



## CERTIFICATE OF ANALYSIS

Product : **MALIC ACID**  
Product number : M1315  
Batch number : 017015  
Date of manufacturing : 19-01-2022  
Date of analysis : 21-02-2022  
Date of expiry : 31-01-2027

Packaging and storage : store in a well-closed container at room temperature

	<b>SPECIFICATION</b>	<b>RESULT</b>	<b>UNITS</b>	<b>REMARKS</b>
Appearance	white or almost white crystalline powder	complies		
Identification	conform	complies		
Appearance of solution	clear and colourless	complies		20% in H <sub>2</sub> O
In water insoluble matter	≤ 0.1	< 0.1	%	
Melting point	128 – 132	131	°C	
Specific rotation	-0.10 – +0.10	0.00	°	
Heavy metals	≤ 0.0020	complies	%	as Pb
Arsenic	≤ 0.0003	complies	%	
Lead	≤ 0.0002	complies	%	
Copper	≤ 0.001	complies	%	
Mercury	≤ 0.0001	complies	%	
Zinc	≤ 0.001	complies	%	
Related substances	conform	complies		HPLC
Sulphated ash	≤ 0.1	0.1	%	
Water	≤ 2.0	0.2	%	Karl Fischer
Assay	99.0 – 101.0	100.1	%	anhydrous substance

This certificate of analysis is conform the results of the manufacturer.

Conclusion: approved

Released by:

drs. M. van Wissen, pharmacist  
Department of Quality Control Duchefa B.V.

Date: 11-05-2022

The buyer is responsible to test each batch to ensure the product is suitable for their specific purpose.

Duchefa Biochemie B.V.