



## Certificate of Analysis

Product name	R-(+)- $\alpha$ -Lipoic Acid	CAS No.:	1200-22-2
Package:	25kg/Drum	Quantity:	400kg
MFG Date:	2025/04/13	EXP Date:	2027/04/12
Batch No.:	RALA25041301	Standard:	In house

Items	Standards	Results
Appearance	A pale yellowish powder	Conform
Identification	IR	Conform
R/S ratio	80-90%/10-20%	80.7%/19.3%
Bulk Density	$\geq 0.120\text{g/ml}$	0.412g/ml
Tapped Density	$\geq 0.155\text{g/ml}$	0.532g/ml
Particle size	100% pass through 40 mesh	Conform
Optical rotation	$+70.0^\circ$ to $+90.0^\circ$	$+73.9^\circ$
Heavy Metals (as Pb)	$\leq 5\text{ppm}$	$\leq 5\text{ppm}$
Lead (Pb)	$\leq 0.5\text{ppm}$	Not detected
Cadmium (Cd)	$\leq 1\text{ppm}$	Not detected
Mercury (Hg)	$\leq 0.1\text{ppm}$	Not detected
Arsenic (As)	$\leq 1\text{ppm}$	0.0516ppm
Cyclohexane	$\leq 3880\text{ppm}$	300ppm
Toluene	$\leq 1\text{ppm}$	Not detected
Ethyl Acetate	$\leq 500\text{ppm}$	105ppm
Total aerobic count	$\leq 1000\text{cfu/g}$	$<10\text{cfu/g}$
Molds and yeasts	$\leq 100\text{cfu/g}$	$<10\text{cfu/g}$
Total Coliforms	$\leq 100\text{cfu/g}$	$<10\text{cfu/g}$
Escherichia Coli	$<10\text{cfu/g}$	$<10\text{cfu/g}$
Salmonella	Absent in 25g	Conform
Staphylococcus aureus	Absent in 25g	Conform
Loss on drying	$\leq 0.5\%$	0.10%
Residue on ignition	$\leq 0.8\%$	0.07%
Assay	99.0%-101.0%	99.6%
Conclusion	Conform to the standard of in house.	

