

# Certificate of Analysis

Product Name:  $\alpha$ -Lipoic Acid

Lot No.:

PKG Size:

Tomo Chemical Co. Ltd.

4th Floor, 4-7-19 Kudan-minami, Chiyoda-ku

Tokyo 102-0074 JAPAN

Test Item	Specification	Result
Appearance	Pale yellow to yellow crystalline powder or powder	Passes test
Melting point	60 - 62 °C	60.8 °C
Purity test		
Heavy metal (as Pb)	max. 10 ppm	In a range
6,8-Epitrithiooctanoic acid	max. 0.20 %	0.10%
The biggest other impurities	max. 0.10 %	0.03%
Total impurities	max. 1.0 %	0.26%
Residual solvent		
Ethanol	max. 1 ppm	In a range
Toluene	max. 1 ppm	In a range
Cyclohexane	max. 1 ppm	In a range
Acetone	max. 1 ppm	In a range
Dichloromethane	max. 1 ppm	In a range
Ethyl Acetate	max. 1 ppm	In a range
N-Hexane	max. 1 ppm	In a range
MTBE	max. 1 ppm	In a range
Loss on drying	max. 1.0 %	0.10 %
Residue on ignition	max. 0.10 %	0.08 %
Content	max. 99.0 %	99.20%

---

Inspecting Section Manager