

Material Safety Data Sheet

Page: 1 of 6

Infosafe No. 1CH3I Issue Date : March 2007 RE-ISSUED by CHEMSUPP

Product Name : ASCORBIC ACID

Not classified as hazardous according to criteria of NOHSC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name ASCORBIC ACID
Product Use Nutrition, colour fixing, flavouring and preservative in meats and other foods, oxidant in bread doughs, abscission of citrus fruit in harvesting, reducing agent in analytical chemistry and laboratory reagent.

Company Name CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

Address 50 Bedford Street GILLMAN
SA 5013 Australia

Telephone Number/Fax
Tel: (08) 8440-2000
Fax: (08) 8440-2001

Other Names	Name	Product Code
	L-Ascorbic acid	
	ASCORBIC ACID AR	AA022
	ASCORBIC ACID LR	AL022
	ASCORBIC ACID BP	AP022
	Vitamin C	

Other Information EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Solid

Characterization

Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	L-Ascorbic acid.	50-81-7	100 %		

3. HAZARDS IDENTIFICATION

Irritancy of Product Causes mild eye, skin and respiratory tract irritation. Ingestion of large amounts may cause gastrointestinal irritation.

Teratogenicity L-Ascorbic acid is listed as a known or suspected teratogen. - Dangerous Properties of Industrial Materials, 7th Ed., by N. Irving Sax and Richard J. Lewis.
Vitamin C supplementation may cause haemolytic anaemia in premature neonates and scurvy when born.

Medical Conditions Generally Aggravated by Exposure Persons with pre-existing skin, eye, respiratory, kidney or blood disorders (haemochromatosis, thalassaemia, or sideroblastic anaemia) may be more susceptible.

Carcinogenicity Not listed in the IARC Monographs.

Chronic Effects Chronic ingestion of ascorbic acid can change the pH of the saliva so that calcium is lost from tooth enamel leading to dental enamel erosion. Prolonged or repeated ingestion may affect the blood/bone marrow and metabolism. Chronic ingestion of large doses may cause gastrointestinal disturbances including nausea and diarrhoea, urinary effects involving urine acidification, oxalate and uric crystallization in the bladder and kidney, and decreased reaction

Material Safety Data Sheet

Page: 2 of 6

Infosafe No.	1CH3I	Issue Date : March 2007	RE-ISSUED by CHEMSUPP
--------------	-------	-------------------------	-----------------------

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	times and psychomotor coordination.
Inhalation	Irritates the respiratory tract. May cause coughing and a sore throat.
Ingestion	Ingestion of small amounts during normal industrial handling is a low hazard. Ingestion of large amounts may cause gastrointestinal irritation, gastrointestinal disturbances (nausea, vomiting and diarrhoea), hypermotility, acidification of the urine which may cause precipitation of cystine and oxalate stones in the urinary tract and may cause renal failure coordination, somnolence, eyes (lacrimation), blood (anaemia), a disruption of psychological functioning resulting in decreased reaction times and psychomotor coordination. Increases iron absorption and, thus, large doses may be dangerous in persons with haemochromatosis, thalassaemia, or sideroblastic anaemia. Persons with erythrocyte/G6PD deficiency may develop mild haemolysis. High doses taken during pregnancy may cause scurvy in infants when born.
Skin	May cause mild to moderate irritation and redness. When in solution forms a strong acid which may be irritating to skin.
Eye	May cause mild to moderate irritation, redness and pain. When in solution forms a strong acid which may be irritating to eyes.

4. FIRST AID MEASURES

Inhalation	Remove victim to fresh air. Seek medical advice if effects persist.
Ingestion	Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Seek medical attention in severe cases, or if large amounts ingested.
Skin	Wash with plenty of soap and water. If irritation occurs seek medical advice.
Eye	Irrigate with copious quantity of water for 15 minutes. Seek medical assistance if symptoms persist.
First Aid Facilities	Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor	Treat symptomatically. Adverse effects on colour vision. Ascorbic acid should be given with care to patients with hyperoxaluria.
Other Information	For advice, contact a Doctor or Poisons Information Centre. Phone 13 1126 from anywhere in Australia, or a doctor.

5. FIRE FIGHTING MEASURES

Specific Methods	Small fire: Use dry chemical, CO ₂ , water spray or foam. Large fire: Use water spray, fog or foam. If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out.
Specific Hazards	May burn but do not ignite readily. Runoff may pollute waterways. Fire may produce irritating, poisonous and/or corrosive fumes. Containers may explode when heated.
Hazardous Combustion Products	Acrid smoke and irritating fumes, carbon monoxide and carbon dioxide.
Sensitivity to Static Discharge	Slightly flammable to flammable in presence of open flames and sparks, of heat. Slightly explosive in presence of open flames and sparks.
Decomposition Temp.	ca. 183 °C; 190 - 192 °C.
Precautions in connection with Fire	Wear SCBA and structural firefighter's uniform.
Flash Point	99 °C
Ignition Temperature	640 °C
Flammable Limits UEL	20% by Volume (g.cu. ft.)
Flammable Limits LEL	10% by Volume (g.cu. ft.)
Flammability	Combustible.
Explosion Data	May form an explosive organic dust cloud with air.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal	Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 15m. Do NOT touch or walk through this product. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Prevent dust cloud.
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Material Safety Data Sheet

Page: 3 of 6

Infosafe No.	1CH3I	Issue Date : March 2007	RE-ISSUED by CHEMSUPP
--------------	-------	-------------------------	-----------------------

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Use clean non-sparking tools to collect material and place it into loosely-covered plastic containers for later disposal.
SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

7. HANDLING AND STORAGE

Corrosiveness	Attacks aluminium, copper, copper alloys, iron and zinc.
Handling	Avoid ingestion and inhalation of vapours, or dusts. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep container tightly closed. Use with adequate ventilation. If ingested, seek medical advice immediately and show the container or the label. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Light sensitive. Protect against physical damage and light. Keep away from heat and all sources of ignition. Ground all equipment containing material. Keep away from incompatibles such as oxidizing agents and strong bases. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Storage	Store in tightly closed containers, in a cool, dry, dry, well-ventilated area away from incompatible substances. Separated from strong oxidants, strong bases. Solutions of ascorbic acid are rapidly oxidized in air and in alkaline media; the drug should be protected from air and light. Store in light-resistant containers. Store away from direct sunlight. Store protected from moisture. Store under an inert atmosphere. Protect against physical damage. Isolate from any source of heat or ignition. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).
Unsuitable Materials	Aluminium, copper, copper alloys, iron and zinc.
Oxidising Properties	The substance is a strong reducing agent and reacts with oxidants.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Other Exposure Information	A time weighted average (TWA) concentration for an 8 hour day, and 5 day week has not been established by NOHSC Australia for this product. There is a blanket limit of 10 mg/m ³ for dusts when limits have not otherwise been established.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Plastic or rubber gloves.
Body Protection	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Eng. Controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White to a very pale yellow crystalline solid, or colourless crystals.
Odour	Odourless.

Material Safety Data Sheet

Page: 4 of 6

Infosafe No.	1CH3I	Issue Date : March 2007	RE-ISSUED by CHEMSUPP
--------------	-------	-------------------------	-----------------------

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Decomposition Temperature	ca. 183 °C; 190 - 192 °C.
Melting Point	ca. 183 °C; 190 - 192 °C (decomposes).
Solubility in Water	Soluble (333 g/L at 20 °C).
Solubility in Organic Solvents	Slightly soluble in alcohol, glycerol and propylene glycol. Insoluble in ether, chloroform, benzene, petroleum ether, oils and fats.
Specific Gravity (H₂O=1)	1.65 - 1.70
pH Value	2.1 - 2.6 (5% aqueous solution)
Vapour Pressure	7.9179 Pa @ 192 °C
Volatile Component	0 %vol @ 21 °C
Partition co-efficient, n-octanol/water	log P (o/w): -2.15
Flash Point	99 °C
Flammability	Combustible.
Ignition Temperature	640 °C
Flammable Limits LEL	10% by Volume (g.cu. ft.)
Flammable Limits UEL	20% by Volume (g.cu. ft.)
Explosion Properties	May form an explosive organic dust cloud with air.
Oxidising Properties	The substance is a strong reducing agent and reacts with oxidants.
Molecular Weight	176.13
Solubility in Fat	Insoluble.
Burning Characteristics	Combustible solid. May burn if exposed to fire. Formation of dust clouds may pose an explosion hazard.
Other Information	Taste: Pleasant, sharp acidic taste.

10. STABILITY AND REACTIVITY

Stability	Stable at room temperature in closed containers under normal storage and handling conditions. Stable to air when dry; aqueous solutions are rapidly oxidized by air.
Hazardous Polymerization	Will not occur.
Materials to Avoid	Strong oxidizing agents, alkalies, aluminium, iron, copper, copper alloys, zinc, metal ions, water, acids, sodium nitrate, alkali hydroxides, sodium salicylate, sodium nitrite, theobromine and methenamine.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Hazardous Reaction	Reactive with oxidizing agents. Air and light sensitive. Aqueous solutions are rapidly oxidized by air, accelerated by alkalies, iron, copper.
Conditions to Avoid	Heat, ignition sources, light, air, moisture, dust generation and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Inhalation	Irritates the respiratory tract. May cause coughing and a sore throat.
Ingestion	Ingestion of small amounts during normal industrial handling is a low hazard. Ingestion of large amounts may cause gastrointestinal irritation, gastrointestinal disturbances (nausea, vomiting and diarrhoea), hypermotility, acidification of the urine which may cause precipitation of cystine and oxalate stones in the urinary tract and may cause renal failure coordination, somnolence, eyes (lacrimation), blood (anaemia), a disruption of psychological functioning resulting in decreased reaction times and psychomotor coordination. Increases iron absorption and, thus, large doses may be

Material Safety Data Sheet

Page: 5 of 6

Infosafe No. 1CH3I Issue Date : March 2007 RE-ISSUED by CHEMSUPP

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Skin dangerous in persons with haemochromatosis, thalassaemia, or sideroblastic anaemia. Persons with erythrocyte/G6PD deficiency may develop mild haemolysis. High doses taken during pregnancy may cause scurvy in infants when born.
Eye May cause mild to moderate irritation and redness. When in solution forms a strong acid which may be irritating to skin.
Chronic Effects May cause mild to moderate irritation, redness and pain. When in solution forms a strong acid which may be irritating to eyes.
Carcinogenicity Chronic ingestion of ascorbic acid can change the pH of the saliva so that calcium is lost from tooth enamel leading to dental enamel erosion. Prolonged or repeated ingestion may affect the blood/bone marrow and metabolism. Chronic ingestion of large doses may cause gastrointestinal disturbances including nausea and diarrhoea, urinary effects involving urine acidification, oxalate and uric crystallization in the bladder and kidney, and decreased reaction times and psychomotor coordination.
Acute Toxicity - Oral Not listed in the IARC Monographs.
Eye Irritation LD50 (rat): 11900 mg/kg;
LD50 (mouse): 3367 mg/kg.
Skin Irritation Eye irritation test (rabbit): Slight irritation.
Skin irritation test (rabbit): No irritation.

12. ECOLOGICAL INFORMATION

Mobility No ecological problems are to be expected when the product is handled and used with due care and attention.
Distribution: log P(oct) -2.15.
Persistence / Degradability Biologic degradation: Readily biodegradable.
BOD 48 % of ThOD /5 d (closed bottle test);
BOD 65 % of ThOD /28 d (closed bottle test).
Bioaccumulation No bioaccumulation is to be expected (log P(o/w) <1).
Acute Toxicity - Fish Onchorhynchus mykiss LC50: 1020 mg/l /96 h acid;
L.idus LC50: 33000 mg/l /48 h.
Ecotoxicity When introduced properly, no impairments in the function of waste-water-treatment plants are to be expected.

13. DISPOSAL CONSIDERATIONS

Dispose of according to relevant local, state and federal government regulations.

14. TRANSPORT INFORMATION

U.N. Number None Allocated
DG Class None Allocated
Hazchem Code None Allocated
Packing Group None Allocated

15. REGULATORY INFORMATION

Poisons Schedule Not Scheduled

16. OTHER INFORMATION

Contact Person/Point Paul McCarthy Ph. (08) 8440 2000 **DISCLAIMER STATEMENT:**
All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Material Safety Data Sheet

Page: 6 of 6

Infosafe No.	1CH3I	Issue Date : March 2007	RE-ISSUED by CHEMSUPP
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Empirical Formula C6-H8-O6

**& Structural
Formula**

References

Commonwealth Department of Health and Aged Care, 'Standard for the Uniform Scheduling of Drugs and Poisons No. 21', Commonwealth of Australia, Canberra 2006.
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Worksafe Australia, 'Hazardous Substances Information System, 2005'.
Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]', AGPS, Canberra 1994.
Worksafe Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]', AusInfo, Canberra 1995.

User Codes

User Field Title

User Code

CAS No.

50-81-7

Poisons Schedule

Not Scheduled

Molecular Weight

176.13

...End Of MSDS...