KEEP INGREDIENTS CO. LTD

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TECHNICAL DATA SHEET

R-(+)α-Lipoic Acid Sodium Salt

1. PRODUCT DESCRIPTION

R-(+)α-Lipoic Acid Sodium Salt (product code KH-RN82) is the sodium salt of the biologically active R-isomer of α-lipoic acid. It is further processed and synthesized from R-α-lipoic acid and is supplied as a pale yellowish powder. Forming the sodium salt with metal ions yields a more stable compound, improving the stability of high-purity R-lipoic acid while providing good water solubility and faster metabolism in the body, which makes it well suited for nutraceutical and dietary supplement applications.

This Technical Data Sheet provides a complete introduction to α-lipoic acid and its R-isomer sodium salt, together with the product specification and the supplied Certificate of Analysis.

2. ABOUT α-LIPOIC ACID

α-Lipoic acid is a coenzyme that exists in mitochondria and is vitamin-like in action. It helps eliminate free radicals that accelerate aging and cause disease. After absorption through the intestinal tract it can reach any part of the cell, and because it is both water- and fat-soluble it acts as a universal antioxidant with both lipid and aqueous solubility.

Chirality. α-Lipoic acid contains a chiral group and exists in two isomeric forms: R-lipoic acid (R-ALA), which is the biologically active form, and S-lipoic acid (S-ALA), which is essentially non-bioactive. The α-lipoic acid that exists in nature is a 50/50 racemic mixture of the R- and S- isomers.

Forms. α-Lipoic acid exists in an oxidized form (LA) and a reduced form (dihydrolipoic acid, DHLA); most products on the market are the oxidized form.

Key biological characteristics. It is a vitamin-like antioxidant and anti-inflammatory agent; it is both water- and fat-soluble and can reach any part of the cell; it is an indispensable component in the cell metabolism pathway for energy production; and it can chelate with transition metal ions such as Fe^{2+}, Cu^{2+} and Hg^{2+} as well as arsenic, reducing oxidation in the body and inhibiting the formation of free radicals.

Table 1 — Comparison of α-lipoic acid and coenzyme Q10

Function	α-Lipoic Acid (ALA)	Coenzyme Q10 (Co Q-10)
Function	α-Lipoic Acid (ALA)	Coenzyme Q10 (Co Q-10)
Application	Liver support and neuropathy associated with diabetes	Cardiovascular and cerebrovascular health
Solubility	Water- and fat-soluble	Fat-soluble

Function	α-Lipoic Acid (ALA)	Coenzyme Q10 (Co Q-10)
Pharmacologic action	Protects the liver, stabilizes blood glucose, antioxidant and anti-free-radical activity, removes excess metabolic wastes in the body	Auxiliary effects on heart disease, arrhythmia, high blood pressure and cancer

3. PRODUCT INFORMATION

Item	Information
Product name	R-(+)α-Lipoic Acid Sodium Salt
CAS number	176110-81-9
Appearance	Pale yellowish powder
Country of origin	China
Derived from	R-α-lipoic acid (further processed and synthesized
Shelf life	2 years
Storage	Keep away from light and store at a low temperature (≤ 25 °C); avoid high temperature

4. PRODUCT SPECIFICATION

Table 2 — Product specification (per supplied COA)

Item	Specification	Test method
Total assay of R-ALA	≥ 82.0%	External standard, HPLC (Q/FJKH 009-2020)
Total assay of R-ALA sodium salt	≥ 99.0%	Area normalization, HPLC (Q/FJKH 009-2020)
Appearance	A pale yellowish powder	Organoleptic
Identification (IR)	Passes test	GB/T 6040-2019
Bulk density	≥ 0.120 g/ml	GB/T 20316.2-2006
Tapped density	≥ 0.155 g/ml	GB/T 21354-2008
Particle size	100% through #40 mesh	GB/T 13025.1-2012
Loss on drying	≤ 3%	Q/FJKH 009-2020
Optical (specific) rotation	+60.0° to +80.0°	Q/FJKH 009-2020
Heavy metals	≤ 5 ppm	General Rule 0821
Lead (Pb)	≤ 0.5 ppm	ICP-MS
Cadmium (Cd)	≤ 1 ppm	ICP-MS
Mercury (Hg)	≤ 0.1 ppm	ICP-MS
Arsenic (As)	≤ 1 ppm	ICP-MS
Cyclohexane	≤ 10 ppm	Q/FJKH 009-2020
Toluene	≤ 1 ppm	Q/FJKH 009-2020
Ethanol	≤ 5,000 ppm	Q/FJKH 009-2020
Total aerobic count	≤ 1,000 cfu/g	GB 4789.2-2022
Molds and yeasts	≤ 100 cfu/g	GB 4789.15-2016
Total coliforms	≤ 100 cfu/g	GB 4789.3-2016
Escherichia coli	Negative (to test < 10 cfu/g)	GB 4789.38-2012
Salmonella species	Negative (absent in 25 g)	GB 4789.4-2024
Staphylococcus aureus	Negative (absent in 25 g)	GB 4789.10-2016

Specification basis: supplied Certificate of Analysis. The supplied batch complies with the Techno R-(+)α-lipoic acid sodium salt specification.

5. PRODUCT FEATURES AND ADVANTAGES

Features of the R-(+)α-lipoic acid sodium salt form:

- The sodium salt chelates with metal ions to form a more stable compound, improving the stability of high-purity R-lipoic acid.
- It offers good water solubility and faster metabolism in the body, and is therefore more readily effective.
- It is produced from R-α-lipoic acid, which is cost-effective while retaining the biological activity of the R-isomer.

Manufacturer advantages:

- One of the world's leading companies in the R&D and manufacturing of α-lipoic acid products.
- Enhanced product stability (stable at 25 °C for 2 years).
- Highly integrated industrial chain; high product yield and low impurity content.
- Toluene-free production;

6. STORAGE AND TRANSPORTATION

- α-Lipoic acid series products are sensitive to temperature and can deteriorate (turn red) at high temperatures.
- Keep away from light and store at a low temperature (≤ 25 °C).
- Use cold-chain transport in summer where possible; normal-temperature transport may be considered in other seasons.

7. STATEMENTS AND COMPLIANCE

Toluene-free. The R-(+)α-Lipoic Acid Sodium Salt is manufactured toluene-free;

Manufacturing facility certifications, the production facility strictly adheres to management system standards established by ISO and complies with the BRCGS and SQF (Grade AA+) standards recognized by the Global Food Safety Initiative (GFSI), and holds HACCP, HALAL, NSF, FDA-registered and Sedex certifications.

8. CERTIFICATE OF ANALYSIS

Certificate of Analysis — Batch KYRAL2026082801

Field	Detail
Product name	R-(+)α-Lipoic Acid Sodium Salt
Lot No.	KYRAL2026082801
CAS No.	176110-81-9
Quantity	1,000 kg
Country of origin	China
Production date	2026-08-28
Expiry date	2026-08-27



Item	Specification	Result	Test method
Total assay of R-ALA	≥ 82.0% (external standard, HPLC)	88.4%	Q/FJKH 009-2020
Total assay of R-ALA sodium salt	≥ 99.0% (area normalization, HPLC)	100.0%	Q/FJKH 009-2020
Appearance	A pale yellowish powder	Passes	Organoleptic
Identification (IR)	Passes test	Passes	GB/T 6040-2019
Bulk density	≥ 0.120 g/ml	0.356 g/ml	GB/T 20316.2-2006

Item	Specification	Result	Test method
Tapped density	≥ 0.155 g/ml	0.543 g/ml	GB/T 21354-2008
Particle size	100% through #40 mesh	Passes	GB/T 13025.1-2012
Loss on drying	≤ 3%	0.23%	Q/FJKH 009-2020
Optical (specific) rotation	+60.0° to +80.0°	+76.1°	Q/FJKH 009-2020
Heavy metals	≤ 5 ppm	≤ 5 ppm	General Rule 0821
Lead (Pb)	≤ 0.5 ppm	Not detected	ICP-MS
Cadmium (Cd)	≤ 1 ppm	Not detected	ICP-MS
Mercury (Hg)	≤ 0.1 ppm	Not detected	ICP-MS
Arsenic (As)	≤ 1 ppm	0.0793 ppm	ICP-MS
Cyclohexane	≤ 10 ppm	1.5 ppm	Q/FJKH 009-2020
Toluene	≤ 1 ppm	Not detected	Q/FJKH 009-2020
Ethanol	≤ 5,000 ppm	868 ppm	Q/FJKH 009-2020
Total aerobic count	≤ 1,000 cfu/g	< 10 cfu/g	GB 4789.2-2022
Molds and yeasts	≤ 100 cfu/g	< 10 cfu/g	GB 4789.15-2016
Total coliforms	≤ 100 cfu/g	< 10 cfu/g	GB 4789.3-2016
Escherichia coli	Negative (to test < 10 cfu/g)	< 10 cfu/g	GB 4789.38-2012
Salmonella species	Negative (absent in 25 g)	Absent in 25 g	GB 4789.4-2024
Staphylococcus aureus	Negative (absent in 25 g)	Absent in 25 g	GB 4789.10-2016

Conclusion: This batch of product complies with the Techno R-(+)α-lipoic acid sodium salt specification. The substance is further processed and synthesized from Techno R-α-lipoic acid.

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This Technical Data Sheet should be read in conjunction with the supplied Certificate of Analysis and relevant statements. The information provided is based on the documents supplied by KEEP INGREDIENTS CO. LTD.