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|-------------------|---|
| Item Number       | GL902   |
| Item              | L-Glutathione, EP, bioCERTIFIED (TM)                            |
| CAS Number        | 70-18-8   |
| Molecular Formula | C <sub>10</sub> H <sub>17</sub> N <sub>3</sub> O <sub>6</sub> S |
| Molecular Weight  | 307.32  |
| MDL Number        |   |
| Synonyms          | N-(N-L-?-Glutamyl-L-cysteinyl)-glycine ; GSH                    |

| Test                      | Specification  |         |
|---------------------------|--|---------|
|                           | Min  | Max     |
| APPEARANCE                | WHITE OR ALMOST WHITE, CRYSTALLINE POWDER OR COLOURLESS CRYSTALS |         |
| IDENTIFICATION (A)        | -17.5 to -15.5°  |         |
| IDENTIFICATION (B)        | SPECTRUM MATCHES REFERENCE                                       |         |
| ASSAY (DRIED BASIS)       | 98.0   | 101.0 % |
| APPEARANCE OF SOLUTION    | CLEAR AND COLORLESS  |         |
| SPECIFIC OPTICAL ROTATION | -17.5 to -15.5   |         |
| CHLORIDE                  |  | 200 ppm |
| AMMONIUM                  |  | 200 ppm |
| SULFATES                  |  | 300 ppm |
| IRON                      |  | 10 ppm  |
| LOSS ON DRYING            |  | 0.5 %   |
| SULFATED ASH              |  | 0.1 %   |
| ELEMENTAL IMPURITIES:     |  |         |
| CADMIUM (Cd)              | AS REPORTED  |         |
| LEAD (Pb)                 | AS REPORTED  |         |
| ARSENIC (As)              | AS REPORTED  |         |
| MERCURY (Hg)              | AS REPORTED  |         |
| RELATED SUBSTANCES:       |  |         |
| IMPURITY C                |  | 1.5 %   |
| IMPURITY D                |  | 1.0 %   |
| IMPURITY A                |  | 0.5 %   |
| IMPURITY B                |  | 0.5 %   |

| Test                                  | Specification |                       |
|---------------------------------------|---------------|-----------------------|
|                                       | Min           | Max                   |
| IMPURITY E                            |               | 0.5 %                 |
| ANY OTHER IMPURITY                    |               | 0.2 %                 |
| TOTAL IMPURITY                        |               | 2.5 %                 |
| MICROBIAL LIMITS:                     |               |                       |
| BACTERIAL ENDOTOXINS                  |               | 0.066 EU/mg           |
| TOTAL AEROBIC MICROBIAL COUNT         |               | 10 <sup>3</sup> CFU/g |
| TOTAL COMBINED YEASTS AND MOLDS COUNT |               | 10 <sup>2</sup> CFU/g |
| RESIDUAL SOLVENTS                     | AS REPORTED   |                       |
| CLASS 3 (solvent) / ETHANOL           | .             |                       |
| MONOGRAPH EDITION                     |               |                       |
| CERTIFIED HALAL                       |               |                       |
| EXPIRATION DATE                       |               |                       |
| DATE OF MANUFACTURE                   |               |                       |

***Spectrum Chemical Mfg Corp***

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|--------------------------------|-----------------------------|
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