

Date: 23/03/2016

## STABILITY DATA

Product name: D-Calcium Pantothenate

### 1. The key figures to be monitored

No.	Items	Specifications
1	Appearance	White powder
2	Content of calcium	8.2%~8.6%
3	Special optical rotation	+25.5°~ +27.5°
4	Loss on drying	≤5.0%
5	Alkalinity	No pink color is produced within 5 seconds
6	β-Aminopropionic acid	≤1.0%
7	Nitrogen determination	5.7%~6.0%

### 2. Storage

Long-term Stability: The sample is put in stability testing chamber which has been set at the condition of relative humidity of  $60 \pm 5\%$  and temperature of  $25 \pm 2^\circ\text{C}$ .

### 3. Actual testing results

**CANAVIT**Canadian Feed Additives Inc.  
additifs d'alimentation canadiens inc.

Batch number: 2003021701

Date of testing	Appearance	Nitrogen determination, %	Content of calcium, %	Specific optical rotation (as dry basis), $[\alpha]_D^{20}, ^\circ$	$\beta$ -Aminopropionic acid, %	Loss on Drying, %	Alkalinity
0 month	White powder	5.86	8.36	+26.42	<1.0	2.25	Conforms
three months	White powder	5.77	8.41	+26.36	<1.0	2.36	Conforms
six months	White powder	5.87	8.37	+26.58	<1.0	2.32	Conforms
nine months	White powder	5.82	8.36	+26.53	<1.0	2.44	Conforms
twelve months	White powder	5.88	8.39	+26.24	<1.0	2.38	Conforms
eighteen months	White powder	5.76	8.42	+26.45	<1.0	2.52	Conforms
twenty-four months	White powder	5.81	8.44	+26.42	<1.0	2.58	Conforms
thirty-six months	White powder	5.78	8.38	+26.53	<1.0	2.75	Conforms
Forty-eight months	White powder	5.82	8.41	+26.48	<1.0	2.82	Conforms

**CANAVIT**Canadian Feed Additives Inc.  
additifs d'alimentation canadiens inc.

Batch number: 2003021702

Date of testing	Appearance	Nitrogen determination, %	Content of calcium, %	Specific optical rotation (as dry basis), $[\alpha]_D^{20}, ^\circ$	$\beta$ -Aminopropionic acid, %	Loss on Drying, %	Alkalinity
0 month	White powder	5.82	8.41	+26.28	<1.0	2.37	Conforms
three months	White powder	5.79	8.43	+26.33	<1.0	2.31	Conforms
six months	White powder	5.77	8.39	+26.51	<1.0	2.42	Conforms
nine months	White powder	5.82	8.46	+26.43	<1.0	2.44	Conforms
twelve months	White powder	5.76	8.39	+26.37	<1.0	2.52	Conforms
eighteen months	White powder	5.76	8.42	+26.45	<1.0	2.58	Conforms
twenty-four months	White powder	5.83	8.38	+26.32	<1.0	2.49	Conforms
thirty-six months	White powder	5.78	8.39	+26.36	<1.0	2.66	Conforms
Forty-eight months	White powder	5.80	8.38	+26.35	<1.0	2.76	Conforms

**CANAVIT**Canadian Feed Additives Inc.  
additifs d'alimentation canadiens inc.

Batch number: 2003021703

Date of testing	Appearance	Nitrogen determination, %	Content of calcium, %	Specific optical rotation (as dry basis), $[\alpha]_D^{20}, ^\circ$	$\beta$ -Aminopropionic acid, %	Loss on Drying, %	Alkalinity
0 month	White powder	5.83	8.35	+26.77	<1.0	2.57	Conforms
three months	White powder	5.76	8.37	+26.11	<1.0	2.48	Conforms
six months	White powder	5.77	8.31	+26.46	<1.0	2.17	Conforms
nine months	White powder	5.86	8.40	+26.53	<1.0	2.63	Conforms
twelve months	White powder	8.78	8.39	+26.13	<1.0	2.44	Conforms
eighteen months	White powder	5.77	8.34	+26.15	<1.0	2.75	Conforms
twenty-four months	White powder	5.83	8.43	+26.52	<1.0	2.48	Conforms
thirty-six months	White powder	5.82	8.41	+26.56	<1.0	2.45	Conforms
Forty-eight months	White powder	5.77	8.39	+26.68	<1.0	2.82	Conforms

Batch number: 11011301

Date of testing	Appearance	Nitrogen determination, %	Content of calcium, %	Specific optical rotation (as dry basis), $[\alpha]_D^{20}, ^\circ$	$\beta$ -Aminopropionic acid, %	Loss on Drying, %	Alkalinity	Residual solvent-methanol <sup>1</sup>
0 month	White powder	5.8	8.4	+26.8	<1.0	1.7	Conforms	0.08
three months	White powder	5.8	8.4	+26.4	<1.0	1.9	Conforms	Not detected
six months	White powder	5.8	8.4	+26.4	<1.0	1.8	Conforms	Not detected
nine months	White powder	5.8	8.4	+26.5	<1.0	1.8	Conforms	Not detected

<sup>1</sup> This item was later found to be required for our product in USP although it has not been required in the monograph.

twelve months	White powder	5.8	8.4	+26.6	<1.0	1.8	Conforms	Not detected
eighteen months	White powder	5.8	8.4	+26.5	<1.0	1.9	Conforms	Not detected
twenty-four months	White powder	5.8	8.4	+26.5	<1.0	1.8	Conforms	Not detected
thirty-six months	White powder	5.8	8.3	+26.2	<1.0	2.0	Conforms	Not detected

#### n. Physical-chemical interactions ( incompatibilities ) with other substances.

**No incompatibilities with other substances**