SAFETY DATA SHEET

MSDS EU Template Version: 2.1 Date: August 1, 2022
Document Rev 2.1.0

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878, and United States Regulation 29 CFR 1910

1 SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Sulphasorb2
Product Code	S2

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

Identified Use(s)	Gas-phase air filtration
Uses Advised Against	Do not use for applications other than those specified.

1.3 Details of the supplier of the safety data sheet

Company Identification	Pure Air Filtration, LLC 6050 Peachtree Parkway Suite 240-187 Atlanta, GA 30092 USA PureAir Filtration BV Tijnmuiden 79 1046 AK Amsterdam The Netherlands
Telephone	+1 (678) 935-1431 ; Office Hours are Monday through Friday, 8:00AM to 5:00PM Eastern Standard Time
Fax	+1 (678) 935-0648
E-mail (competent person)	ajameson@pureairfiltration.com

1.4 Emergency telephone number

Emergency Phone No.	CHEMTREC (international): +1 703-741-5970 (24 hour line) The line is available 24 hours; in the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department.
Language(s) spoken:	English

2 SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS-US and Regulation (EC) No. 1272/2008 (CLP) and most important hazards

Eye Irrit. 2; h319+H320
Skin Irrit. 2 h315
Resp Irrit H335
Mixture itself in solid form causes little irritation, but if crushed or handled extensively, dust may evolve which can cause irritation to eyes and respiratory tract. Adding water can cause irritation to skin.
If in a confined space, use appropriate safety precautions, as activated carbon can remove oxygen and cause hazard for workers in small space. Before entering space, check state and national guidelines for work in confined area.

2.2 Label elements

	According to Regulation (EC) No. 1272/2008 (CLP)
Product Name	Sulphasorb2
Contains:	Aluminum oxide, water, carbon, potassium hydroxide

Hazard Pictogram(s)

Signal Word(s)	Warning
Hazard Statement(s)	Eye Irrit. 2; H319+H320 Skin Irrit. 2; H315 Acute Tox 4; H302 Resp Irrit; H335 Acute Tox. 3 (Oral); H301 Skin and Eye Dam. 1A; H314 + 318
Precautionary Statement(s)	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep away from clothing and other combustible materials. P235 + P410 - Keep cool. Protect from sunlight P260 - Do not breathe dust P264 - Wash face, hands and any exposed skin thoroughly after handling P273: Avoid release to the environment. P280: Wear protective gloves and eye/face protection. P303+P361+P353: IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a doctor. P362: Take off contaminated clothing and wash before reuse
Supplemental information	Not applicable.

2.3 Other hazards — The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

*NOTE: The Hazard Classification listed in this section refers to the chemical at a pure concentration. It has been determined that the remaining ingredient(s) of this component/product are NOT CLASSIFIED AS HAZARDOUS CHEMICALS due to their physical and/or chemical nature and/or concentration in solution, in accordance with California and Federal OSHA regulations (Federal Register 29CFR 1910.1200), and The Chemicals (Hazard Information and Packaging for Supply) Regulations (European Community).

3 SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Aluminum oxide	35-40%	1344-28-1	215-691-6	01-2119529248-35-XXXX	Eye Irrit. 2; H319+H320 Skin Irrit. 2; H315 Acute Tox 4; H302 Resp Irrit; H335
Carbon	35-40%	7440-44-0	231-153-3	01-2119488894-16-XXXX	Eye Irrit. 2; H319+H320 Skin Irrit. 2; H315
Potassium Hydroxide	5-7%	1310-58-3	215-181-3	01-2119487136-33-XXXX	Acute Tox. 3 (Oral); H301 Skin and Eye Dam. 1A; H314 + 318

4 SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Self-protection of the first aider	Use personal protective equipment as required. Wear suitable protective clothing and gloves. Avoid contact with skin, eyes or clothing. Do not breathe dust. Do not ingest. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. If swallowed then seek immediate medical assistance.
Inhalation	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER/doctor.
Skin Contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Gently wash with plenty of soap and water. Call a POISON CENTER/doctor.
Eye Contact	IF IN EYES: Flush eyes with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. After rinsing affected eyes must be seen by an ophthalmologist Call a POISON CENTER/doctor.
Ingestion	IF SWALLOWED: Do NOT induce vomiting. Do not give anything by mouth to an unconscious person. Immediately call a POISON CENTER/doctor.

4.2 Most important symptoms and effects, both acute and delayed: Can cause skin and eye irritation. Treat symptomatically.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to a physician: IF IN EYES: Obtain prompt consultation, preferably from an ophthalmologist.

*Note: For full text of H phrases see section 16

5 SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media	As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or water spray. Alcohol resistant foams (ATC type) are preferred.
Unsuitable extinguishing media	Do not use water jet. Direct water jet may spread the fire.

5.2 Special hazards arising from the substance or mixture: May form explosive dust/air mixtures. May decompose if heated. Not flammable but will support combustion.

	Oxidizing	May intensify fire; some substances alone are oxidizers, while the mixture itself is not classified as an oxidizer. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. In case of fire use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide.
	Advice for fire-fighters	Fight fire with normal precautions from a reasonable distance. Fire fighters should Wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Do not allow run-off from firefighting to enter drains or water courses. All contaminated wastewater must be processed in an industrial or municipal wastewater treatment plant.

6 SECTION 6: ACCIDENTAL RELEASE

6.1	Personal precautions, protective equipment and emergency procedures	Ensure operatives are trained to minimize exposures. Ensure suitable personal protection during removal of spillages. Use personal protective equipment as required. See Section: 8. Wear suitable protective clothing, gloves and eye/face protection. Avoid all contact. Avoid dust formation. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. In case of leakage, eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	Small spillages:	Clean up spill with measures mentioned above. No extra measures necessary.
	Oxidizing	May intensify fire; some ingredients are oxidizers, even though mixture as a whole is not considered oxidizer. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. In case of fire use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide.
6.2	Environmental precautions	Collect spillage. Inform authorities if spill cannot be contained.
6.3	Methods and material for containment and cleaning up	Do not mix with combustible material. Provided it is safe to do so, isolate the source of the leak. Dry sweeping is not recommended. If necessary, light water spray will reduce dust for dry sweeping, but over-wetting may produce very slippery walking surfaces. Transfer to a container for disposal. Use vacuum equipment for collecting spilt materials, where practicable. Dispose of this material and its container as hazardous waste.
	Small spillages:	Sweep up spilled substance and remove to safe place. Avoid dust generation. Damp down to avoid dust generation.
6.4	Reference to other sections	See Also Section: 8, 13

7 SECTION 7: HANDLING AND STORAGE

7.1	Precautions for safe handling	Ensure operatives are trained to minimize exposures. Use personal protective equipment as required. See Section: 8. Wear suitable protective clothing, gloves and eye/face protection. Avoid all contact. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
	Oxidizing	Do not store near combustible materials. Do not mix with combustible material. May intensify fire; some ingredients are oxidizers, even though mixture as a whole is not considered oxidizer. Take precautionary measures against static discharge.
7.2	Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Control dust formation.
	Storage temperature	Keep only in the original container/package in a cool well-ventilated place. Should be stored inside, away from rainwater, etc.
	Incompatible materials	Protect from moisture. Keep away from strong oxidizing substances.
7.3	Specific end use(s)	See Section: 1.2

8 SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	Control parameters	
8.1.1	Related to Substance- Aluminum Oxide	OSHA PEL (TWA) (15 mg/m3 total dust; 5 mg/m3 respirable fraction)
8.1.2	Related to Substance- Potassium Hydroxide	ACGIH Ceiling (2mg/m3)
8.1.3	Occupational Exposure Limits	Ireland HSA recommends the following limits for aluminum oxide dusts: 10 mg/m³ (8hr TWA) total inhalable dust; 4 mg/m³ (8hr TWA) total respirable dust

Dust, or Particulates, Substance Not Otherwise Specified:

Austria MAK: 10 mg/m³, STEL 2x30 min, Inhalable dust 5 mg/m³, TWA, Inhalable dust
Belgium: 10 mg/m³, TWA, Inhalable 3 mg/m³ TWA, Respirable
Canada (Saskatchewan): 10 mg/m³, TWA, Inhalable 3 mg/m³ TWA, Respirable
China: 8 mg/m³, TWA 10 mg/m³, STEL
France: 10 mg/m³, TWA Inhalable dust 5 mg/m³, TWA Respirable dust
Germany - TRGS 900: 10 mg/m³, TWA, Inhalable 3 mg/m³, Respirable fraction Hong Kong: 10 mg/m³, TWA
Ireland: 10 mg/m³, TWA, Total inhalable 4 mg/m³, TWA, Respirable Italy: 10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
Japan: 3 mg/m³ TWA, Respirable Product code: CI4 Product name: NORITÒ CI4 Revision date: 29-Jul-2016
Malaysia: 10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable
The Netherlands: 3.5 mg/m³, Inhalable
Spain: 10 mg/m³, VLA, Inhalable 3 mg/m³, VLA, Respirable
Sweden: 10 mg/m³, NGV, Total inhalable 5 mg/m³, NGV, Respirable
United Kingdom - WEL: 10 mg/m³, TWA, Total Inhalable dust 4 mg/m³, TWA, Respirable dust US ACGIH - PNOS: 10 mg/m³, TWA, Inhalable 3 mg/m³, TWA, Respirable US OSHA - PEL: 15 mg/m³, TWA, Total dust 5 mg/m³, TWA, Respirable

8.1.0	Biological limit value	None Known
8.1.1	PNECs and DNELs	Not applicable.
8.2	Exposure controls	
8.2.1	Appropriate engineering controls	Ensure operatives are trained to minimize exposures. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Good hygiene practices and housekeeping measures. A washing facility/water for eye and skin cleaning purposes should be present. Preferably use engineering controls to keep exposures below the OEL or DNEL.

8.2.2 Individual protection measures, such as personal protective equipment (PPE)

Use personal protective equipment as required. Wear suitable protective clothing, gloves, and eye/face protection. Keep good industrial hygiene. Do not breathe dust. Avoid all contact. Wash hands before breaks and after work. Keep work clothes separately. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke at the workplace.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/ face protection 	Use eye protection according to EN 166, designed to protect against dusts. Small Quantities: Not normally required
Skin protection 	Hand protection: Wear gloves to EN374 to protect against skin effects from powders. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Skin protection: Wear suitable coveralls to prevent exposure to the skin.
Respiratory protection 	Respiratory protective device with a particles filter or Dust Mask: NIOSH N95
8.2.3 Environmental Exposure Controls	Prevent release to the environment.

9 SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid cylindrical and spherical pellets

Color	Back and gray
Odor	No odor
Melting point/freezing point	Not applicable. Boiling point or initial boiling point and boiling range Not applicable. Flammability Not flammable
Lower and upper explosion limit	Not explosive
Flash point	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not applicable.
pH	8-10.5.
Kinematic viscosity	Not applicable.
Solubility	Partly soluble in water.
Partition coefficient: n-octanol/water (log value)	Not applicable.
Vapor pressure	1 @ 3586C (6487F)
Density and/or relative density	~ 40 lbs/ft3 , 640 kg/m3
Relative vapor density	Not applicable.
Particle characteristics	Median Particle Diameter 4mm

9.2 Other information

Oxidizing properties — The final product is considered to have no oxidizing properties and it should be classified as "not oxidizing" and "Not Division 5.1" following UN Handbook. A test according to UN Handbook 34.4.1 and GHS was performed and confirms this statement.

10 SECTION 10: STABILITY AND REACTIVITY

10.1	Reactivity	Stable under normal conditions
10.2	Chemical stability	Stable under normal conditions
10.3	Possibility of hazardous reactions	May occur with strong acids or oxidizing agents
10.4	Conditions to avoid	Protect from moisture and damage.
10.5	Incompatible materials	Strong acids. Strong reducing and oxidizing agents.
10.6	Hazardous decomposition product(s)	Hazardous combustion products: Potassium Oxide, Manganese, oxides of manganese

11 SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - Ingestion	Mixture: Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: LD50 > 2000 mg/kg bw/day
Acute toxicity - Inhalation	Mixture: Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: LC50 > 20 ml/l
Acute toxicity - Skin Contact	Mixture: Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: LD50 > 2000 mg/kg bw/day
Skin corrosion/irritation	Mixture: Skin Irr 2
Serious eye damage/irritation	Mixture: Eye. Dam. 1; H318: Causes serious eye damage.
Respiratory or skin sensitization	Mixture: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Mixture: Based on available data, the classification criteria are not met.
Carcinogenicity	Mixture: Based on available data, the classification criteria are not met.
Reproductive toxicity	Mixture: Based on available data, the classification criteria are not met.
STOT - single exposure	Mixture: Based on available data, the classification criteria are not met.
STOT - repeated exposure	Mixture: Based on available data, the classification criteria are not met.
Aspiration hazard	Mixture: Not relevant – solid mixture

11.2 Information on other hazards

11.2.1	Endocrine disrupting properties	No substances identified as having endocrine-disrupting properties.
11.2.2	Other information	No data available

12 SECTION 12: ECOLOGICAL INFORMATION

12.1	Toxicity	No data, but mixture is only partially (very small percentage) soluble in water No experimental data available.
12.2	Persistence and degradability	No data for the mixture as a whole.
12.3	Bioaccumulative potential	No data for the mixture as a whole.

12.4	Mobility in soil	No data for the mixture as a whole.
12.5	Results of PBT and vPvB assessment	The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
12.6	Endocrine disrupting properties	No substances identified as having endocrine-disrupting properties.
12.7	Other adverse effects	None Known

13 SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods — Dispose of wastes in an approved waste disposal facility, in accordance with local laws

*Note that this is for the unused product. Used product is a nonhazardous salt. See MSDS for used product.

14 SECTION 14: TRANSPORT INFORMATION

		ADR/RID	IMDG	IATA/ICAO	US DOT 49 CFR 172.101
14.1	UN number or ID number	Not Applicable	Not Applicable	Not Applicable	Not Applicable
14.2	UN proper shipping name				
14.3	Transport hazard class(es)				
14.4	Packing group				
14.5	Environmental hazards				
14.6	Special precautions for user				
14.7	Maritime transport in bulk according to IMO \instruments				
14.8	Additional Information				

15 SECTION 15: REGULATORY INFORMATION

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

15.1.1 EU regulations

Authorizations and/or Restrictions On Use	Not restricted for the intended use(s) of the product.
CoRAP Substance Evaluation	Substance identified for evaluation in 2017 evaluating Member State has concluded that no additional information is required
Listed on EEC Inventory EINECS	

15.1.2 National regulations

Germany	Possible Water Hazard, unclassified
United States	National Inventory TSCA- All components are listed under the TSCA 8 b inventory as active or exempted. No components are listed under TSCA 12 b RA Section 304 CERCLA Potassium Permanganate reportable quantity 100 lbs (45.4 kg) RA Section 311/312 Hazards
USA State Regulations	Air Act Section 112b; Cal. Proposition 65- no known cancer-causing ingredients

15.2 Chemical Safety Assessment — A chemical safety assessment is not required under REACH.

16 SECTION 16: OTHER INFORMATION

Full list of H Statements:

Eye Irrit. 2; H319+H320
Skin Irrit. 2; H315
Acute Tox 4; H302
Resp Irrit; H335
Acute Tox. 3 (Oral); H301
Skin and Eye Dam. 1A; H314 + 318

The following sections contain revisions or new statements: Updated substance / mixture classification. Updated version and date. New SDS Regulation 2020/878 format, all sections have been updated to include new information. Please review SDS with care.

References: Existing Safety Data Sheet (SDS) Substance with harmonized classification and labelling according to Regulation (EC) No. 1272/2008, Annex VI. Existing ECHA registration for Potassium permanganate (CAS No. 7722-64-7)

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878

LEGEND

ADR	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CoRAP	Community Rolling Action Plan (CoRAP)
DNEL	Derived no effect level
EC50	Half maximal effective concentration
IATA	IATA: International Air Transport Association
ICAO	ICAO: International Civil Aviation Organization
IMDG	IMDG: International Maritime Dangerous Goods
LC50	Lethal concentration at which 50% of the population is killed
LD50	Lethal dose at which 50% of the population is killed
LTEL	Long term exposure limit
OEL	Occupational exposure limits
PBT	PBT: Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
RID	RID: Regulations concerning the international railway transport of dangerous goods STEL Short term exposure limit
vPvB	vPvB: very Persistent and very Bioaccumulatve

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Pure Air Filtration gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Pure Air Filtration accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.