

| 1. PRODUCT AND COMPANY IDENTIFICATION |  |  |  |
|---------------------------------------|--|--|--|
| Product Name:                         | L-Lysine 70%   |  |  |
| Product Number:                       |  |  |  |
| Brand:                                | CJ   |  |  |
| Intended Use:                         | Animal Feed Ingredient   |  |  |
| Synonyms/Alternate Name:              | Liquid Lysine 70%  |  |  |
| Manufacturer:                         | CJ Bio America<br>1946 Harvest Avenue<br>Fort Dodge, Iowa 50501<br>USA |  |  |
| Contact Information:                  | 515-302-8028 (telephone)<br>515-574-3190 (fax)                         |  |  |

| 2. HAZARD IDENTIFICATIO      | N  |  |  |
|------------------------------|--|--|--|
| Emergency Overview           | This product contains no substances which, at their given concentration, are considered to be hazardous to health. |  |  |
| Appearance                   | Dark Brown   |  |  |
| Physical State               | Liquid   |  |  |
| Odor                         | Slight Odor  |  |  |
|                              | Potential Health Effects   |  |  |
| Routes of Exposure           | Eye contact, skin contact, inhalation  |  |  |
|                              | Acute Effects  |  |  |
| Eye                          | May cause irritation   |  |  |
| Skin                         | May cause irritation   |  |  |
| Inhalation                   | May cause irritation   |  |  |
| Ingestion                    | May be harmful if swallowed  |  |  |
| Chronic Effects              | Prolonged exposure may cause chronic effects   |  |  |
| OSHA Defined Hazards         | Not classified   |  |  |
| GHS Label Elements           | N/A – not a hazardous substance or mixture   |  |  |
| GHS Signal Word              | N/A – not a hazardous substance or mixture   |  |  |
| GHS Precautionary Statements | N/A – not a hazardous substance or mixture   |  |  |



| Common Name   |             | L-Lysine          |                                   |  |
|---------------|-------------|-------------------|-----------------------------------|--|
| Formula       |             | $C_6H_{14}N_2O_2$ |                                   |  |
|               | Non-Hazardo | ous Components    |                                   |  |
| Chemical Name | CAS No.     | Weight %          | North America<br>Hazard Indicator |  |
| L-Lysine      | 56-87-1     | 55                | _                                 |  |
| Water         | 7732-18-5   | 45                | -                                 |  |

| 4. FIRST AID MEASURES             |   |  |  |
|-----------------------------------|---|--|--|
| Eye Contact                       | Rinse thoroughly with copious amounts of water                                  |  |  |
| Skin Contact                      | Rinse immediately with copious amounts of water; soap may be helpful.           |  |  |
| Inhalation                        | Move to fresh air   |  |  |
| Ingestion                         | Rinse mouth with water; drink water to dilute; consult a physician if necessary |  |  |
| Notes to Physician                | Treat symptomatically   |  |  |
| Protection of First Aid Providers | Use personal protective equipment   |  |  |

| 5. FIRE-FIGHTING MEASURES                  |   |  |  |
|--|---|--|--|
| Flammable Properties                       | Product is capable of burning but is not readily ignited.                                     |  |  |
| Suitable Extinguishing Media               | Water; Carbon Dioxide (CO <sub>2</sub> ); Dry Chemical  |  |  |
| Unsuitable Extinguishing Media             | None  |  |  |
| Hazardous Combustion Products              | Carbon Monoxide (CO); Carbon Dioxide (CO <sub>2</sub> )<br>Nitrogen Oxides (NO <sub>x</sub> ) |  |  |
| Ex   | plosion Data  |  |  |
| Sensitivity to Mechanical Impact           | No information available  |  |  |
| Sensitivity to Static Discharge            | No information available  |  |  |
| Specific Hazards Arising from the Chemical | No known hazards  |  |  |
|  | NFPA  |  |  |
| Health                                     | 0   |  |  |
| Flammability                               | 1   |  |  |
| Stability & Reactivity                     | 0   |  |  |
| Physical Hazard                            | -   |  |  |





| Personal Precautions      | Ensure adequate ventilation; use personal protective equipment; avoid high pressure washing or generation of aerosols.  Prevent further chemical release if safe to do so. |  |
|---------------------------|--|--|
| Environmental Precautions |  |  |
| Methods for Clean-up      | Contain released materials; soak up with inert absorbent material; pick up and transfer to properly labeled containers; after clean-up, flush area with water.             |  |

| 7. HANDLING AND STORAGE |  |
|-------------------------|--|
| Handling                | Handle in accordance with good industrial hygiene and safety practices.            |
| Storage                 | Keep containers closed to avoid contamination; keep away from sources of ignition. |

| 8. EXPOSURE CONTROLS/PER       | SONAL PROTECTION  |
|--------------------------------|---|
| Exposure Limits                | Not known to contain any hazardous materials with occupational exposure limits.   |
| Engineering Measures           | Ensure adequate ventilation; especially in confined areas.                        |
| Perso                          | onal Protective Equipment   |
| Eye/Face Protection            | Where splashes may occur, wear goggles.   |
| Skin/Body Protection           | Long sleeved clothing, protective gloves.   |
| Respiratory Protection         | In case of mist, spray or aerosol exposure, wear suitable respiratory protection. |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practices.           |

| 9. PHYSICAL AND CHEMICAL PROPERTIES |                          |  |
|-------------------------------------|--------------------------|--|
| Appearance                          | Dark Brown               |  |
| Physical State                      | Liquid                   |  |
| Odor                                | Slight odor              |  |
| Odor Threshold                      | No information available |  |



| Flash Point                | No information available                       |  |  |
|----------------------------|--|--|--|
| Autoignition Temperature   | No data available                              |  |  |
| Boiling Point              | 115°C / 240°F                                  |  |  |
| Melting / Freezing Point   | No information available                       |  |  |
| Flammability Limits in Air | No information available                       |  |  |
| Exposure Limits            | No information available                       |  |  |
| Explosive Properties       | No information available                       |  |  |
| pH                         | 9 to 11  |  |  |
| Vapor Pressure             | Not applicable                                 |  |  |
| Solubility                 | Partly soluble in alcohol; insoluble in ether. |  |  |
| Water Solubility           | Soluble  |  |  |
| Evaporation Rate           | Not applicable                                 |  |  |
| Vapor Density              | No information available                       |  |  |
| Density                    | (25°C) 9.6lb/gal (1.146 g/cm <sup>3</sup> )    |  |  |
| Specific Gravity           | No information available                       |  |  |
| Oxidizing Properties       | No information available                       |  |  |
| Viscosity                  | (25°C) 30-40 cps                               |  |  |

| 10. STABILITY AND REACTIVITY       | 7  |  |  |
|------------------------------------|--|--|--|
| Chemical Stability                 | Stable under normal conditions   |  |  |
| Conditions to Avoid                | Heat, flames and sparks; other sources of ignition.                                      |  |  |
| Incompatible Materials             | Strong oxidizing agents  |  |  |
| Hazardous Decomposition Products   | None under normal use; when heated to decomposition may emit chlorous and nitrous fumes. |  |  |
| Possibility of Hazardous Reactions | May generate heat when neutralized with acid.  |  |  |

| 11. TOXICOLOG   | GICAL INFORMAT | TION                 |                          |                 |  |
|-----------------|----------------|----------------------|--------------------------|-----------------|--|
|                 |                | Acute Toxicity       |                          |                 |  |
| LD50 Oral       |                | No informatio        | No information available |                 |  |
| LD50 Dermal     |                | No informatio        | No information available |                 |  |
| LC50 Inhalation |                | No information       | No information available |                 |  |
|                 | Toxicolog      | gical Data for Compo | nents                    |                 |  |
| Chemical Name   | Weight %       | LD50 Oral            | LD50 Dermal              | LC50 Inhalation |  |
| Water           | 45             | 90 mL/kg rat         |                          |                 |  |
|                 |                | Chronic Effects      |                          |                 |  |



| Carcinogenicity       | No known carcinogenic chemicals in product. |  |  |
|-----------------------|---|--|--|
| OSHA                  | Not listed                                  |  |  |
| ACGIH                 | Not listed                                  |  |  |
| NTP                   | Not listed                                  |  |  |
| Mexico                | Not listed                                  |  |  |
| IARC                  | Not listed                                  |  |  |
| Subchronic Toxicity   | No information available                    |  |  |
| Irritation            | No information available                    |  |  |
| Corrosivity           | No information available                    |  |  |
| Sensitization         | No information available                    |  |  |
| Neurological Effects  | No information available                    |  |  |
| Mutagenic Effects     | No information available                    |  |  |
| Reproductive Effects  | No information available                    |  |  |
| Developmental Effects | No information available                    |  |  |
| Teratogenicity        | No information available                    |  |  |
| Target Organ Effects  | No information available                    |  |  |

| 12. ECOLOGICAL INFORMATION   | ON  |
|------------------------------|---|
| Ecotoxicity                  | Contains no substances known to be hazardous to the environment; contains no substances known to be non-degradable in waste water treatment plants. |
| Persistence/Degradability    | Readily biodegradable   |
| Bioaccumulation/Accumulation | Not applicable  |
| Mobility                     | Soluble in water  |

| 13. DISPOSAL CONSIDERATION | S   |
|----------------------------|---|
| Waste Disposal Methods     | May be landfilled or incinerated, when in compliance with local regulations; dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction |
| Contaminated Packaging     | Empty containers may be taken for local recycling, recovery or waste disposal.  |

| 14. TRANSPORT INFORMATION            |                     |
|--------------------------------------|---------------------|
| Domestic Transport Regulations (USA) | DOT – Not regulated |
| Domestic Transport Regulations (CAN) | TDG – Not regulated |
| Domestic Transport Regulations (MEX) | MEX – Not regulated |



| International Transport Regulations |               |  |  |  |
|-------------------------------------|---------------|--|--|--|
| ICAO                                | Not regulated |  |  |  |
| IATA                                | Not regulated |  |  |  |
| IMDG/IMO                            | Not regulated |  |  |  |

| 15. REGULATORY INFORMATION |   |
|----------------------------|---|
| International Inventories  | The components of this product are reported in the following inventories: |

| Chemical<br>Name | TSCA | DSL | NDSL | EINECS | ELINCS | AICS | ENCS | CHINA | PICCS | KECL | NZLoC |
|------------------|------|-----|------|--------|--------|------|------|-------|-------|------|-------|
| L-Lysine         | Yes  | Yes | No   | Yes    | No     | Yes  | Yes  | No    | Yes   | Yes  | Yes   |
| Water            | Yes  | Yes | No   | Yes    | No     | Yes  | No   | Yes   | Yes   | Yes  | Yes   |

DSL: Domestic Substance List (Canada); EINECS: European Inventory of Existing Commercial Chemical Substances (EU); AICS: Australian Inventory of Chemical Substances (Australia); ENCS: Existing and New Chemical Substances (Japan); PICCS: Inventory of Chemicals and Chemical Substances (Philippines); KECL: Korean Existing and Evaluated Chemical Substances (Korea); NZLoC: New Zealand Inventory of Chemicals (New Zealand); TSCA: Toxic Substances Control Act, Section 8(b) inventory (USA).

| USA: F  | Federal Regulations   |  |  |
|---|---|--|--|
| Ozone Depleting Substances  | No Class I or Class II materials know to be used in the manufacture of, or contained in, this product.    |  |  |
| SARA 313  | Not know to contain reportable chemicals  |  |  |
| Clean Air Act, Section 112 Hazardous Air<br>Pollutants (HAPS) 40 CFR 61 | Not known to contain any HAPS   |  |  |
| SARA 311/312  | Hazardous Categorization  |  |  |
| Acute Health Hazard   | No  |  |  |
| Chronic Health Hazard   | No  |  |  |
| Fire Hazard   | No  |  |  |
| Sudden Release of Pressure Hazard                                       | No  |  |  |
| Reactive Hazard   | No  |  |  |
| USA:  | State Regulations   |  |  |
| California Position 65  | Not known to contain Proposition 65 chemicals above those naturally present in their agricultural source. |  |  |
| State Right-To-Know   | No known components subject to "Right-To-Know" legislation of any US state                                |  |  |



| Canada Regulations                                    |  |  |  |
|---|--|--|--|
| WHMIS Product Classification                          | Not a WHMIS controlled product                                       |  |  |
| WHMIS Ingredient Disclosure List (IDL)                | No known component is listed on the WHMIS Ingredient Disclosure List |  |  |
| Canadian National Pollutant Releases Inventory (NPRI) | No known component is listed on NPRI                                 |  |  |

| 16. OTHER INFORMATION |  |
|-----------------------|--|
| Prepared By           | CJ Bio America                         |
| Preparation Date      | 05/29/2015                             |
| Revision Date         | 09/20/2017                             |
| Revision Summary      | Document created based on L-Lysine 50% |

The information provided on this SDS is correct to the best of our knowledge, information, and belief at the date of its publication. This information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any other process, unless specified in the text.