

## Certificate of Analysis

<b>Product Name</b>	ALPHA-LIPOIC ACID		
<b>Batch No.</b>	PBG20180110	<b>Mfg. Date</b>	2018.01.10
<b>Batch Quantity</b>	200KG	<b>Testing Date</b>	2018.01.10
<b>CAS No.</b>	1077-28-7	<b>Exp. Date</b>	2020.01.10

Items	Specifications	Results
Appearance(Color)	Light yellow to yellow	Complies
Appearance(Form)	Crystalline powder	Complies
<b>Assay(HPLC)</b>	99.0~101.0%	99.19%
<b>Identification</b>		
A.HPLC	The retention time of the peak for alpha lipoic acid of the <i>Sample solution</i> corresponds to that of the <i>Standard solution</i> , as obtained in the <i>Assay</i> .	Complies
B.Infrared Absorption	Positive	Complies
<b>Impurities</b>		
Residue on Ignition	≤0.1%	0.05%
Heavy Metals	≤10ppm	<10ppm
Individual Impurities	≤0.1%	0.06%
Total Impurities	≤2.0%	0.12%
<b>Specific Tests</b>		
Melting Range	60.0~62.0°C	60.0~61.8°C
Specific Rotation	-1.0 ~ +1.0°	-1.0 ~ +1.0°
Loss on Drying	≤0.2%	0.08%
<b>Residual Solvents(by GC)</b>		
Toluene	≤30ppm	<20ppm
Cyclohexane	≤0.2%	0.07%
<b>Microbiological</b>		
Total Plate Count	≤1,000cfu/g	<100cfu/g
Yeast & Mold	≤1,00cfu/g	<10cfu/g
E.Coil	Negative	Complies
Salmonella	Negative	Complies
<b>Conclusion</b>	Conform with USP40 standard.	

**Storage:** Store in cool & dry place, keep away from strong light and heat.

**Shelf Life:** 2 years when properly stored.