



Productos Químicos Industriales, usos de Laboratorio
y Materias Primas para la Alimentación.

CERTIFICATE OF ANALYSIS

DATE : 19/09/2013
CUSTOMER :
ISEGEN REF. : 010362
D / N NO. : N8620
CONTAINER NO. : SUDU 1966997
SEAL NO. : 4892959
VESSEL : NILEDUTCH ZEBRA
MANUFACTURING DATE : 15/09/2013
EXPIRY DATE : 15/09/2015 PROVIDED PRODUCT STORED IN DRY, COOL CONDITIONS AND NOT
SUBJECT TO PRESSURE
IMPORT PERMIT NUMBER : 13 001 DJAI 819562 Z

MATERIAL DL MALIC ACID - FOOD GRADE (Hydroxysuccinic Acid) – 850um

Molecular mass : 134.1 g/mole CAS : 617-48-1

BATCH NO 7130915

QUANTITY 17500 kgs

<u>ANALYSIS</u>	<u>METHOD OF ANALYSIS</u>	<u>SPECIFICATION</u>	<u>RESULTS</u>
Appearance	FCC 8	White or nearly white granules	Complies
Identification	FCC 8	To comply with std. scan™	Complies
Assay as Malic Acid	FCC 8	NLT 99.0% and NMT 100.5% of C ₄ H ₆ O ₅	99.55
Water	Karl Fischer	NMT 0.3% m/m	0.28
Melting Point	Isegen Proc. 1.22.5.2.2	127 → 132 °C	128.8
Fumaric Acid	FCC 8	NMT 1.0% m/m	0.95
Maleic Acid	FCC 8	NMT 0.05% m/m	0.006
Heavy Metals as Pb	FCC 8	NMT 5 mg/kg	<5
Lead	FCC 8	NMT 2 mg/kg	<2
Arsenic	ICP	NMT 1 mg/kg	<1
Mercury	ICP	NMT 1 mg/kg	<1
Residue on Ignition (Sulphated Ash)	FCC 8	NMT 0.1% m/m	0.037
Water Insoluble Matter	FCC 8	NMT 0.1% m/m	0.013
Readily Oxidisable Substances	Isegen Proc. 1.22.5.2.16	Passes Test – 3 minutes (min)	Complies
Chlorides	Isegen Proc. 1.22.5.2.17	NMT 40 mg/kg	<40
Specific Rotation [α] _D ²⁵	FCC 8	- 0.10° and + 0.10°	Complies
Particle Size Distribution	Isegen Proc. 1.22.5.2.14	NLT 98% thru 850 um	99.14

We confirm that this batch complies with FCC 8, E296 and is GMO and Allergen free

Agüero

QA REPRESENTATIVE