

CERTIFICATE OF ANALYSIS

PRODUCT NAME: 5-Aminolevulinic Acid Hydrochloride
 CAS NO.: 5451-09-2
 BATCH NO.: 17/MFM/1976
 EXPIRY DATE: 15 June 2019
 STORAGE: 2°C - 8°C

| TESTS | VALUE LIMIT | RESULTS |
|-------------------------------|---------------------|----------------|
| Appearance | Almost white powder | Conforms |
| Loss on drying | <= 1.0% | 0.51% |
| Melting Point | 149 - 155°C | 150.1 to 151°C |
| Residue on ignition | <= 0.5% | 0.12% |
| Heavy metals | <= 20ppm | Conforms |
| Iron | <= 20ppm | Conforms |
| Bacteria endotoxins | <= 0.4 USP EU/mg | Conforms |
| Microbial Limits: | | |
| Total aerobic microbial count | <= 100 cfu/g | Conforms |
| Staphylococcus aureus | Absence | Absence |
| Pseudomonas aeruginosa | Absence | Absence |
| Salmonella species | Absence | Absence |
| Escherichia Coli | Absence | Absence |
| Impurities | | |
| Any other single impurity | <= 0.3% | Conforms |
| Total impurities | <= 1.0% | 0.14% |
| Assay | 98.0 – 102.0% | 99.83% |

* This material is supplied for laboratory use only.

Supplier: Formedium Ltd

Approved by:



Date: 13 SEP 2017

For and on behalf of
 FORMEDIUM Ltd, Unit 1B
 Hunstanton Commercial Park
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 (Authorised Signature)