



**PMP FERMENTATION PRODUCTS, INC.**  
 900 NE ADAMS STREET - PEORIA, ILLINOIS 61603  
 309-637-0400

**CERTIFICATE OF ANALYSIS**

**Product Description:** MALIC ACID DL M 25 KG      **SO #:** SO-2405121  
**PMP Item Code:** 86101

**QTY:** 9,000.00

Test	Specification	Result
Appearance	White to Nearly White Crystalline Granules or Powder	White to Nearly White Crystalline Granules or Powder
Identification A	IR Spectra Match	IR Spectra Match
Lead	0 - 2 ppm	0
Loss on Drying	0 - 0.3 %	0.10
Heavy Metals (as Pb)	5 ppm max	5 ppm max
Arsenic	0 - 2 ppm	0
Assay	99 - 100.5 %	99.9
Residue on Ignition	0 - 0.05 %	0.0
Water Insolubles	0 - 0.1 %	0.0
Specific Rotation @ 25C	-0.1 - 0.1	0.0
Fumaric Acid	0 - 1 %	0.8
Maleic Acid	0 - 0.05 %	0.0
Copper	0 - 50 ppm	0
Zinc	0 - 25 ppm	0
Mercury	0 - 1 ppm	0
Sulfated Ash	0 - 0.1 %	0.0
Melting Point	127 - 132	130.0
Manufacturing Statement	Manufactured by FUSO Chemical of Japan for PMP Fermentation	Manufactured by FUSO Chemical of Japan for PMP Fermentation
Date of Manufacture:		03/21/2023
Date of Expiration:		03/20/2028

I certify that this product has been tested in the laboratories of PMP Fermentation Products and complies with the requirements applicable regulatory compendia.

Scot Whetsell  
 Quality Assurance Manager

**REVIEWED**  
 By DE at 4:17 pm, May 31, 2024