SAFETY DATA SHEET
Gas Clean Filter Kit for TCD, Part Number CP738408

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: Gas Clean Filter Kit for TCD, Part Number CP738408
Part No. (Kit): CP738408
Part No.: Gas Clean Filter Oxygen CP17970
Gas Clean Filter Moisture CP17971

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

Identified uses

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical chemistry.</td>
</tr>
<tr>
<td>Gas Clean Filter Oxygen</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</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 Oxygen 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 Oxygen

H350 CARCINOGENICITY - Category 1A
H372 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
H400 ACUTE AQUATIC HAZARD - Category 1
H411 LONG-TERM AQUATIC HAZARD - Category 2

Gas Clean Filter Moisture

H350 CARCINOGENICITY - Category 1A

Ingredients of unknown toxicity: Gas Clean Filter Moisture Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 100%

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SECTION 2: Hazards identification

Ingredients of unknown ecotoxicity:
- Gas Clean Filter Moisture
- Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 100%

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:

Signal word:
- Gas Clean Filter Oxygen: Danger
- Gas Clean Filter Moisture: Danger

Hazard statements:
- Gas Clean Filter Oxygen: GHS08 - May cause cancer. Causes damage to organs through prolonged or repeated exposure.
- Gas Clean Filter Moisture: GHS08 - May cause cancer.

Precautionary statements

Prevention:
- Gas Clean Filter Oxygen: P201 - Obtain special instructions before use.
- P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
- P273 - Avoid release to the environment.
- P260 - Do not breathe dust.

Response:
- Gas Clean Filter Oxygen: P314 - Get medical attention if you feel unwell.
- P308 + P313 - IF exposed or concerned: Get medical attention.

Storage:
- Gas Clean Filter Oxygen: P405 - Store locked up.

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

Hazardous ingredients:
- Gas Clean Filter Oxygen - aluminium oxide
- nickel monoxide
- crystalline silica, respirable powder
- cristobalite
- Gas Clean Filter Moisture

Supplemental label elements:
- Gas Clean Filter Oxygen: Contains nickel monoxide. May produce an allergic reaction.
- 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 Oxygen: Restricted to professional users.
- Gas Clean Filter Moisture: Restricted to professional users.

Special packaging requirements:
- Tactile warning of danger:
  - Gas Clean Filter Oxygen: Not applicable.
  - Gas Clean Filter Moisture: Not applicable.
**CONFORMS TO REGULATION (EC) No. 1907/2006 (REACH), ANNEX II - UNITED KINGDOM (UK)**

**Gas Clean Filter Kit for TCD, Part Number CP738408**

**SECTION 2: Hazards identification**

**2.3 Other hazards**

Other hazards which do not result in classification:

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazard Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen</td>
<td>None known.</td>
<td></td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>None known.</td>
<td></td>
</tr>
</tbody>
</table>

**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**

<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>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aluminium oxide</td>
<td>EC: 215-691-6, CAS: 1344-28-1</td>
<td>≥75 - ≤90</td>
<td>STOT RE 1, H372 (lungs) (inhalation)</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[2]</td>
</tr>
<tr>
<td>Copper oxide, Activated</td>
<td>EC: 215-269-1, CAS: 1317-38-0</td>
<td>≤10</td>
<td>Aquatic Acute 1, H400 (M=100)</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 1, H410 (M=1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4, H332</td>
<td>[2]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carc. 1A, H350i (inhalation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT RE 1, H372</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 4, H413</td>
<td></td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crystalline silica, respirable powder</td>
<td>EC: 238-878-4, CAS: 14808-60-7</td>
<td>&lt;10</td>
<td>Carc. 1A, H350</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 2, H371 (lungs) (inhalation)</td>
<td>[2]</td>
</tr>
<tr>
<td>cristobalite</td>
<td>EC: 238-455-4, CAS: 14464-46-1</td>
<td>&lt;10</td>
<td>Carc. 1A, H350</td>
<td>[1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT RE 2, H373 (lungs)</td>
<td>[2]</td>
</tr>
</tbody>
</table>

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**

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [5] Substance of equivalent concern

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**Eye contact**

<table>
<thead>
<tr>
<th>Component</th>
<th>First aid Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen</td>
<td>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.</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Date of issue/Date of revision**

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**SECTION 4: First aid measures**

| **Inhalation** | **Gas Clean Filter Oxygen** | 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. |
| **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 Oxygen** | 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. |
| **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. |

| **Ingestion** | **Gas Clean Filter Oxygen** | 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. |
| **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 Oxygen** | 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. |

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SECTION 4: First aid measures

Gas Clean Filter Kit for TCD, Part Number CP738408

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: Gas Clean Filter Oxygen No known significant effects or critical hazards.
Gas Clean Filter Moisture No known significant effects or critical hazards.

Inhalation: Gas Clean Filter Oxygen No known significant effects or critical hazards.
Gas Clean Filter Moisture No known significant effects or critical hazards.

Skin contact: Gas Clean Filter Oxygen No known significant effects or critical hazards.
Gas Clean Filter Moisture No known significant effects or critical hazards.

Ingestion: Gas Clean Filter Oxygen No known significant effects or critical hazards.
Gas Clean Filter Moisture No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: Gas Clean Filter Oxygen No specific data.
Gas Clean Filter Moisture No specific data.

Inhalation: Gas Clean Filter Oxygen No specific data.
Gas Clean Filter Moisture No specific data.

Skin contact: Gas Clean Filter Oxygen No specific data.
Gas Clean Filter Moisture No specific data.

Ingestion: Gas Clean Filter Oxygen No specific data.
Gas Clean Filter Moisture No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: Gas Clean Filter Oxygen 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 Oxygen No specific treatment.
Gas Clean Filter Moisture No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Gas Clean Filter Oxygen 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 Oxygen None known.
Gas Clean Filter Moisture None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Gas Clean Filter Oxygen Decomposition products may include the following materials: metal oxides/oxides.
Gas Clean Filter Moisture Decomposition products may include the following materials: metal oxides/oxides.

5.3 Advice for firefighters

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Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

Gas Clean Filter Kit for TCD, Part Number CP738408

SECTION 5: Firefighting measures

Special precautions for fire-fighters
- Gas Clean Filter Oxygen: 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 Oxygen: 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) 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 Oxygen: 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 spill 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 spill material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders
- Gas Clean Filter Oxygen: 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 Oxygen: Avoid dispersal of spill 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. Collect spillage.
- Gas Clean Filter Moisture: Avoid dispersal of spill 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

Date of issue/Date of revision: 27/04/2017
### SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Methods for cleaning up</th>
<th>Gas Clean Filter Oxygen</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 Oxygen</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<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. Avoid release to the environment. 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>
<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>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advice on general occupational hygiene</th>
<th>Gas Clean Filter Oxygen</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<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>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Storage</th>
<th>Gas Clean Filter Oxygen</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<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.</td>
<td>Store in accordance with local regulations. Store in original</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 7: Handling and storage

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.

Seveso Directive - Reporting thresholds (in tonnes)

<table>
<thead>
<tr>
<th>Name</th>
<th>Notification and MAPP threshold</th>
<th>Safety report threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel compounds inhalable powder form</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)

Recommendations:

Industrial sector specific solutions:

- Gas Clean Filter Oxygen: Industrial applications, Professional applications.
- Gas Clean Filter Moisture: Industrial applications, Professional applications.

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 Oxygen aluminium oxide</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: inhalable dust</td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.5 mg/m³, (as Mn) 8 hours.</td>
</tr>
<tr>
<td>nickel monoxide</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. Inhalation sensitiser. Notes: as Ni</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.5 mg/m³, (as Ni) 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>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 atmosphere...
**SECTION 8: Exposure controls/personal protection**

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**

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**

- **Hand protection**
  - Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Use respirators according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
  - 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.

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

- **Skin protection**
  - 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 Oxygen: Solid. [Granular solid.]
  - Gas Clean Filter Moisture: Solid. [Granular solid.]
- **Colour**
  - Gas Clean Filter Oxygen: Brown. [Dark]
  - Gas Clean Filter Moisture: Tan.
### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Gas Clean Filter Oxygen</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
<td>Closed cup: &gt;535°C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Insoluble in the following materials: cold water and hot water. Insoluble in the following materials: cold water and hot water.</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Gas Clean Filter Oxygen</th>
<th>Gas Clean Filter Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
- Gas Clean Filter Oxygen
- 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 Oxygen
- Gas Clean Filter Moisture
The product is stable.

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

10.4 Conditions to avoid
- Gas Clean Filter Oxygen
- Gas Clean Filter Moisture
No specific data.

10.5 Incompatible materials
- Gas Clean Filter Oxygen
- Gas Clean Filter Moisture
May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products
- Gas Clean Filter Oxygen
- Gas Clean Filter Moisture
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

<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>Gas Clean Filter Oxygen</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>aluminium oxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper oxide, Activated</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>470 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3478 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>nickel monoxide</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Acute toxicity estimates

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SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen&lt;br&gt;Oral&lt;br&gt;Inhalation (dusts and mists)</td>
<td>5814 mg/kg&lt;br&gt;17.44 mg/l</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

**Conclusion/Summary** : Not available.

**Sensitiser**

**Conclusion/Summary** : Not available.

**Skin** : May cause sensitisation by skin contact.

**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 Moisture&lt;br&gt;crystalline silica, respirable powder</td>
<td>Category 2</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 Oxygen&lt;br&gt;aluminium oxide</td>
<td>Category 1</td>
<td>Inhalation</td>
<td>lungs</td>
</tr>
<tr>
<td>Gas Clean Filter Oxygen&lt;br&gt;nickel monoxide</td>
<td>Category 1</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture&lt;br&gt;cristobalite</td>
<td>Category 2</td>
<td>Not determined</td>
<td>lungs</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

Not available.

**Information on likely routes of exposure**

Gas Clean Filter Oxygen<br>Routes of entry anticipated: Oral, Dermal, Inhalation.
Gas Clean Filter Moisture<br>Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

**Inhalation**

Gas Clean Filter Oxygen<br>No known significant effects or critical hazards.
Gas Clean Filter Moisture<br>No known significant effects or critical hazards.

**Ingestion**

Gas Clean Filter Oxygen<br>No known significant effects or critical hazards.
Gas Clean Filter Moisture<br>No known significant effects or critical hazards.

**Skin contact**

Gas Clean Filter Oxygen<br>No known significant effects or critical hazards.
Gas Clean Filter Moisture<br>No known significant effects or critical hazards.

**Eye contact**

Gas Clean Filter Oxygen<br>No known significant effects or critical hazards.
Gas Clean Filter Moisture<br>No known significant effects or critical hazards.

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

**Inhalation**

Gas Clean Filter Oxygen<br>No specific data.
Gas Clean Filter Moisture<br>No specific data.

**Ingestion**

Gas Clean Filter Oxygen<br>No specific data.
Gas Clean Filter Moisture<br>No specific data.

**Skin contact**

Gas Clean Filter Oxygen<br>No specific data.
Gas Clean Filter Moisture<br>No specific data.

**Eye contact**

Gas Clean Filter Oxygen<br>No specific data.
Gas Clean Filter Moisture<br>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**

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SECTION 11: Toxicological information

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects:
- **General**
  - Gas Clean Filter Oxygen: Causes damage to organs through prolonged or repeated exposure.
  - Gas Clean Filter Moisture: No known significant effects or critical hazards.
- **Carcinogenicity**
  - Gas Clean Filter Oxygen: May cause cancer. Risk of cancer depends on duration and level of exposure.
  - Gas Clean Filter Moisture: May cause cancer. Risk of cancer depends on duration and level of exposure.
- **Mutagenicity**
  - Gas Clean Filter Oxygen: No known significant effects or critical hazards.
  - Gas Clean Filter Moisture: No known significant effects or critical hazards.
- **Teratogenicity**
  - Gas Clean Filter Oxygen: No known significant effects or critical hazards.
  - Gas Clean Filter Moisture: No known significant effects or critical hazards.
- **Developmental effects**
  - Gas Clean Filter Oxygen: No known significant effects or critical hazards.
  - Gas Clean Filter Moisture: No known significant effects or critical hazards.
- **Fertility effects**
  - Gas Clean Filter Oxygen: No known significant effects or critical hazards.
  - Gas Clean Filter Moisture: No known significant effects or critical hazards.

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 Oxygen aluminium oxide</td>
<td>Acute EC50 114.357 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate, Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>Copper oxide, Activated</td>
<td>Acute LC50 2.6 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>Acute LC50 &gt;56000 ppm Fresh water EC50 &gt;100 mg/l Fresh water</td>
<td>Fish - Gambusia affinis - Adult, Algae - Desmodesmus subspicatus, Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 &gt;100 mg/l NOEC &gt;100 mg/l</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Not available.

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>Gas Clean Filter Oxygen nickel monoxide</td>
<td>-</td>
<td>5613</td>
<td>high</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
- **PBT**: Not applicable.
- **vPvB**: Not applicable.

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

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product**

**Methods of disposal**

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

**Hazardous waste**

- The classification of the product may meet the criteria for a hazardous waste.

**Packaging**

**Methods of disposal**

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

**Special precautions**

- This material and its container must be disposed of in a safe way. 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.

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.

**Regulatory information**

**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**

- 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 Oxygen: Restricted to professional users.
- Gas Clean Filter Moisture: Restricted to professional users.

**Other EU regulations**

**Europe inventory**

- All components are listed or exempted.

**Ozone depleting substances (1005/2009/EU)**

- Not listed.

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

- Not listed.

Date of issue/Date of revision

- 27/04/2017
**SECTION 15: Regulatory information**

**Seveso Directive**
This product is controlled under the Seveso Directive.

**Named substances**

<table>
<thead>
<tr>
<th>Name</th>
<th>List name</th>
<th>Name on list</th>
<th>Classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen nickel monoxide</td>
<td>UK Occupational Exposure Limits EH40 - WEL</td>
<td>inorganic nickel compounds Insoluble in water Except nickel carbonyl</td>
<td>Carc.</td>
<td></td>
</tr>
</tbody>
</table>

**Danger criteria**

<table>
<thead>
<tr>
<th>Category</th>
<th>Name</th>
<th>Danger criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gas Clean Filter Oxygen</td>
<td>E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1</td>
</tr>
</tbody>
</table>

**National regulations**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>List name</th>
<th>Name on list</th>
<th>Classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen</td>
<td>UK Occupational Exposure Limits EH40 - WEL</td>
<td>inorganic nickel compounds Insoluble in water Except nickel carbonyl</td>
<td>Carc.</td>
<td></td>
</tr>
</tbody>
</table>

**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.

**International lists**

**National inventory**

| Australia               | All components are listed or exempted.       |
| Canada                  | Not determined.                              |
| China                   | All components are listed or exempted.       |
| 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.       |
| Turkey                  | Not determined.                              |
| United States           | All components are listed or exempted.       |

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

**Date of issue/Date of revision**: 27/04/2017
CONFORMS TO REGULATION (EC) NO. 1907/2006 (REACH), ANNEX II - UNITED KINGDOM (UK)

Gas Clean Filter Kit for TCD, Part Number CP738408

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>
<tbody>
<tr>
<td>Gas Clean Filter Oxygen</td>
<td></td>
</tr>
<tr>
<td>Carc. 1A, H350</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT RE 1, H372</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 1, H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 2, H411</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Gas Clean Filter Moisture</td>
<td></td>
</tr>
<tr>
<td>Carc. 1A, H350</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements

Gas Clean Filter Oxygen
- H302: Harmful if swallowed.
- H317: May cause an allergic skin reaction.
- H332: Harmful if inhaled.
- H350: May cause cancer.
- H350i (inhalation): May cause cancer by inhalation.
- H372 (inhalation): Causes damage to organs through prolonged or repeated exposure if inhaled.
- H372: Causes damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.
- H411: Toxic to aquatic life with long lasting effects.
- H413: May cause long lasting harmful effects to aquatic life.

Gas Clean Filter Moisture
- H350: May cause cancer.
- H371 (inhalation): May cause damage to organs if inhaled.
- H373: May cause damage to organs through prolonged or repeated exposure.

Full text of classifications [CLP/GHS]

Gas Clean Filter Oxygen
- Acute Tox. 4, H302: ACUTE TOXICITY (oral) - Category 4
- Acute Tox. 4, H332: ACUTE TOXICITY (inhalation) - Category 4
- Aquatic Acute 1, H400: ACUTE AQUATIC HAZARD - Category 1
- Aquatic Chronic 1, H410: LONG-TERM AQUATIC HAZARD - Category 1
- Aquatic Chronic 2, H411: LONG-TERM AQUATIC HAZARD - Category 2
- Aquatic Chronic 4, H413: LONG-TERM AQUATIC HAZARD - Category 4
- Carc. 1A, H350: CARCINOGENICITY - Category 1A
- Carc. 1A, H350i (inhalation): CARCINOGENICITY (inhalation) - Category 1A
- Skin Sens. 1, H317: SKIN SENSITISATION - Category 1
- STOT RE 1, H372 (inhalation): SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (inhalation) - Category 1
- STOT RE 1, H372: SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1

Gas Clean Filter Moisture
- Carc. 1A, H350: CARCINOGENICITY - Category 1A
- STOT RE 2, H373: SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
- STOT SE 2, H371 (inhalation): SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (inhalation) - Category 2

Date of issue/Date of revision: 27/04/2017
SECTION 16: Other information

Date of issue/Date of revision: 27/04/2017
Date of previous issue: No previous validation.
Version: 1

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