

Material Safety Data Sheet

ChlorAscorb

1. Identification of the Product and the Company

Product Name: ChlorAscorb
Chemical Name: L-Ascorbic acid
Synonyms: Vitamin C, Ascorbic acid
CAS#: 50-81-7
Material Uses: ChlorAscorb is used to neutralize Free Chlorine in drinking water.
Supplier: Clearflow Enviro Systems Group Inc.
214 Sioux Road
Sherwood Park, AB T8A 3X5
Ph. 780-410-1403
Fx. 780-410-1406
www.clearflowgroup.com
**In Case of
Emergency:** 780-410-1403
Product Type: Solid

2. Composition / Information on Ingredients

Composition:

Name	CAS#	% by weight
Ascorbic Acid	50-81-7	100

Toxicological data on ingredients: Ascorbic Acid: ORAL (LD50): Acute: 11900 mg/kg [Rat]. 3367 mg/kg [Mouse].

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.

3. Hazard Identification

Potential Acute Health Effects:

Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

Carcinogenic Effects: Not available.

Mutagenic Effects: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

Teratogenic Effects: Not available.

Developmental Toxicity: Not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

4. First Aid Measures

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as collar, tie, belt, or waistband. Get medical attention if symptoms appear.

5. Fire-Fighting Measures

Flammability of the Product: May be combustible at high temperature.

Auto-ignition Temperature: 660°C (1220°F)

Flash Point: Not available.

Flash Point Method: Not applicable.

Flammable Limits in Air (%): Not available.

Products of Combustion: Carbon Oxides (CO, CO₂)

Fire Hazards in Presence of Various Substances:

Slightly flammable to flammable in presence of open flames and sparks, or in presence of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:

Slightly explosive in presence of open flames or sparks.

Special Remarks on fire hazards:

As with most powdered organic solids, fire is possible at elevated temperatures or by contact with and ignition source.

Special Remarks on Explosion Hazards:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion.

Extinguishing Media

Small Fire: Dry chemical powder.

Large fire: Use water spray, fog, or foam. Do not use water jet.

NFPA Ratings for this product are: HEALTH 1 FLAMMABILITY 1 INSTABILITY 0

HMS Ratings for this product are: HEALTH 1 FLAMMABILITY 1 REACTIVITY 0 PERSONAL PROTECTION E

6. Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a conventional waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

7. Handling and Storage

Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing the material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or label. Keep away from incompatibles such as oxidizing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Air sensitive, sensitive to light, store in Light resistant containers.

8. Exposure Controls / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use and approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

9. Physical and Chemical Properties

Physical State and Appearance: Solid (powdered crystals)

Color: White or colorless

Odor: Odorless

Taste: Acidic, Sharp, Pleasant

Molecular Weight: 176.13 g/mol

pH: 2.1-2.6

Specific Gravity: 1.65

Critical Temperature: 783°C

Melting/Freezing Point: about 190°C

Water/Oil Dist. Coeff.: more soluble in water; $\log(\text{oil/water}) = -2.1$

Solubility:

Soluble in hot water, partially soluble in cold water. Insoluble in diethyl ether. Solubility in water: 1g/3mL water. Solubility in water: 80% @ 100°C and 45% @ 45°C. Solubility in alcohol: 1g/30mL alcohol. Solubility in absolute alcohol: 1g/50mL absolute alcohol. Solubility in glycerol: 1g/100mL glycerol. Solubility in propylene glycol: 1g/20mL propylene glycol. Insoluble in chloroform, benzene, petroleum ether, oils, fats, fat solvents.

10. Stability and Reactivity

Chemical Stability: The product is stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Heat, ignition sources, light, air, incompatible materials, dust generation.

Materials to Avoid: Oxidizing agents.

Special Remarks on Reactivity: Air and light sensitive. Aqueous solutions are rapidly oxidized by air, accelerated by alkalies, iron, and copper.

Additional Information: No additional information.

11. Toxicological Information

Principle Routes of Exposure: Inhalation. Ingestion.

Acute Toxicity

Acute Oral LD50: 11,900 mg/kg [Rat]. 3,367 mg/kg [Mouse].

Chronic Effects:

Mutagenic Effects: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

Other Toxic Effects on Humans:

Slightly hazardous in case of skin contact (irritant), ingestion, or inhalation.

Special Remarks on Chronic Effects:

May affect genetic material (mutagenic). May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. Human: passes through the placenta, excreted in maternal milk.

Special Remarks on Other Toxic Effects:

Acute Potential Health Effects:

Skin: May cause skin irritation. Low hazard for normal industrial handling.

Eyes: May cause eye irritation.

Inhalation: May cause respiratory tract irritation. Low hazard for normal industrial handling.

Ingestion: Ingestion of small amounts during normal industrial handling is a low hazard. Ingestion of large amounts may cause gastrointestinal tract irritation, hypermotility, diarrhea, acidification of the urine which may cause stones in the urinary tract and may cause renal failure coordination, somnolence), eyes(lacrimation), blood (anemia).

Chronic Potential Health Effects:

Ingestion: Prolonged or repeated ingestion may affect the blood/bone marrow and metabolism.

12. Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: As with all organic molecules the product will likely increase BOD and COD.

Bioaccumulation: The product is not expected to bioaccumulate.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely.

Toxicity of the Products of Biodegradation:

The product itself and its products of degradation are not toxic.

13. Disposal Considerations

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. Transport Information

Regulatory Information	UN Number	Proper Shipping Name	Hazard Class	PG*	Label	Additional Information
DOT (U.S.)	-	-	-	-	-	not a regulated product
TDG (Canada)	-	-	-	-	-	not a regulated product

PG* : Packaging Group

15. Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Ascorbic acid

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC): This product is not classified according to the EU regulations. S24/25- Avoid contact with skin and eyes.

HMIS (U.S.A.):

Health Hazard: 1
Fire Hazard: 1
Reactivity: 0
Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1
Flammability: 1
Reactivity: 0
Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

16. Other Information

Additional Information: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Prepared By: Clearflow Enviro Systems Group, Inc.

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*****END OF MSDS*****