bonded silica gels have not been investigated. This product contains synthetic amorphous silica, and should not be confused with crystalline silica such as quartz, cristobalite, or tridymite, or with diatomaceous earth or other naturally occurring forms of amorphous silica that frequently contain crystalline forms of silica.

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

RRHD SB-C18 [1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
RRHD Eclipse Plus C18 [1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
RRHD Extend - C18 [1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

SECTION 4: First aid measures

4.1 Description of first aid measures

**Eye contact**

RRHD SB-C18

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.

RRHD Eclipse Plus C18

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.

RRHD Extend - C18

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.
SECTION 4: First aid measures

**Inhalation**

**RRHD SB-C18**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**RRHD Eclipse Plus C18**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**RRHD Extend - C18**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact**

**RRHD SB-C18**
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**RRHD Eclipse Plus C18**
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**RRHD Extend - C18**
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**

**RRHD SB-C18**
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.

Get medical attention.
SECTION 4: First aid measures

RRHD Eclipse Plus C18
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.

RRHD Extend - C18
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.

Protection of first-aiders
RRHD SB-C18
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.

RRHD Eclipse Plus C18
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.

RRHD Extend - C18
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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact
RRHD SB-C18
Causes serious eye irritation.

RRHD Eclipse Plus C18
Causes serious eye irritation.

RRHD Extend - C18
Causes serious eye irritation.

Inhalation
RRHD SB-C18
No known significant effects or critical hazards.

RRHD Eclipse Plus C18
No known significant effects or critical hazards.

RRHD Extend - C18
No known significant effects or critical hazards.

Skin contact
RRHD SB-C18
No known significant effects or critical hazards.

RRHD Eclipse Plus C18
No known significant effects or critical hazards.

RRHD Extend - C18
No known significant effects or critical hazards.

Ingestion
RRHD SB-C18
No known significant effects or critical hazards.

RRHD Eclipse Plus C18
No known significant effects or critical hazards.

RRHD Extend - C18
No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact
RRHD SB-C18
Adverse symptoms may include the following:
pain or irritation
watering
redness

RRHD Eclipse Plus C18
Adverse symptoms may include the following:
pain or irritation
watering
redness

RRHD Extend - C18
Adverse symptoms may include the following:
### SECTION 4: First aid measures

#### Inhalation
- **RRHD SB-C18**: No specific data.
- **RRHD Eclipse Plus C18**: No specific data.
- **RRHD Extend - C18**: No specific data.

#### Skin contact
- **RRHD SB-C18**: No specific data.
- **RRHD Eclipse Plus C18**: No specific data.
- **RRHD Extend - C18**: No specific data.

#### Ingestion
- **RRHD SB-C18**: No specific data.
- **RRHD Eclipse Plus C18**: No specific data.
- **RRHD Extend - C18**: No specific data.

#### Specific treatments

<table>
<thead>
<tr>
<th>Substance</th>
<th>Skin contact</th>
<th>Inhalation</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>RRHD Extend - C18</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

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

**Notes to physician**
- **RRHD SB-C18**: 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.
- **RRHD Eclipse Plus C18**: 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.
- **RRHD Extend - C18**: 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.

**Specific treatments**
- **RRHD SB-C18**: No specific treatment.
- **RRHD Eclipse Plus C18**: No specific treatment.
- **RRHD Extend - C18**: No specific treatment.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

<table>
<thead>
<tr>
<th>Substances</th>
<th>RRHD SB-C18</th>
<th>RRHD Eclipse Plus C18</th>
<th>RRHD Extend - C18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable extinguishing media</td>
<td>Use dry chemical, CO₂, water spray (fog) or foam.</td>
<td>Use dry chemical, CO₂, water spray (fog) or foam.</td>
<td>Use dry chemical, CO₂, water spray (fog) or foam.</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>Do not use water jet.</td>
<td>Do not use water jet.</td>
<td>Do not use water jet.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Substances</th>
<th>RRHD SB-C18</th>
<th>RRHD Eclipse Plus C18</th>
<th>RRHD Extend - C18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazards from the substance or mixture</td>
<td>Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.</td>
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</tr>
<tr>
<td>Hazardous combustion products</td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, metal oxide/oxides, cyanides</td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide</td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide</td>
</tr>
</tbody>
</table>
SECTION 5: Firefighting measures

5.3 Advice for firefighters

Special precautions for fire-fighters:
- RRHD SB-C18: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- RRHD Eclipse Plus C18: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- RRHD Extend - C18: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters:
- RRHD SB-C18: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- RRHD Eclipse Plus C18: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- RRHD Extend - C18: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- RRHD SB-C18: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- RRHD Eclipse Plus C18: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
### SECTION 6: Accidental release measures

#### 6.2 Environmental precautions

**RRHD Extend - C18**

- 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).

- 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".

**RRHD Eclipse Plus C18**

- 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).

- 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".

**RRHD Extend - C18**

- 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).

- 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".

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

**Methods for cleaning up**

**RRHD SB-C18**

- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**RRHD Eclipse Plus C18**

- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**RRHD Extend - C18**

- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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**For emergency responders**

**RRHD SB-C18**

- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**RRHD Eclipse Plus C18**

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Date of issue/Date of revision: 27/10/2022

Date of previous issue: No previous validation

Version: 1
SECTION 6: Accidental release measures

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

**Protective measures**

- **RRHD SB-C18**
  - Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

- **RRHD Eclipse Plus C18**
  - Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

- **RRHD Extend - C18**
  - Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene**

- **RRHD SB-C18**
  - 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.

- **RRHD Eclipse Plus C18**
  - 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.
SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

**Storage**

- **RRHD Extend - C18**: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

- **RRHD Eclipse Plus C18**: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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**Seveso Directive - Reporting thresholds**

**Danger criteria**

<table>
<thead>
<tr>
<th>Category</th>
<th>Notification and MAPP threshold</th>
<th>Safety report threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18</td>
<td>5000 tonne</td>
<td>50000 tonne</td>
</tr>
<tr>
<td>P5c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18</td>
<td>5000 tonne</td>
<td>50000 tonne</td>
</tr>
<tr>
<td>P5c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRHD Extend - C18</td>
<td>5000 tonne</td>
<td>50000 tonne</td>
</tr>
<tr>
<td>P5c</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)
SECTION 7: Handling and storage

**Recommendations**
- RRHD SB-C18: Industrial applications, Professional applications.
- RRHD Eclipse Plus C18: Industrial applications, Professional applications.
- RRHD Extend - C18: Industrial applications, Professional applications.

**Industrial sector specific solutions**
- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

SECTION 8: Exposure controls/personal protection

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>NAOSH (Ireland, 5/2021). Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values</td>
</tr>
<tr>
<td></td>
<td>OELV-8hr: 40 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OELV-8hr: 70 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OELV-8hr: 40 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OELV-8hr: 70 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>NAOSH (Ireland, 5/2021). Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values</td>
</tr>
<tr>
<td></td>
<td>OELV-8hr: 40 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OELV-8hr: 70 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

**Biological exposure indices**

None known.

**Recommended monitoring procedures**

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**DNELs/DMELs**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Type</th>
<th>Exposure</th>
<th>Value</th>
<th>Population</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>DNEL</td>
<td>Long term Oral</td>
<td>0.4 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Short term Oral</td>
<td>0.6 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Dermal</td>
<td>1.2 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>2.4 mg/m³</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>DNEL</td>
<td>Long term Oral</td>
<td>0.4 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Short term Oral</td>
<td>0.6 mg/kg</td>
<td>General population</td>
<td>Systemic</td>
</tr>
</tbody>
</table>
SECTION 8: Exposure controls/personal protection

<table>
<thead>
<tr>
<th>RRHD Extend - C18 acetonitrile</th>
<th>DNEL</th>
<th>Long term Dermal</th>
<th>bw/day</th>
<th>General population</th>
<th>Systemic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>1.2 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Oral</td>
<td>0.4 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Short term Oral</td>
<td>0.6 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Dermal</td>
<td>1.2 mg/kg bw/day</td>
<td>General population</td>
<td>Systemic</td>
</tr>
<tr>
<td></td>
<td>DNEL</td>
<td>Long term Inhalation</td>
<td>2.4 mg/m³</td>
<td>General population</td>
<td>Systemic</td>
</tr>
</tbody>
</table>

PNECs
No PNECs available

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

Individual protection measures

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: chemical splash goggles.

Skin protection
Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

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

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


**RRHD pH Method Development Kit, Part Number 5190-6152**

**SECTION 8: Exposure controls/personal protection**

**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**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>RRHD SB-C18</th>
<th>Solid. (containing flammable liquid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD Eclipse Plus C18</td>
<td>Solid. (containing flammable liquid)</td>
<td></td>
</tr>
<tr>
<td>RRHD Extend - C18</td>
<td>Solid. (containing flammable liquid)</td>
<td></td>
</tr>
</tbody>
</table>

**Colour**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | White. |
| RRHD Extend - C18 | Not available. |

**Odour**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**Odour threshold**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**Melting point/freezing point**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**Initial boiling point and boiling range**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**Flammability**

| RRHD SB-C18 | Contains: Flammable liquid |
| RRHD Eclipse Plus C18 | Contains: Flammable liquid |
| RRHD Extend - C18 | Contains: Flammable liquid |

**Upper/lower flammability or explosive limits**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**Flash point**

| RRHD SB-C18 | Closed cup: -18 to 23°C |
| RRHD Eclipse Plus C18 | Closed cup: -18 to 23°C |
| RRHD Extend - C18 | Closed cup: -18 to 23°C |

**Auto-ignition temperature**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>°C</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18</td>
<td>Acetonitrile</td>
<td>524</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18</td>
<td>Acetonitrile</td>
<td>524</td>
</tr>
<tr>
<td>RRHD Extend - C18</td>
<td>Acetonitrile</td>
<td>524</td>
</tr>
</tbody>
</table>

**Decomposition temperature**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**pH**

| RRHD SB-C18 | Not available. |
| RRHD Eclipse Plus C18 | Not available. |
| RRHD Extend - C18 | Not available. |

**Date of issue/Date of revision**: 27/10/2022

**Date of previous issue**: No previous validation

**Version**: 1
SECTION 9: Physical and chemical properties

Viscosity

- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

Solubility(ies)

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Media</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18</td>
<td>Stationary phase</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Mobile phase</td>
<td>Soluble</td>
<td></td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18</td>
<td>Stationary phase</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Mobile phase</td>
<td>Soluble</td>
<td></td>
</tr>
<tr>
<td>RRHD Extend - C18</td>
<td>Stationary phase</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Mobile phase</td>
<td>Soluble</td>
<td></td>
</tr>
</tbody>
</table>

Partition coefficient: n-octanol/water

- RRHD SB-C18: Not applicable.
- RRHD Eclipse Plus C18: Not applicable.
- RRHD Extend - C18: Not applicable.

Vapour pressure

<table>
<thead>
<tr>
<th>Ingredient name, Method</th>
<th>RRHD SB-C18</th>
<th>RRHD Eclipse Plus C18</th>
<th>RRHD Extend - C18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour Pressure at 20˚C</td>
<td>mm Hg</td>
<td>kPa</td>
<td>mm Hg</td>
</tr>
<tr>
<td>Acetonitrile, Method</td>
<td>70.89</td>
<td>9.5</td>
<td>70.89</td>
</tr>
<tr>
<td>water</td>
<td>23.8</td>
<td>3.2</td>
<td>23.8</td>
</tr>
<tr>
<td>Vapour pressure at 50˚C</td>
<td>mm Hg</td>
<td>kPa</td>
<td>mm Hg</td>
</tr>
<tr>
<td>Acetonitrile, Method</td>
<td>92.258</td>
<td>12.3</td>
<td>92.258</td>
</tr>
<tr>
<td>water</td>
<td>92.258</td>
<td>12.3</td>
<td>92.258</td>
</tr>
</tbody>
</table>

Evaporation rate

- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

Relative density

- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

Vapour density

- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

Explosive properties

- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

Oxidising properties

- RRHD SB-C18: Not available.
- RRHD Eclipse Plus C18: Not available.
- RRHD Extend - C18: Not available.

Particle characteristics

<table>
<thead>
<tr>
<th>Median particle size</th>
<th>RRHD SB-C18: Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD Eclipse Plus C18: Not applicable.</td>
<td></td>
</tr>
<tr>
<td>RRHD Extend - C18: Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 9: Physical and chemical properties

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
- RRHD SB-C18: No specific test data related to reactivity available for this product or its ingredients.
- RRHD Eclipse Plus C18: No specific test data related to reactivity available for this product or its ingredients.
- RRHD Extend - C18: No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability
- RRHD SB-C18: The product is stable.
- RRHD Eclipse Plus C18: The product is stable.
- RRHD Extend - C18: The product is stable.

10.3 Possibility of hazardous reactions
- RRHD SB-C18: Under normal conditions of storage and use, hazardous reactions will not occur.
- RRHD Eclipse Plus C18: Under normal conditions of storage and use, hazardous reactions will not occur.
- RRHD Extend - C18: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
- RRHD SB-C18: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- RRHD Eclipse Plus C18: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- RRHD Extend - C18: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials
- RRHD SB-C18: Reactive or incompatible with the following materials: oxidising materials
- RRHD Eclipse Plus C18: Reactive or incompatible with the following materials: oxidising materials
- RRHD Extend - C18: Reactive or incompatible with the following materials: oxidising materials

10.6 Hazardous decomposition products
- RRHD SB-C18: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- RRHD Eclipse Plus C18: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- RRHD Extend - C18: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>17100 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2460 mg/kg</td>
<td></td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>17100 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2460 mg/kg</td>
<td></td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>17100 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2460 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapours) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>2463.1 500</td>
<td>5418.7 1100</td>
<td>N/A</td>
<td>54.2 11</td>
<td>N/A</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>2463.1 500</td>
<td>5418.7 1100</td>
<td>N/A</td>
<td>54.2 11</td>
<td>N/A</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>2463.1 500</td>
<td>5418.7 1100</td>
<td>N/A</td>
<td>54.2 11</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 uL</td>
<td>-</td>
</tr>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 mg</td>
<td>-</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 uL</td>
<td>-</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 mg</td>
<td>-</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 uL</td>
<td>-</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

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)
SECTION 11: Toxicological information

Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure
RRHD SB-C18
RRHD Eclipse Plus C18
RRHD Extend - C18

Potential acute health effects

Inhalation
RRHD SB-C18
No known significant effects or critical hazards.
RRHD Eclipse Plus C18
No known significant effects or critical hazards.
RRHD Extend - C18
No known significant effects or critical hazards.

Ingestion
RRHD SB-C18
No known significant effects or critical hazards.
RRHD Eclipse Plus C18
No known significant effects or critical hazards.
RRHD Extend - C18
No known significant effects or critical hazards.

Skin contact
RRHD SB-C18
No known significant effects or critical hazards.
RRHD Eclipse Plus C18
No known significant effects or critical hazards.
RRHD Extend - C18
No known significant effects or critical hazards.

Eye contact
RRHD SB-C18
Causes serious eye irritation.
RRHD Eclipse Plus C18
Causes serious eye irritation.
RRHD Extend - C18
Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation
RRHD SB-C18
No specific data.
RRHD Eclipse Plus C18
No specific data.
RRHD Extend - C18
No specific data.

Ingestion
RRHD SB-C18
No specific data.
RRHD Eclipse Plus C18
No specific data.
RRHD Extend - C18
No specific data.

Skin contact
RRHD SB-C18
No specific data.
RRHD Eclipse Plus C18
No specific data.
RRHD Extend - C18
No specific data.

Eye contact
RRHD SB-C18
Adverse symptoms may include the following:
- pain or irritation
- watering
- redness
RRHD Eclipse Plus C18
Adverse symptoms may include the following:
- pain or irritation
- watering
- redness
RRHD Extend - C18
Adverse symptoms may include the following:
- pain or irritation
- watering
- redness

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

Short term exposure
Potential immediate effects
Not available.
Potential delayed effects
Not available.

Long term exposure
Potential immediate effects
Not available.
Potential delayed effects
Not available.
SECTION 11: Toxicological information

Potential chronic health effects

**General**: RRHD SB-C18 No known significant effects or critical hazards. RRHD Eclipse Plus C18 No known significant effects or critical hazards. RRHD Extend - C18 No known significant effects or critical hazards.

**Carcinogenicity**: RRHD SB-C18 No known significant effects or critical hazards. RRHD Eclipse Plus C18 No known significant effects or critical hazards. RRHD Extend - C18 No known significant effects or critical hazards.

**Mutagenicity**: RRHD SB-C18 No known significant effects or critical hazards. RRHD Eclipse Plus C18 No known significant effects or critical hazards. RRHD Extend - C18 No known significant effects or critical hazards.

**Reproductive toxicity**: RRHD SB-C18 No known significant effects or critical hazards. RRHD Eclipse Plus C18 No known significant effects or critical hazards. RRHD Extend - C18 No known significant effects or critical hazards.

**11.2 Information on other hazards**

**11.2.1 Endocrine disrupting properties**

Not available.

**11.2.2 Other information**

Not available.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18</td>
<td>Acute IC50 3685000 µg/l Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 36000000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1000000 µg/l Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1600000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
</tbody>
</table>

| RRHD Eclipse Plus C18 | Acute IC50 3685000 µg/l Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 36000000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 1000000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Chronic NOEC 1000000 µg/l Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Chronic NOEC 1600000 µg/l Fresh water | Daphnia - Daphnia magna | 21 days |

| RRHD Extend - C18 | Acute IC50 3685000 µg/l Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 36000000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 1000000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Chronic NOEC 1000000 µg/l Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Chronic NOEC 1600000 µg/l Fresh water | Daphnia - Daphnia magna | 21 days |

12.2 Persistence and degradability
SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)</td>
<td>70 % - Readily - 21 days</td>
<td>-</td>
<td>Activated sludge</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)</td>
<td>70 % - Readily - 21 days</td>
<td>-</td>
<td>Activated sludge</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)</td>
<td>70 % - Readily - 21 days</td>
<td>-</td>
<td>Activated sludge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 acetonitrile</td>
<td>-0.34</td>
<td>3</td>
<td>low</td>
</tr>
<tr>
<td>RRHD Eclipse Plus C18 acetonitrile</td>
<td>-0.34</td>
<td>3</td>
<td>low</td>
</tr>
<tr>
<td>RRHD Extend - C18 acetonitrile</td>
<td>-0.34</td>
<td>3</td>
<td>low</td>
</tr>
</tbody>
</table>

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

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
RRHD pH Method Development Kit, Part Number 5190-6152

SECTION 12: Ecological information

12.6 Endocrine disrupting properties
Not available.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

<table>
<thead>
<tr>
<th>Product</th>
<th>Methods of disposal</th>
<th>Hazardous waste</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
<td>The classification of the product may meet the criteria for a hazardous waste.</td>
<td>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.</td>
</tr>
</tbody>
</table>

SECTION 14: Transport information

This Safety Data Sheet is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

<table>
<thead>
<tr>
<th>14.1 UN number or ID number</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>14.2 UN proper shipping name</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3 Transport hazard class(es)</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.4 Packing group</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.5 Environmental hazards</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Additional information

Special provisions:
ADR: 216
IATA: A46
IMDG: 216

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Date of previous issue: No previous validation
Version: 1
SECTION 14: Transport 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

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

Annex XIV - List of substances subject to authorisation

None of the components are listed.

Substances of very high concern

None of the components are listed.

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

Not listed.

Label

RRHD SB-C18 : Not applicable.
RRHD Eclipse Plus C18 : Not applicable.
RRHD Extend - C18 : Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control)

- Air

Listed

- Water

Listed

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>RRHD SB-C18</th>
<th>RRHD Eclipse Plus C18</th>
<th>RRHD Extend - C18</th>
</tr>
</thead>
<tbody>
<tr>
<td>P5c</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

International regulations
SECTION 15: Regulatory information

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
Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Eurasian Economic Union : Russian Federation inventory: All components are listed or exempted.
Japan : Japan inventory (CSCL): All components are listed or exempted.
        : Japan inventory (ISHL): All components are listed or exempted.
New Zealand : All components are listed or exempted.
Philippines : Not determined.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : All components are listed or exempted.
United States : All components are active or exempted.
Viet Nam : Not determined.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms
ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
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 according to Regulation (EC) No. 1272/2008 [CLP/GHS]
SECTION 16: Other information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRHD SB-C18 Flam. Liq. 2, H225 Eye Irrit. 2, H319</td>
<td>On basis of test data Calculation method</td>
</tr>
<tr>
<td>RRHD Extend - C18 Flam. Liq. 2, H225 Eye Irrit. 2, H319</td>
<td>On basis of test data Calculation method</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements

RRHD SB-C18

| H225 | Highly flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |

RRHD Eclipse Plus C18

| H225 | Highly flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |

RRHD Extend - C18

| H225 | Highly flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |

Full text of classifications [CLP/GHS]

RRHD SB-C18

| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Flam. Liq. 2 | FLAMMABLE LIQUIDS - Category 2 |

RRHD Eclipse Plus C18

| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Flam. Liq. 2 | FLAMMABLE LIQUIDS - Category 2 |

RRHD Extend - C18

| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Flam. Liq. 2 | FLAMMABLE LIQUIDS - Category 2 |

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