SAFETY DATA SHEET

CO2 Filter Kit with 1/4 in Connections, Part Number CP17982

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: CO2 Filter Kit with 1/4 in Connections, Part Number CP17982
Part No. (Kit): CP17982
Part No.: Gas Clean Filter CO2 CP17969
Gas Clean Filter Moisture CP17971

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

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical chemistry.</td>
</tr>
<tr>
<td>Gas Clean Filter CO2 1 x 200 ml</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture 1 x 200 ml</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
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: Gas Clean Filter CO2 Mixture (encapsulated in article)
Gas Clean Filter Moisture Mixture (encapsulated in article)

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

Gas Clean Filter CO2
H314 SKIN CORROSION/IRRITATION - Category 1
H335 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

Gas Clean Filter Moisture
H350 CARCINOGENICITY - Category 1A
### SECTION 2: Hazards identification

<table>
<thead>
<tr>
<th>Ingredients of unknown toxicity</th>
<th>Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: &gt; 60%</th>
<th>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: &gt; 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredients of unknown ecotoxicity</th>
<th>Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: &gt; 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Moisture</td>
<td></td>
</tr>
</tbody>
</table>

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**

- Gas Clean Filter CO2
- Gas Clean Filter Moisture

**Signal word**

- Gas Clean Filter CO2: Danger
- Gas Clean Filter Moisture: Danger

**Hazard statements**

- Gas Clean Filter CO2: H314 - Causes severe skin burns and eye damage. H335 - May cause respiratory irritation. H412 - Harmful to aquatic life with long lasting effects.
- Gas Clean Filter Moisture: H350 - May cause cancer.

**Precautionary statements**

**Prevention**

- Gas Clean Filter Moisture: P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.

**Response**

- Gas Clean Filter CO2: P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.
- Gas Clean Filter Moisture: P308 + P313 - IF exposed or concerned: Get medical attention.

**Storage**

- Gas Clean Filter CO2: P405 - Store locked up.
- Gas Clean Filter Moisture: P405 - Store locked up.

**Disposal**

- Gas Clean Filter CO2: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Gas Clean Filter Moisture: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Date of issue/Date of revision**: 31/05/2017
**SECTION 2: Hazards identification**

**Hazardous ingredients**
- Gas Clean Filter CO2 - Calcium dihydroxide
- Gas Clean Filter Moisture - sodium hydroxide
- Gas Clean Filter CO2 - crystalline silica, respirable powder
- Gas Clean Filter Moisture - cristobalite

**Supplemental label elements**
- Gas Clean Filter CO2 - Not applicable.
- Gas Clean Filter Moisture - Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**
- Gas Clean Filter CO2 - Not applicable.
- Gas Clean Filter Moisture - Restricted to professional users.

**Special packaging requirements**
- Tactile warning of danger: Gas Clean Filter CO2 - Not applicable.
- Gas Clean Filter Moisture - Not applicable.

**2.3 Other hazards**
- Gas Clean Filter CO2 - Causes digestive tract burns.
- Gas Clean Filter Moisture - 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**
- Gas Clean Filter CO2 - Mixture (encapsulated in article)
- Gas Clean Filter Moisture - Mixture (encapsulated in article)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
</table>
| Gas Clean Filter CO2                    | Calcium dihydroxide                             | ≥75 - ≤90 | Skin Irrit. 2, H315
                                      | EC: 215-137-3                                    |         | Eye Dam. 1, H318
                                      | CAS: 1305-62-0                                   |         | STOT SE 3, H335
                                      |                                                 |         | Aquatic Chronic 3, H412
                                      |                                                 |         | Skin Corr. 1A, H314 |
|                                        | Sodium hydroxide                                | ≤5      | (inhalation)                                                            | [1] [2]  |
|                                        | EC: 215-185-5                                   |         |                                                                       |          |
|                                        | CAS: 1310-73-2                                  |         |                                                                       |          |
|                                        | Index: 011-002-00-6                             |         |                                                                       |          |
| Gas Clean Filter Moisture               | crystalline silica, respirable powder           | <10     | Carc. 1A, H350
|                                        | EC: 238-878-4                                   |         | STOT SE 2, H371 (lungs) (inhalation)                                    | [1] [2]  |
|                                        | CAS: 14808-60-7                                 |         |                                                                       |          |
|                                        | cristobalite                                    | <10     | Carc. 1A, H350
|                                        | EC: 238-455-4                                   |         | STOT RE 2, H373 (lungs)                                                | [1] [2]  |
|                                        | CAS: 14464-46-1                                 |         |                                                                       |          |

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

**Type**

**Date of issue/Date of revision**

: 31/05/2017
**SECTION 3: Composition/information on ingredients**

1. Substance classified with a health or environmental hazard
2. Substance with a workplace exposure limit
3. Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
4. Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
5. Substance of equivalent concern
6. Additional disclosure due to company policy

**SECTION 4: First aid measures**

4.1 Description of first aid measures

**Eye contact**

- **Gas Clean Filter CO2**
  - Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

- **Gas Clean Filter Moisture**
  - 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.

**Inhalation**

- **Gas Clean Filter CO2**
  - Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

- **Gas Clean Filter Moisture**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact**

- **Gas Clean Filter CO2**
  - Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

- **Gas Clean Filter Moisture**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

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SECTION 4: First aid measures

Ingestion: Gas Clean Filter CO2
- Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Gas Clean Filter Moisture
- Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. 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: Gas Clean Filter CO2
- No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Gas Clean Filter Moisture
- No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

**Eye contact**: Gas Clean Filter CO2
- Causes serious eye damage.

Gas Clean Filter Moisture
- No known significant effects or critical hazards.

**Inhalation**: Gas Clean Filter CO2
- May cause respiratory irritation.

Gas Clean Filter Moisture
- No known significant effects or critical hazards.

**Skin contact**: Gas Clean Filter CO2
- Causes severe burns.

Gas Clean Filter Moisture
- No known significant effects or critical hazards.

**Ingestion**: Gas Clean Filter CO2
- Corrosive to the digestive tract. Causes burns.

Gas Clean Filter Moisture
- No known significant effects or critical hazards.

Over-exposure signs/symptoms

**Eye contact**: Gas Clean Filter CO2
- Adverse symptoms may include the following: pain, watering, redness.

Gas Clean Filter Moisture
- No specific data.

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## SECTION 4: First aid measures

| Ingestion | Gas Clean Filter CO₂ | Adverse symptoms may include the following: stomach pains |
| Ingestion | Gas Clean Filter Moisture | No specific data. |
| Skin contact | Gas Clean Filter CO₂ | Adverse symptoms may include the following: pain or irritation, redness, blistering may occur |
| Skin contact | Gas Clean Filter Moisture | No specific data. |
| Inhalation | Gas Clean Filter CO₂ | Adverse symptoms may include the following: respiratory tract irritation, coughing |
| Inhalation | Gas Clean Filter Moisture | No specific data. |

### Notes to physician

- Gas Clean Filter CO₂: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Gas Clean Filter Moisture: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

### Specific treatments

- Gas Clean Filter CO₂: No specific treatment.
- Gas Clean Filter Moisture: No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- **Suitable extinguishing media**
  - Gas Clean Filter CO₂: Use an extinguishing agent suitable for the surrounding fire.
  - Gas Clean Filter Moisture: Use an extinguishing agent suitable for the surrounding fire.
- **Unsuitable extinguishing media**
  - Gas Clean Filter CO₂: None known.
  - Gas Clean Filter Moisture: None known.

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

- **Hazardous combustion products**
  - Gas Clean Filter CO₂: Decomposition products may include the following materials: metal oxide/oxides
  - Gas Clean Filter Moisture: Decomposition products may include the following materials: metal oxide/oxides

### 5.3 Advice for firefighters

- **Special precautions for fire-fighters**
  - Gas Clean Filter CO₂: 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.
  - Gas Clean Filter Moisture: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- **Special protective equipment for fire-fighters**
  - Gas Clean Filter CO₂: 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.
  - Gas Clean Filter Moisture: 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)
SECTION 5: Firefighting measures

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:
- Gas Clean Filter CO2: 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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- Gas Clean Filter Moisture: 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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:
- Gas Clean Filter CO2: 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".
- Gas Clean Filter Moisture: 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:
- Gas Clean Filter CO2: 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). Water polluting material. May be harmful to the environment if released in large quantities.
- Gas Clean Filter Moisture: 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).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up:
- Gas Clean Filter CO2: Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Gas Clean Filter Moisture: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

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

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Gas Clean Filter CO2</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advice on general occupational hygiene</strong></td>
<td>Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.</td>
<td>Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.</td>
</tr>
<tr>
<td><strong>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.</strong></td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Storage</th>
<th>Gas Clean Filter CO2</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</strong></td>
<td>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.3 Specific end use(s)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Gas Clean Filter CO2</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
</table>
| **Industrial applications, Professional applications.** | Industrial applications, Professional applications. | IndustriXXXX
SECTION 7: Handling and storage

Industrial sector specific solutions:
- Gas Clean Filter CO2: Not applicable.
- Gas Clean Filter Moisture: Not applicable.

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>Gas Clean Filter CO2 Calcium dihydroxide</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture crystalline silica, respirable powder</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.1 mg/m³ 8 hours. Form: respirable dust</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture cristobalite</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.1 mg/m³ 8 hours. Form: respirable dust</td>
</tr>
</tbody>
</table>

**Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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**

No DNELs/DMELs available.

**PNECs**

No PNECs available

8.2 Exposure controls

**Appropriate engineering controls**

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**Skin protection**

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SECTION 8: Exposure controls/personal 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.

**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

9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state**
- Gas Clean Filter CO2: Solid. [Granular solid.]
- Gas Clean Filter Moisture: Solid. [Granular solid.]

**Colour**
- Gas Clean Filter Moisture: Tan.

**Odour**
- Gas Clean Filter CO2: Characteristic.
- Gas Clean Filter Moisture: Not available.

**Odour threshold**
- Gas Clean Filter CO2: Not available.
- Gas Clean Filter Moisture: Not available.

**pH**
- Gas Clean Filter CO2: >12 [Conc. (% w/w): 0.14%]
- Gas Clean Filter Moisture: Not available.

**Melting point/freezing point**
- Gas Clean Filter CO2: Not available.
- Gas Clean Filter Moisture: Not available.

**Initial boiling point and boiling range**
- Gas Clean Filter CO2: Not available.
- Gas Clean Filter Moisture: Not available.

**Flash point**
- Gas Clean Filter CO2: Closed cup: >535°C
- Gas Clean Filter Moisture: Not available.

**Evaporation rate**
- Gas Clean Filter CO2: Not available.
- Gas Clean Filter Moisture: Not available.

**Flammability (solid, gas)**
- Gas Clean Filter CO2: Not available.
- Gas Clean Filter Moisture: Not available.
## SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Gas Clean Filter CO2</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxidising properties</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
- Gas Clean Filter CO2: No specific test data related to reactivity available for this product or its ingredients.
- Gas Clean Filter Moisture: No specific test data related to reactivity available for this product or its ingredients.

### 10.2 Chemical stability
- Gas Clean Filter CO2: The product is stable.
- Gas Clean Filter Moisture: The product is stable.

### 10.3 Possibility of hazardous reactions
- Gas Clean Filter CO2: Under normal conditions of storage and use, hazardous reactions will not occur.
- Gas Clean Filter Moisture: Under normal conditions of storage and use, hazardous reactions will not occur.

### 10.4 Conditions to avoid
- Gas Clean Filter CO2: No specific data.
- Gas Clean Filter Moisture: No specific data.
**SECTION 10: Stability and reactivity**

10.5 Incompatible materials

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>May react or be incompatible with oxidising materials.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>May react or be incompatible with oxidising materials.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10.6 Hazardous decomposition products

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 11: Toxicological information**

11.1 Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7340 nig/kg</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Acute toxicity estimates**

Not available.

**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>Gas Clean Filter CO2</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Calcium dihydroxide</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 50 micrograms</td>
<td>-</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1 Percent 0.5 minutes 1 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td></td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td></td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Sensitiser**

Conclusion/Summary : Not available.

**Specific target organ toxicity (single exposure)**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Calcium dihydroxide</td>
<td>Respiratory tract irritation</td>
<td>Inhalation</td>
<td>lungs</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity (repeated exposure)**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>Category 2</td>
<td>Not determined</td>
<td>lungs</td>
</tr>
<tr>
<td>cristobalite</td>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Aspiration hazard**

Not available.

**Information on likely routes of exposure**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Routes of entry anticipated: Oral, Dermal, Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>Routes of entry anticipated: Oral, Dermal, Inhalation.</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>Routes of entry anticipated: Oral, Dermal, Inhalation.</td>
</tr>
</tbody>
</table>

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>May cause respiratory irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Date of issue/Date of revision** : 31/05/2017
## SECTION 11: Toxicological information

### Ingestion
- **Gas Clean Filter CO2**: Corrosive to the digestive tract. Causes burns. No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

### Skin contact
- **Gas Clean Filter CO2**: Causes severe burns. No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

### Eye contact
- **Gas Clean Filter CO2**: Causes serious eye damage. No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

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

#### Inhalation
- **Gas Clean Filter CO2**: Adverse symptoms may include the following: respiratory tract irritation, coughing.
- **Gas Clean Filter Moisture**: No specific data.

#### Ingestion
- **Gas Clean Filter CO2**: Adverse symptoms may include the following: stomach pains.
- **Gas Clean Filter Moisture**: No specific data.

#### Skin contact
- **Gas Clean Filter CO2**: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur.
- **Gas Clean Filter Moisture**: No specific data.

#### Eye contact
- **Gas Clean Filter CO2**: Adverse symptoms may include the following: pain, watering, redness.
- **Gas Clean Filter Moisture**: No specific data.

### 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.

### Potential chronic health effects

#### General
- **Gas Clean Filter CO2**: No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

#### Carcinogenicity
- **Gas Clean Filter CO2**: No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: May cause cancer. Risk of cancer depends on duration and level of exposure.

#### Mutagenicity
- **Gas Clean Filter CO2**: No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

#### Teratogenicity
- **Gas Clean Filter CO2**: No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

#### Developmental effects
- **Gas Clean Filter CO2**: No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

#### Fertility effects
- **Gas Clean Filter CO2**: No known significant effects or critical hazards.
- **Gas Clean Filter Moisture**: No known significant effects or critical hazards.

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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>Gas Clean Filter CO2</td>
<td>Acute LC50 33884.4 μg/l Fresh water</td>
<td>Fish - Clarias gariepinus - Fingerling</td>
<td>96 hours</td>
</tr>
<tr>
<td>Calcium dihydroxide</td>
<td>Acute EC50 40.38 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Acute LC50 125 ppm Fresh water</td>
<td>Fish - Gambusia affinis - Adult</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Not available.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter CO2</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (K_{OC})</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

12.5 Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>PBT</th>
<th>vPvB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

12.6 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>
</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>
</tr>
</tbody>
</table>

Hazardous waste

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

<table>
<thead>
<tr>
<th>Methods of disposal</th>
<th>Special precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.</td>
</tr>
</tbody>
</table>

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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.

ADR/RID / IMDG / IATA : Not regulated.

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 Annex II of Marpol and the IBC Code

Not available.

SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

Annex XIV

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

Gas Clean Filter CO2

Gas Clean Filter Moisture

Not applicable.

Restricted to professional users.

Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : All components are listed or exempted.

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SECTION 15: Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Not determined.</td>
</tr>
<tr>
<td>China</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Europe</td>
<td>All components are listed or exempted.</td>
</tr>
</tbody>
</table>
| Japan         | Japan inventory (ENCS): All components are listed or exempted.  
                  Japan inventory (ISHL): All components are listed or exempted. |
| Malaysia      | All components are listed or exempted. |
| New Zealand   | Not determined.             |
| Philippines   | Not determined.             |
| Republic of Korea | Not determined.            |
| Taiwan        | All components are listed or exempted. |
| Thailand      | Not determined.             |
| Turkey        | Not determined.             |
| United States | All components are listed 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

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
</table>
| Gas Clean Filter CO2  
Skin Corr. 1, H314  
STOT SE 3, H335  
Aquatic Chronic 3, H412 | On basis of test data  
Calculation method  
Calculation method |
| Gas Clean Filter Moisture  
Carc. 1A, H350 | Calculation method |

Full text of abbreviated H statements

<table>
<thead>
<tr>
<th>H Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer.</td>
</tr>
<tr>
<td>H371 (inhalation)</td>
<td>May cause damage to organs if inhaled.</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

Full text of classifications [CLP/GHS]

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16/17
## SECTION 16: Other information

| Gas Clean Filter CO2          | Long-term (chronic) aquatic hazard - Category 3 |
|                              | Serious eye damage/eye irritation - Category 1 |
| Aquatic Chronic 3, H412      | Skin corrosion/irritation - Category 1         |
| Eye Dam. 1, H318             | Skin corrosion/irritation - Category 1A        |
| Skin Corr. 1, H314           | Skin corrosion/irritation - Category 2         |
| Skin Corr. 1A, H314          | Specific target organ toxicity - single exposure (Respiratory tract irritation) - Category 3 |
| Skin Irrit. 2, H315          |                                                |
| STOT SE 3, H335              |                                                |

| Gas Clean Filter Moisture    | Carcinogenicity - Category 1A                  |
| Carc. 1A, H350              | Specific target organ toxicity - repeated exposure (Respiratory tract irritation) - Category 2 |
| STOT RE 2, H373             | Specific target organ toxicity - single exposure (Respiratory tract irritation) - Category 2 |
| STOT SE 2, H371 (inhalation) |                                                |

**Date of issue/Date of revision**: 31/05/2017  
**Date of previous issue**: No previous validation.  
**Version**: 1

**Notice to reader**

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