

CALCIUM D-PANTOTHENATE

CERTIFICATE OF ANALYSIS

Productcode : 0412678
 Lot No. : TL01408722
 Analysis No. : 06172544

Test	Result	Limits / Specifications	Dimension / Units
Appearance visual	free flowing powder	free flowing powder	
Colour visual	white	white	
Solution in Water (c = 5) visual	clear and colourless	clear and colourless	
pH (c = 5 in water) of 5% solution in water	6.8	6.8 to 8.0	
Alkalinity visual	corresponds*	no pink colouration	
Identity Calcium, rotation and chromatography Ca, rotation, chromatography	corresponds*	corresponds	
Identity Copper Sulphate	corresponds*	complies	
Specific Rotation (as dry) 589nm, 20deg, c=5	26.8	+25.5 to +27.5	deg.
Loss on Drying Ph. Eur.	2.3	0.0 to 3.0	%
Heavy Metals colourimetric comparison to Pb standard	corresponds*	0 to 10	ppm
Lead atomic absorption	corresponds*	0 to 2	ppm
Chloride turbidimetric comparison to standard	corresponds*	0 to 200	ppm
Alkaloids visual	corresponds*	no turbidity produced	
3-Aminopropionic Acid non-aqueous titration	0.17	0 to 0.5	%
Nitrogen content digestion/titration	5.9	5.7 to 6.0	%
Calcium content titration	8.3	8.2 to 8.6	%
Assay (as dry) non-aqueous titration	98.6	98.0 to 101.0	%
Dichloromethane Headspace GC	corresponds*	0 to 600	ppm
Methanol Headspace GC	corresponds*	0 to 3000	ppm

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Calcium Pantoate HPLC	0.77	0.0 to 0.80	%
Pantolactone HPLC	0.05	0.0 to 0.20	%
Methyl Pantothenate HPLC	0.02	0.0 to 0.15	%
Impurity 1 HPLC	0.07	0.0 to 0.15	%
Impurity 2 HPLC	0.13	0.0 to 0.15	%
Unspecified Impurities >0.10 percent HPLC	not present	not present	
Total Impurities HPLC	1.2	0.0 to 1.5	%
Microbiology			
Total Aerobic Microbial Count adapted Ph. Eur. 2.6.12	less than 10 ³ cfu/g	less than 10 ³ cfu/g	
Total combined Yeasts/Moulds adapted Ph. Eur. 2.6.12	less than 10 ² cfu/g	less than 10 ² cfu/g	
Enterobacteria Ph. Eur. 2.6.13	less than 10 ¹ cfu/g	less than 10 ¹ cfu/g	
Escherichia coli Ph. Eur. 2.6.13	negative in 10g	negative in 10g	
Salmonella spp. adapted Ph.Eur. 2.6.13	negative in 25g	negative in 25g	
Staphylococcus aureus Ph. Eur. 2.6.13	negative in 10g	negative in 10g	
Pseudomonas aeruginosa Ph. Eur. 2.6.13	negative in 10g	negative in 10g	

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*) checked at regular intervals

This lot was analysed and released by our authorized Quality Control Department and was found to meet the specifications as given above.

The product meets all requirements of the following valid compendia when tested accordingly:

Ph.Eur. + USP + FCC

DSM Nutritional Products (UK) Ltd.
The Quality Assurance Manager



Strachan Fraser

Calcium D-Pantothenate

GMO Statement

We hereby confirm that the product Calcium D-Pantothenate is manufactured by conventional processes** and therefore does not contain GMO-DNA.

** The term "conventional process" refers to chemical synthesis, fermentation using non GMM, extraction from conventional plants.

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Disclaimer: The information contained herein is to the best of our knowledge accurate. However, we refuse any liability for the application and use of further processed material containing our product. Solely the producer of the final product has to assume full responsibility according to the relevant local regulations. The content of this document is subject to change without further notice unless otherwise agreed in writing. Please consult your local representative or one of DSM's websites at <http://webshop.dsm.com> for latest version of this document or the latest information.



مَجْلِسُ الْعُلَمَاءِ الْإِسْلَامِيِّ

**THE ASSESSMENT INSTITUTE FOR FOODS, DRUGS AND COSMETICS
INDONESIAN COUNCIL OF ULAMA**

Majelis Ulama Indonesia Building 3rd floor, Jl. Proklamasi No. 51, Lt. 3 Menteng Jakarta Pusat, Telp. 021 391.8890, 31902666, Fax. 3918915
Global Halal Centre, Jl. Pemuda no.5 Bogor 16161, Telp. 0251 8358748 (Hunting), Fax. 8358747



LETTER OF NOTIFICATION

KPP0105/SH/LPPOM MUI/VII/2017

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

The Assessment Institute for Foods, Drugs, and Cosmetics, the Indonesian Council of Ulama (AIFDC-ICU) / (LP POM MUI), hereby declare that the mentioned products below :

Kind of Product	Vitamin, Mineral and Other Nutrient
Name of Product	Attached
Name of Company	DSM Nutritional Products Ltd

are on going process to renewal halal certificate (number of 00180055730810) which expired in March 31, 2017. This statement is valid for **three (3) months** and it is stated truthfully to be used properly.

Date of Issue : July 20, 2017

Jakarta, July 20, 2017

Dr. Lukmanul Hakim, Msi

Director

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Facility Name : **DSM NUTRITIONAL PRODUCTS UK LTD DALRY SITE**
Address : **DALRY AYRSHIRE**
KA24 5JJ SCOTLAND

No	Nama Produk
1	ASCORBIC ACID 0408050
2	ASCORBIC ACID FINE GRANULAR 0408093
3	ASCORBIC ACID ULTRA FINE POWDER 0408107
4	SODIUM ASCORBATE CRYSTALLINE 0408174
5	CALCIUM D-PANTOTHENATE 0412678
6	D-PANTHENOL 0413852
7	D-PANTHENOL 75 L 0416118
8	ASCORBIC ACID FINE POWDER 0422460
9	COATED ASCORBIC ACID TYPE EC 0425117
10	COATED ASCORBIC ACID TYPE FC 0440809
11	ETHYL PANTHENOL 0483575
12	SODIUM ASCORBATE 250 5006201
13	ASCORBIC ACID ULTRA FINE POWDER 5009766
14	DL PANTHENOL 50L 0480746

Jakarta, July 20, 2017

Dr. Lukmanul Hakim, Msi

Director

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