Material Safety Data Sheet

Erythorbic Acid

Section 1: Chemical Product and Company Identification Name of substance: Erythorbic Acid, d-(-) – Araboascorbic Acid Chemical Formula: C5H7O4·COOH Company:JK BIO-CHEM CO.,LTD

Section 2: Composition and Information on Ingredients Chemical Characterization:D- (-)-Erythorbic Acid CAS# 89-65-6; 100%

Section 3: Hazards Identification Potential Health Effects Inhalation: May cause mild irritation to the respiratory tract. Ingestion: Large oral doses may cause gastrointestinal disturbances. Skin Contact: May cause mild irritation.

Eye Contact: May cause mild irritation.

Chronic Exposure: No information found.

Aggravation of Pre-existing Conditions: No information found.

Information pertaining to particular dangers for human and environment:Not Applicable

Section 4: First Aid Measures

After Inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After Eye Contact Rinse opened eye for several minutes under running water. Then consult a doctor. After Swallowing Seek medical treatment.

Section 5: Fire and Explosion Data Suitable Extinguishing Agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards caused by the material, its products of combustion or resulting gases:In case of fire, the following can be released: Carbon monoxide (CO) Protective Equipment:Wear self-contained respirator. Wear fully protective impervious suit.

Section 6: Accidental Release Measures

Person-related Safety Precautions:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

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Measures For Environmental Protection:Do not allow material to be released to the environment without proper governmental permits.

Measures For Cleaning/Collecting:Pick up mechanically.

Additional Information:

See section 7 for information on safe handling

See section 8 for information on personal protection equipment

See section 13 for disposal information

Section 7: Handling and Storage

Handling Information For Safe Handling:Keep container tightly sealed. Store in cool; dry place in tightly closed containers. No special precautions are necessary if used correctly.

Information About Protection Against Explosions And Fires:No special measures required.

Storage Requirements To Be Met By Storerooms And Receptacles:No special requirements.

Information About Storage In One Common Storage Facility:Store away from oxidizing agents.

Further Information About Storage Conditions:Keep container tightly sealed. Store in cool, dry conditions in well-sealed containers.

Section 8: Exposure Controls/Personal Protection

Additional Information About Design Of Technical Systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Not Required.

Additional Information: No Data

Personal Protective Equipment/General Protective And Hygienic Measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated

clothing immediately. Wash hands before breaks and at the end of work.

Breathing Equipment:

Use suitable respirator when high concentrations are present.

Protection Of hands: Impervious Gloves

Eye Protection: Safety Glasses

Body Protection: Protective work clothing.

Section 9: Physical and Chemical Properties Form: Powder Color: White Odor: Odorless Value/Range Unit Method Change In Condition 169-172° C Melting Point/Melting Range: Not Determined Boiling Point/Boiling Range: Not Determined Sublimation Temperature/Start: Not Determined Flash Point: Not Applicable

Flammability (Solid, Gaseous) Product Is Not Flammable

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Ignition Temperature: Not Determined Decomposition Temperature: Not Determined Danger Of Explosion: Product does not present an explosion hazard Explosion Limits: Lower: Not Determined Upper: Not Determined Vapor Pressure: Not Determined Density: Not Determined Solubility In/ Miscibility With Water: Soluble

Section 10: Stability and Reactivity Data Thermal Decomposition/Conditions To Be Avoided: Decomposition will not occur if used and stored according to specifications. Materials To Be Avoided: Oxidizing Agents Dangerous Reactions: No Dangerous reactions known Dangerous Products Of Decomposition: Carbon monoxide and carbon dioxide

Section 11: Toxicological Information Acute Toxicity: Primary Irritant effect: On The Skin: May cause irritation On The Eye: May cause irritation Sensitization: No sensitizing effects known Other Information (About Experimental Toxicology): Mutagenic effects have been observed on tests with bacteria. Subacute To Chronic Toxicity: Other than potential irritation (see above), no information on illness or injury from acute or chronic exposure to this product is available. Additional Toxicological Information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Section 12: Ecological Information General Notes: Do not allow material to be released to the environment without proper governmental permits. Section 13: Disposal Considerations Product: Recommendation Consult state, local or national regulations for proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.

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Recommended Cleansing Agent: Water, if necessary with cleansing agents. Recommendation Consult state, local or national regulations for proper disposal. Uncleaned Packagings: Recommendation: Disposal must be made according to official regulations. Recommended cleansing Agent: Water, if necessary with cleansing agents. Not hazardous material for transportation.

Section 14: Transport Information Not a hazardous material for transportation. DOT Regulations: Hazard Class: None Land Transport ADR/RID (cross-border) ADR/RID Class: None Maritime Transport IMDG: IMDG Class: None Air Transport ICAO-TI and IATA-DGR: ICAO/IATA Class: None Transport/Additional Information: Not dangerous according to the above specifications.

Section 15: Other Regulatory Information

Product Related Hazard Informations:

Observe the general safety regulations when handling chemicals.

National Regulations: All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.

ENECS: This product is on the European Inventory of Existing Commercial Chemcial Substances DSCL (EEC): This product is not classified according to the EU Regulations.

S24/25 Avoid contact with skin and eyes.

Information About Limitation Of Use:

For use only by technically qualified individuals.

Section 16: Other Information

Employers should use this information only as a supplement to to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.