SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: ALPHA LIPOIC ACID, USP
PRODUCT CODE: 2535
SUPPLIER:
- MEDISCA Inc.
  Tel.: 1.800.932.1039 | Fax.: 1.855.850.5855
  661 Route 3, Unit C, Plattsburgh, NY, 12901
  3955 W. Mesa Vista Ave., Unit A-10, Las Vegas, NV, 89118
  6641 N. Belt Line Road, Suite 130, Irving, TX, 75063
- MEDISCA Pharmaceutique Inc.
  Tel.: 1.800.665.6334 | Fax.: 514.338.1693
  4509 Rue Dobrin, St. Laurent, QC, H4R 2L8
  21300 Gordon Way, Unit 153/158, Richmond, BC V6W 1M2
- MEDISCA Australia PTY LTD
  Tel.: 1.300.786.392 | Fax.: 61.2.9700.9047
  Unit 7, Heritage Business Park
  5-9 Ricketty Street, Mascot, NSW 2020

EMERGENCY PHONE:
- CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
- NSW Poisons Information Centre: 131 126

USES: Antioxidant

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION: Acute Toxicity - Oral (Category 4)

PICTOGRAM:
- Warning

SIGNAL WORD: Warning

HAZARD STATEMENT(S):
- Harmful if swallowed.

AUSTRALIA-ONLY HAZARDS:
- Repeated exposure may cause skin dryness or cracking.

PRECAUTIONARY STATEMENT(S):
- Prevention: Wash thoroughly after handling
  - Do not eat, drink or smoke when using this product.
- Response: IF SWALLOWED: Immediately call a poison center or medical professional; Rinse mouth.
- Storage: Not applicable
- Disposal: Dispose of contents and/or container in accordance with local regulations.

HMIS CLASSIFICATION:
- Health Hazard: 1
- Flammability: 0
- Reactivity: 0
- Personal Protection: E

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME: 1, 2-Dithiolane-3-pentanoic acid; 1,2-dithiolane-3-valeric acid

BOTANICAL NAME: Not applicable

SYNONYM: Thiocic acid; DL-alpha-Lipoic acid
SAFETY DATA SHEET

CHEMICAL FORMULA
C₈H₁₄O₂S₂

CAS NUMBER
1077-28-7

ALTERNATE CAS NUMBER
Not applicable

MOLECULAR WEIGHT
206.329

COMPOSITION

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<th>CAS NUMBER</th>
<th>% BY WEIGHT</th>
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</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as health hazards and hence require reporting in this section.

NOTES
Chemical family: Dithiol.

SECTION 4: FIRST-AID MEASURES

IN CASE OF EYE CONTACT
Flush with copious amounts of water for 15 minutes, separating eyelids with fingers. If irritation persists seek medical aid.

IN CASE OF SKIN CONTACT
Wash with soap & water for 15 minutes. If irritation persists seek medical aid.

IF SWALLOWED
Call a physician. Wash out mouth with water. Do not induce vomiting without medical advice.

IF INHALED
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SYMPTOMS AND EFFECTS
Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 5: FIREFIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
Not applicable

FLAMMABLE PROPERTIES
May be combustible at high temperature

HAZARDOUS COMBUSTION PRODUCTS
Under fire conditions, hazardous fumes will be present.

EXTINGUISHING MEDIA
Small fire: dry chemical, CO₂ or water spray. Large fire: dry chemical, CO₂, alcohol resistant foam or water spray. Do not get water inside containers.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

METHODS & MATERIAL FOR CONTAINMENT
On land, sweep or shovel into suitable containers. Minimize generation of dust.

CLEANUP PROCEDURE
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Shut off all sources of ignition. Evacuate the area. If necessary, employ water fog to disperse the vapors. Absorb the matter with compatible vermiculite or other absorbing material. Place in a suitable container and retain for disposal. Ventilate and clean the affected area. Do not flush into sewerage system or to drains.
SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Do not inhale. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.

STORAGE CONDITIONS

Store in original container, tightly sealed container, protected from direct sunlight, in a dry and well-ventilated area, away from incompatible materials. Store in accordance with local regulations. Eliminate all ignition sources. Separate from oxidizing materials. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Preserve in well-closed containers. Protect from light.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

Chemical Name: ALPHA LIPOIC ACID   CAS #: 1077-28-7

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<th>TWA</th>
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N/L = Not Listed

EXPOSURE GUIDELINES

Consult local authorities for provincial or state exposure limits. Particulates not otherwise regulated, respirable fraction: 5 mg/m3

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by WHMIS or OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin: Wear appropriate gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to minimize contact with skin. Respirators: Follow WHMIS or OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

SPECIFIC ENGINEERING CONTROLS

Adequate mechanical ventilation. Fume hood, eye wash station, and safety shower.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE

Solid

DESCRIPTION

Slightly yellow crystalline powder. Is almost odorless.

SOLUBILITY

Very slightly soluble in water, very soluble in dimethyl formamide, freely soluble in methanol.

ODOR

Almost odorless

FLAMMABILITY

May be combustible at high temperature

ODOR THRESHOLD

Not available

PH

Not available

MELTING POINT

(60-62)°C, (140-143.6)°F

BOILING POINT

(160-165)°C, (320-329)°F

FREEZING POINT

(60-62)°C, (140-143.6)°F

FLASH POINT

Not available
SECTION 10: STABILITY AND REACTIVITY

**REACTIVITY**
- Not established

**STABILITY**
- Stable under recommended storage conditions

**MATERIALS TO AVOID**
- Strong oxidizing agents

**HAZARDOUS DECOMPOSITION PRODUCTS**
- Toxic fumes of carbon monoxide, carbon dioxide, sulfur oxides and other gases may occur

**HAZARDOUS POLYMERIZATION**
- Will not occur

**POSSIBILITY OF HAZARDOUS REACTION**
- Not established

**CONDITIONS TO AVOID**
- Moisture, sunlight and extreme temperatures

SECTION 11: TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY**
- Oral: Rat: LD50: (mg/kg): 1130
- Dermal: Rabbit LD50: (mg/kg): Not available
- Inhalation: Rat: LD50: (mg/L/4hr): Not available

**SKIN CORROSION/IRRITATION**
- Due to lack of data the classification is not possible.

**SERIOUS EYE DAMAGE/EYE IRRITATION**
- Due to lack of data the classification is not possible.

**RESPIRATORY OR SKIN SENSITIZATION**
- Due to lack of data the classification is not possible.

**GERM CELL MUTAGENICITY**
- Due to lack of data the classification is not possible.

**CARCINOGENICITY**
- OSHA: ALPHA LIPOIC ACID is not listed.
- NTP: ALPHA LIPOIC ACID is not listed.
- IARC: ALPHA LIPOIC ACID is not listed.
- California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**ADDITIONAL CARCINOGENICITY INFORMATION**
- Based on available data, the classification criteria are not met.
- 20 - 180 mg/kg/day Carcinogenicity study, administered orally.
- Result: Not carcinogenic.
- Species: Rat
- Test Duration: 2 years
**SAFETY DATA SHEET**

**SECTION 1: IDENTIFICATION**

**Product Name:** Alpha Lipoic Acid, USP

**UN PROPER SHIPPING NAME:** Not applicable

**UN NUMBER:** Not applicable

**CLASS:** Not applicable

**PACKING GROUP:** Not applicable

**SECTION 2: HAZARDS IDENTIFICATION**

**REPRODUCTIVE TOXICITY**

Based on available data, the classification criteria are not met.
This material has not caused birth defects in animal studies.

**SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE**

Based on available data, the classification criteria are not met.

**SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE**

Based on available data, the classification criteria are not met.

**ASPIRATION HAZARDS**

Not expected to present a significant hazard under anticipated conditions of normal use.

**SIGNS AND SYMPTOMS OF EXPOSURE**

Symptoms related to the physical, chemical, and toxicological characteristics

Delayed and immediate effects of exposure
Anemia. Thrombocytopenia. Decrease in blood sugar levels.

Medical conditions aggravated by exposure
Hypoglycemia.

**POTENTIAL HEALTH EFFECTS**

- **Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion:** Harmful if swallowed.
- **Skin:** May be harmful if absorbed through skin. May cause skin irritation
- **Eyes:** May cause eye irritation.

**SECTION 12: ECOLOGICAL INFORMATION**

**TOXICITY**

LC50: 96 Hr: Fish: (mg/L): Not available
IC50: 72 Hr: Algae: (mg/L): Not available
EC50: 48 Hr: Daphnia magna: (mg/L): Not available

**PERSISTENCE AND DEGRADABILITY**

Not available

**BIOACCUMULATIVE POTENTIAL**

LogPow: 3.4

**MOBILITY IN SOIL**

Water Solubility: 127mg/L (25°C)
Henry's Law Constant: 1.64E-08 atm-m³/mole (25°C)

**OTHER ADVERSE EFFECTS**

Not available

This product is not intended to be released into the environment

**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of in accordance with federal / local laws and regulations. Avoid release into the environment.

**SECTION 14: TRANSPORT INFORMATION**

**UNITED STATES & CANADA**

**UN PROPER SHIPPING NAME:** Not dangerous good

**UN NUMBER:** Not applicable

**CLASS:** Not applicable

**PACKING GROUP:** Not applicable
SAFETY DATA SHEET

AUSTRALIA
UN PROPER SHIPPING NAME
Not dangerous good
UN NUMBER
Not applicable
CLASS
Not applicable
PACKING GROUP
Not applicable
HAZCHEM
Not Applicable
ENVIRONMENTAL HAZARDS
Not available
SPECIAL SHIPPING INFORMATION

SECTION 15: REGULATORY INFORMATION

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<th>Chemical Name &amp; CAS</th>
<th>CERCLA 40 CFR Part 302.4</th>
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N/L = Not Listed; X = Listed

AUSTRALIAN REGULATIONS

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<tr>
<th>Chemical Name &amp; CAS</th>
<th>Poisons and Therapeutic Goods Regulation</th>
<th>Therapeutic Goods Act</th>
<th>Code of Practices - Illicit Drug Precursors</th>
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SECTION 16: OTHER INFORMATION

REFERENCES
Available upon request

ABBREVIATIONS AND ACRONYMS
CAS – Chemical Abstract Service; GHS – Global Harmonized System; OSHA PEL – Occupational Safety & Health Administration Permissible Exposure Limits; TWA – Time Weighted Average; HSIS – Hazardous Substances Information System; STEL – Short Term Exposure Limit; AIHA WEEL – American Industrial Hygiene Association Workplace Environment Exposure Levels; LD50 – Lethal Dose, 50%; IARC – International Agency for Research on Cancer; NTP – National Toxicology Program; WHMIS – Workplace Hazardous Materials Information System; SARA – Superfund Amendments and Reauthorization Act; EPA – Environmental Protection Agency; CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act; HMIS – Hazardous Materials Information System; NIOSH – National Institute for Occupational Safety and Health; MSHA - Mine Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; IDHL - Immediately Dangerous to Health or Life; TLV – Threshold Limit Value; HSE – Health and Safety Executive; REL - Recommended Exposure Limit

LAST REVISION
03/2016

SUPERSEDES
06/2014
This document was created in accordance with OSHA, Safe Work Australia and WHMIS regulations. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. MEDISCA® shall not be held liable for any damage resulting from handling or from contact with the above product. Recipients of the product must take responsibility for observing existing laws and regulations.