

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 1 of 9

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Ascorbic Acid Powder**

Product Code(s) : R-0690

Recommended use of the chemical and restrictions on use

: Use as directed by manufacturer for purposes directly related to water testing.
 Recommended restrictions: None known.

Chemical family : Mixture

Name, address, and telephone number of the supplier:

Name, address, and telephone number of the manufacturer:

Lowry & Associates, Div. of Chem-Aquascience, Inc.

Refer to supplier

5-1151 Gorham Street
 Newmarket, ON, Canada
 L3Y 8Y1

Supplier's Telephone # : (905) 836-0505, Hours 09:00 to 16:30

24 Hr. Emergency Tel # : Canutec: 613-966-6666

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

White powder . . . Odorless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not required

Hazard statement(s)

Not required

Precautionary statement(s)

Not required

Other hazards

Other hazards which do not result in classification: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be mildly irritating to skin, eyes and respiratory system.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
L-Ascorbic acid	Ascorbic acid	50-81-7	30.0 - 70.0

The components are not hazardous or are below required disclosure limits.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 2 of 9

SAFETY DATA SHEET

- Ingestion* : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. Call a physician.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Obtain medical attention if symptoms develop and persist.
- Skin contact* : Wash off immediately with plenty of water. Remove and wash contaminated clothing before re-use. If irritation or symptoms develop, seek medical attention.
- Eye contact* : Flush eyes with water for at least 20 minutes. If irritation persists, seek prompt medical attention.

Most important symptoms and effects, both acute and delayed

- : Direct skin contact may cause slight or mild, transient irritation. Symptoms may include redness, edema, drying defatting and cracking of the skin. Direct eye contact may cause slight or mild, transient irritation. Symptoms may include stinging and tearing. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Burning may produce irritating, toxic and obnoxious fumes.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Carbon oxides

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Wear suitable protective equipment. Refer to protective measures listed in sections 7 and 8. Restrict access to area until completion of clean-up.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Methods and material for containment and cleaning up

- : Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Use only non-sparking tools and equipment in the clean-up process. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid creating dust.

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 3 of 9

SAFETY DATA SHEET

Special spill response procedures

- : Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.
- US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use only in well-ventilated areas. Wear protective equipment during handling. Avoid breathing dust and fume. Avoid contact with eyes, skin and clothing. Do not ingest. Keep away from extreme heat and flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Avoid dust formation.

- Conditions for safe storage** : Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

- Incompatible materials** : Iron ;Alkalies.;Copper

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
L-Ascorbic acid	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

- Respiratory protection** : If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

- Skin protection** : Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.

- Eye / face protection** : Chemical goggles must be worn to prevent dusts from entering the eyes.

- Other protective equipment** : Wear sufficient clothing to prevent skin contact. Depending on conditions of use, an impervious apron should be worn. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

- : Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : White powder
- Odour** : Odorless
- Odour threshold** : N/Av

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 4 of 9

SAFETY DATA SHEET

pH : Not available.
Melting/Freezing point : Not available.
Initial boiling point and boiling range : Not available.
Flash point : Not Applicable (Does not burn)
Flashpoint (Method) : N/Ap
Evaporation rate (BuAe = 1) : Not available.
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.) : N/Ap
Upper flammable limit (% by vol.) : N/Ap
Oxidizing properties : Not applicable
Explosive properties : Not applicable.
Vapour pressure : Not available.
Vapour density : Not available.
Relative density / Specific gravity : Not available.
Solubility in water : Soluble
Other solubility(ies) : Not available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : N/Av
Auto-ignition temperature : Not applicable.
Decomposition temperature : Not available.
Viscosity : Not available.
Volatiles (% by weight) : Not available.
Volatile organic Compounds (VOC's) : N/Av
Absolute pressure of container : N/Ap
Flame projection length : N/Ap
Other physical/chemical comments : None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : This product is not reactive. Aqueous solutions containing ascorbic acid are rapidly oxidized by air, accelerated by alkalies, iron and copper.
Chemical stability : Material is stable under normal conditions.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Avoid prolonged exposure to air. Avoid moisture.
Incompatible materials : Iron ;Alkalies.;Copper
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 5 of 9

SAFETY DATA SHEET

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
 : YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause slight or mild, transient irritation.

Sign and symptoms eyes

: Direct eye contact may cause slight or mild, transient irritation.

Potential Chronic Health Effects

: Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Medical conditions aggravated by overexposure

: None known.

Synergistic materials

: Not available.

Toxicological data

: See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
L-Ascorbic acid	N/Av	11900 mg/kg	N/Av

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not classified for hazards to the environment. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 6 of 9

SAFETY DATA SHEET

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
L-Ascorbic acid	50-81-7	1020mg/L (Rainbow trout)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
L-Ascorbic acid	50-81-7	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
L-Ascorbic acid	50-81-7	N/Av	N/Av	None.

Persistence and degradability

: Not available.

Bioaccumulation potential

: Not available.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
L-Ascorbic acid (CAS 50-81-7)	N/Av	N/Av

Mobility in soil

: High water solubility indicates a high mobility in soil.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 7 of 9

SAFETY DATA SHEET

49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	Not regulated	none	
TDG Additional information	None.				

Special precautions for user : None known or reported by the manufacturer.

Environmental hazards : See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This substance/mixture is not intended to be transported in bulk.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
L-Ascorbic acid	50-81-7	Yes	N/Ap	N/Av	No	NS

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
L-Ascorbic acid	50-81-7	No	N/Ap	No	No	No	No	No	No

Canadian Information:

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 8 of 9

SAFETY DATA SHEET

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECs</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
L-Ascorbic acid	50-81-7	200-066-2	Present	Present	(5)-62	KE-01947	Present	HSR003645

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CSA: Canadian Standards Association
 DOT: Department of Transportation
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 Inh: Inhalation
 LC: Lethal Concentration
 LD: Lethal Dose
 MN: Minnesota
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NTP: National Toxicology Program
 OECD: Organisation for Economic Co-operation and Development
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

: Material Safety Data Sheet from manufacturer
 OECD- The Global Portal to Information on Chemical Substances - eChemPortal, 2015
 Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2015 (Chempendium, RTECs, HSDB, INCHEM).
 European Chemicals Agency, Classification Legislation, 2015

Preparation Date (mm/dd/yyyy)

: 01/17/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.



Ascorbic Acid Powder

R-0690

SDS Preparation Date (mm/dd/yyyy): 01/17/2016

Page 9 of 9

SAFETY DATA SHEET

<p>Prepared for: Lowry & Associates, Div. of Chem-Aquascience, Inc. 5-1151 Gorham Street Newmarket, ON L3Y 8Y1 www.lowryassociates.ca</p>	 <p>LOWRY & ASSOCIATES Div. of Chem-Aquascience, Inc.</p>
<p>Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 <p>icc ComplianceCenter</p>

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc using information provided by / obtained from Lowry & Associates, Div. of Chem-Aquascience, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Lowry & Associates, Div. of Chem-Aquascience, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc and Lowry & Associates, Div. of Chem-Aquascience, Inc.

END OF DOCUMENT