Conforms to HPR 2015

SAFETY DATA SHEET

Agilent Technologies

Gas Clean Filter Kit for TCD, Part Number CP738408

Section 1. Identification

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

Product identifier : Gas Clean Filter Kit for TCD, Part Number CP738408

Part no. (chemical kit) : CP738408

Part no. :

Gas Clean Filter Oxygen	CP17970
Gas Clean Filter Moisture	CP17971

Material uses : Analytical chemistry.

Gas Clean Filter Oxygen	1 x 200 ml
Gas Clean Filter Moisture	1 x 200 ml

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

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard 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.

Classification of the substance or mixture

Gas Clean Filter Oxygen

H332	ACUTE TOXICITY (inhalation) - Category 4
H317	SKIN SENSITIZATION - Category 1
H350	CARCINOGENICITY - Category 1
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
H400	AQUATIC HAZARD (ACUTE) - Category 1
H411	AQUATIC HAZARD (LONG-TERM) - Category 2

Gas Clean Filter Moisture

H350	CARCINOGENICITY - Category 1
H372	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms : Gas Clean Filter Oxygen

Gas Clean Filter Moisture

Signal word :

Gas Clean Filter Oxygen	Danger
Gas Clean Filter Moisture	Danger

Section 2. Hazard identification

Hazard statements	:	Gas Clean Filter Oxygen	H317 - May cause an allergic skin reaction. H332 - Harmful if inhaled. H350 - May cause cancer. H373 - May cause damage to organs through prolonged or repeated exposure. (brain) H400 - Very toxic to aquatic life. H411 - Toxic to aquatic life with long lasting effects.
		Gas Clean Filter Moisture	H350 - May cause cancer. H372 - Causes damage to organs through prolonged or repeated exposure. (lungs)
Precautionary statements			
Prevention	:	Gas Clean Filter Oxygen	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P260 - Do not breathe dust.
		Gas Clean Filter Moisture	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P260 - Do not breathe dust. P270 - Do not eat, drink or smoke when using this product.
Response	:	Gas Clean Filter Oxygen	P391 - Collect spillage. P308 + P313 - IF exposed or concerned: Get medical advice or attention. P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P362 + P364 - Take off contaminated clothing and wash it before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
		Gas Clean Filter Moisture	P308 + P313 - IF exposed or concerned: Get medical advice or attention.
Storage	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Not applicable.
Disposal	:	Gas Clean Filter Oxygen	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.
Supplemental label elements	:	Gas Clean Filter Oxygen	None known.
		Gas Clean Filter Moisture	None known.
		Gas Clean Filter Oxygen	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: > 60%
		Gas Clean Filter Moisture	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 100%
Other hazards which do not result in classification	:	Gas Clean Filter Oxygen	None known.
		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.

Substance/mixture : Gas Clean Filter Oxygen — Mixture (encapsulated in article)
Gas Clean Filter Moisture — Mixture (encapsulated in article)

Ingredient name	% (w/w)	CAS number
Gas Clean Filter Oxygen		
Copper oxide, Activated	5 - 10	1317-38-0
Manganese dioxide	5 - 10	1313-13-9
nickel monoxide	0.1 - 1	1313-99-1
Gas Clean Filter Moisture		
crystalline silica, respirable powder	5 - 10	14808-60-7
cristobalite	5 - 10	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.

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact : Gas Clean Filter Oxygen: 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.

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 Oxygen: 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. Get medical attention. If necessary, call a poison center or physician. 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.

Section 4. First-aid measures

Skin contact	:	Gas Clean Filter Oxygen	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. 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. 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. 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.

Most important symptoms/effects, 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	Harmful if inhaled.
		Gas Clean Filter Moisture	No known significant effects or critical hazards.
Skin contact	:	Gas Clean Filter Oxygen	May cause an allergic skin reaction.
		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.

Section 4. First-aid measures

Skin contact	:	Gas Clean Filter Oxygen	Adverse symptoms may include the following: irritation redness
		Gas Clean Filter Moisture	No specific data.
Ingestion	:	Gas Clean Filter Oxygen	No specific data.
		Gas Clean Filter Moisture	No specific data.

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

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.
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.
		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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

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.
Specific hazards arising from the chemical	:	Gas Clean Filter Oxygen	This material is very toxic to aquatic life. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
		Gas Clean Filter Moisture	No specific fire or explosion hazard.
Hazardous thermal decomposition products	:	Gas Clean Filter Oxygen	Decomposition products may include the following materials: metal oxide/oxides
		Gas Clean Filter Moisture	Decomposition products may include the following materials: metal oxide/oxides

Section 5. Fire-fighting measures

Special protective actions 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.
		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.

Section 6. Accidental release measures

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 spilled 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 spilled 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 specialized 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 specialized 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".
Environmental precautions	:	Gas Clean Filter Oxygen	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
		Gas Clean Filter Moisture	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Methods for cleaning up :

Gas Clean Filter Oxygen: 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. 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures :

Gas Clean Filter Oxygen: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. 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. 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.

Gas Clean Filter Moisture: 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.

Advice on general occupational hygiene :

Gas Clean Filter Oxygen: 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.

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

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities :

Gas Clean Filter Oxygen

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Gas Clean Filter Moisture

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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.

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gas Clean Filter Oxygen Manganese dioxide	**CA British Columbia Provincial (Canada, 1/2021).** TWA: 0.02 mg/m³, (as Mn) 8 hours. Form: Respirable TWA: 0.2 mg/m³, (as Mn, Total) 8 hours. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 0.2 mg/m³, (as Mn) 8 hours. Form: Total dust. **CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 0.2 mg/m³, (as Mn) 8 hours. **CA Ontario Provincial (Canada, 6/2019).** TWA: 0.2 mg/m³, (as Mn) 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 0.6 mg/m³, (measured as Mn) 15 minutes. TWA: 0.2 mg/m³, (measured as Mn) 8 hours.
nickel monoxide	**CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 0.6 mg/m³, (measured as Ni) 15 minutes. Form: Inhalable fraction TWA: 0.2 mg/m³, (measured as Ni) 8 hours. Form: Inhalable fraction **CA Ontario Provincial (Canada, 6/2019).** TWA: 0.2 mg/m³, (as Ni) 8 hours. Form:

Section 8. Exposure controls/personal protection

	Inhalable particulate matter. **CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 0.2 mg/m³, (as Ni) 8 hours. **CA British Columbia Provincial (Canada, 1/2021).** TWA: 0.05 mg/m³, (as Ni) 8 hours. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 1 mg/m³, (as Ni) 8 hours.
Gas Clean Filter Moisture	
crystalline silica, respirable powder	**CA British Columbia Provincial (Canada, 1/2021).** TWA: 0.025 mg/m³ 8 hours. Form: Respirable **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 0.1 mg/m³ 8 hours. Form: Respirable dust. **CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 0.025 mg/m³ 8 hours. Form: Respirable particulate **CA Ontario Provincial (Canada, 6/2019).** TWA: 0.1 mg/m³ 8 hours. Form: Respirable particulate matter. **CA Saskatchewan Provincial (Canada, 7/2013).** TWA: 0.05 mg/m³ 8 hours. Form: respirable fraction
cristobalite	**CA British Columbia Provincial (Canada, 1/2021).** TWA: 0.025 mg/m³ 8 hours. Form: Respirable **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 0.05 mg/m³ 8 hours. Form: Respirable dust. **CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 0.025 mg/m³ 8 hours. Form: Respirable particulate **CA Ontario Provincial (Canada, 6/2019).** TWA: 0.05 mg/m³ 8 hours. Form: Respirable particulate matter. **CA Saskatchewan Provincial (Canada, 7/2013).** TWA: 0.05 mg/m³ 8 hours. Form: respirable fraction

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Individual protection measures

Section 8. Exposure controls/personal protection

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

Physical state	:	Gas Clean Filter Oxygen	Solid. [Granular solid.]
		Gas Clean Filter Moisture	Solid. [Granular solid.]
Color	:	Gas Clean Filter Oxygen	Brown. [Dark]
		Gas Clean Filter Moisture	Tan.
Odor	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Odor threshold	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
pH	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Melting point/freezing point	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Boiling point, initial boiling point, and boiling range	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Flash point	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Closed cup: >535°C (>995°F)
Evaporation rate	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.

Section 9. Physical and chemical properties and safety characteristics

Flammability	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Lower and upper explosion limit/flammability limit	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Not applicable.
Vapor pressure	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Relative vapor density	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Not applicable.
Relative density	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Solubility	:	Gas Clean Filter Oxygen	Insoluble in the following materials: cold water and hot water.
		Gas Clean Filter Moisture	Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Not applicable.
Auto-ignition temperature	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Not applicable.
Decomposition temperature	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.
Viscosity	:	Gas Clean Filter Oxygen	Not applicable.
		Gas Clean Filter Moisture	Not applicable.
Particle characteristics			
Median particle size	:	Gas Clean Filter Oxygen	Not available.
		Gas Clean Filter Moisture	Not available.

Section 10. Stability and reactivity

Reactivity	:	Gas Clean Filter Oxygen	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.
Chemical stability	:	Gas Clean Filter Oxygen	The product is stable.
		Gas Clean Filter Moisture	The product is stable.
Possibility of hazardous reactions	:	Gas Clean Filter Oxygen	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.
Conditions to avoid	:	Gas Clean Filter Oxygen	No specific data.
		Gas Clean Filter Moisture	No specific data.
Incompatible materials	:	Gas Clean Filter Oxygen	May react or be incompatible with oxidizing materials.
		Gas Clean Filter Moisture	May react or be incompatible with oxidizing materials.
Hazardous decomposition products	:	Gas Clean Filter Oxygen	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Gas Clean Filter Moisture	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gas Clean Filter Oxygen				
Copper oxide, Activated	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat	470 mg/kg	-
Manganese dioxide	LD50 Oral	Rat	3478 mg/kg	-
nickel monoxide	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5.08 mg/l	4 hours

Irritation/Corrosion

Not available.

Sensitization

Not available.

Conclusion/Summary

Skin : **Gas Clean Filter Oxygen**: May cause sensitization by skin contact.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	IARC	NTP	ACGIH
Gas Clean Filter Oxygen			
Manganese dioxide	-	-	A4
nickel monoxide	1	Known to be a human carcinogen.	A1
Gas Clean Filter Moisture			
crystalline silica, respirable powder	1	Known to be a human carcinogen.	A2
cristobalite	1	Known to be a human carcinogen.	A2

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Gas Clean Filter Oxygen			
Manganese dioxide	Category 2	inhalation	brain
nickel monoxide	Category 1	inhalation	lungs
Gas Clean Filter Moisture			
crystalline silica, respirable powder	Category 1	inhalation	lungs
cristobalite	Category 1	inhalation	lungs

Section 11. Toxicological information

Aspiration hazard

Not available.

Information on the likely routes of exposure	:	Gas Clean Filter Oxygen	Routes of entry anticipated: Oral, Dermal, Inhalation.
		Gas Clean Filter Moisture	Routes of entry anticipated: Oral, Dermal, Inhalation.

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	Harmful if inhaled.
		Gas Clean Filter Moisture	No known significant effects or critical hazards.
Skin contact	:	Gas Clean Filter Oxygen	May cause an allergic skin reaction.
		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.

Symptoms related to the physical, chemical and toxicological characteristics

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	Adverse symptoms may include the following: irritation redness
		Gas Clean Filter Moisture	No specific data.
Ingestion	:	Gas Clean Filter Oxygen	No specific data.
		Gas Clean Filter Moisture	No specific data.

Delayed and immediate effects and also 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 Oxygen	May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
		Gas Clean Filter Moisture	Causes damage to organs through prolonged or repeated exposure.
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.
Reproductive toxicity	:	Gas Clean Filter Oxygen	No known significant effects or critical hazards.
		Gas Clean Filter Moisture	No known significant effects or critical hazards.

Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Gas Clean Filter Oxygen					
Gas Clean Filter Oxygen	4579.9	27472.5	N/A	N/A	1.6
Copper oxide, Activated	470	2500	N/A	N/A	N/A
Manganese dioxide	3478	N/A	N/A	N/A	1.5

Other information : Gas Clean Filter Oxygen — Adverse symptoms may include the following: May cause skin sensitization.

Gas Clean Filter Moisture — Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Gas Clean Filter Oxygen			
Copper oxide, Activated	Acute LC50 2.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 >56000 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
Manganese dioxide	Acute EC50 >100 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 >100 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute NOEC >100 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 10 mg/l Fresh water	Daphnia - Ceriodaphnia dubia	8 days

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Gas Clean Filter Oxygen			
nickel monoxide	-	5613	high

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

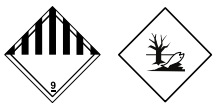
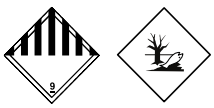
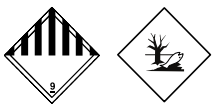
Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

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

	TDG Classification	IMDG	IATA
UN number	UN3077	UN3077	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide, Activated)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide, Activated)	Environmentally hazardous substance, solid, n.o.s. (Copper oxide, Activated)
Transport hazard class(es)	9 	9 	9 
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes.

Proof of classification statement : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).

Additional information

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
Explosive Limit and Limited Quantity Index 5
Special provisions 16, 99

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 966, 967, 969

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 400 kg. Packaging instructions: 956. Cargo Aircraft Only: 400 kg. Packaging instructions: 956. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y956.
Special provisions A97, A158, A179, A197, A215

Section 14. Transport information

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.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: copper (and its compounds); manganese (and its compounds)

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : All components are listed or exempted.

Canada : Not determined.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (CSCL)**: All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : All components are listed or exempted.

Thailand : All components are listed or exempted.

Turkey : Not determined.

United States : All components are active or exempted.

Viet Nam : Not determined.

Section 16. Other information

History

Date of issue/Date of revision : 11/09/2021

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HPR = Hazardous Products Regulations
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Gas Clean Filter Oxygen	
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method
Gas Clean Filter Moisture	
CARCINOGENICITY - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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