

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Specification Sheet

Product Name: **Glutathione (Reduced)**  
 Specifications & Purity: PharmPure™, Ph.Eur.  
 SKU #: **G774620**

Parameter	Limit Values
Appearance(white or almost white, crystalline powder or colourless crystals)	pass
Solubility:freely soluble in water, very slightly soluble in ethanol (96 per cent) and in methylene chloride	Pass
Assay (iodometric)(calc.on anhydrous)	98.0-101 (%)
Identity (IR-spectrum)	conforms
Identity(Specific optical rotation)	passes test
Appearance of solution(10 %; water)clear and colorless	pass
Specific Rotation $[\alpha]_{20/D}(c=4 \text{ in H}_2\text{O})(\text{calcd.on anh.substance})$	-17.5~ -15.5 (°)
Chloride(Cl)	0-200 (ppm)
Sulfate(SO <sub>4</sub> )	0-300 (ppm)
Arsenic(As)	0-1.5 (ppm)
Fe(Iron)	0-10 (ppm)
Ammonium	0-200 (ppm)
Related substances(Impurity A (L-Cysteinyglycine))	≤ 0.5 (%)
Related substances(Impurity B (Cysteine))	≤ 0.5 (%)
Related substances(Impurity C (L-Glutathione oxidized))	≤ 1.5 (%)
Related substances(Impurity D (L-γ-glutamyl-L-cysteine))	≤ 1.0 (%)
Related substances(Impurity E)	≤ 0.5 (%)
Sulfated ash(600 °C)	0-0.1 (%)
loss on drying(105°C,3 h)	0-0.5 (%)
Acetic Acid	0-5000 (ppm)
Ethanol(HS-GC)	0-5000 (ppm)
Ethyl acetate(HS-GC)	≤5000 (ppm)
Other residual solvents (ICH Q3C)	Pass
Microbiological test (Total aerobic microbialcount (TAMC))	≤ 100 (CFU/g)
Microbiological test (Total yeast and mould count (TYMC))	0-10 (CFU/g)
Bacterial endotoxins	0-20 (IU/g OR u/g)