

Certificate of Analysis

Cust Order Ref		Order Nr
Product	PURAC HiPure 90 L(+)-Lactic Acid HiPure 90	
Lot No	1401001036	
Manufacturing Date	14-Jan-2014	
Retest Date	13-Jan-2019	

Test	Units	Specification	Result
Assay	%	89.5 - 90.5	90.1
Colour fresh	APHA	<=20	<5
Colour after heating	APHA	<=20	5
Sulphated ash	%	<=0.01	0.003

Parameters not tested in all lots but validated through in-process or final testing.

Test	Units	Specification
Odour.		Passes test
Form		Syrupy liquid
Flavour		mild, typical lactic acid
Stereochemical purity (L-isomer)	%	>=95
Specific gravity (20°C)	g/ml	1.20 - 1.22
Heavy metals total	ppm	<=5
Iron	ppm	<=5
Lead	ppm	<=0.5
Arsenic	ppm	<=1
Calcium	ppm	<=10
Chloride	ppm	<=10
Sulphate	ppm	<=10
Reducing sugars (USP)		Passes test
Sugars and other reducing substances		Passes test
Readily carbonizable substances (USP)		Passes test
Positive test for lactate		Passes test**
Mercury	ppm	<=1
Cyanide	ppm	<=5
Citric, oxalic, phosphoric, tartaric		Passes test**
Volatile fatty acids.		Passes test**
Methanol	ppm	<=50
Ether test EP		Passes test

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** Passes test of latest version of FCC, JSFA, EUSFA, EP and USP

This lot complies with: Latest FCC, JSFA, 231/2012/EC, EP (except if the measured gravity is > 1.21), USP

This document is generated by a validated system and therefore not signed.

E.Rodriguez

Head Quality Control