

CERTIFICATE OF ANALYSIS

PRODUCT NAME: L-PHENYLALANINE
CAS NO.: 63-91-2
BATCH NO.: 17/MFM/2043
EXPIRY DATE: October 2021

| TESTS | SPECS | RESULTS |
|----------------------------|--------------------------------------|-----------|
| Assay | 99.0% to 101.0% | 99.43% |
| Appearance | White crystals or crystalline powder | Complies |
| Identification | Meets the requirements | Complies |
| Specific Optical Rotation: | -35.2° to -33.2° | - 34.01° |
| pH | 5.7 to 6.7 | 6.1 |
| Loss on Drying | < = 0.20% | 0.05% |
| Residue on Ignition | < = 0.10% | 0.03% |
| Lead | <= 3 ppm | < 3 ppm |
| Cadmium | <= 1 ppm | < 1 ppm |
| Mercury | <= 0.1 ppm | < 0.1 ppm |
| Arsenic | <= 1 ppm | < = 1 ppm |
| Heavy Metals (as Pb) | < = 20 ppm | < 20 ppm |

* This material is supplied for laboratory use only.

Supplier: Formedium Ltd

Approved by: *[Signature]*
 For and on behalf of
FORMEDIUM Ltd, Unit 1B
Hunstanton Commercial Park
PE36 5JQ England
 (Authorised Signature)

Date: 19 DEC 2017