

## Certificate of Analysis

Product D-Calcium Pantothenate  
CAS No. 137-08-6  
M.F.  $C_{18}H_{32}CaN_2O_{10}$   
M.W. 476.53  
N.W. 2,250.00kg  
G.W. 2,550.00kg

Batch Number TNJ20140325002  
Packing 25.00kgfiber/Carton  
MFG Date Mar 25, 2014  
Analysis Date Mar 25, 2014  
Expiry Date Mar 24, 2014

Items	Specification	Results
Appearance	White powder	Confirms
Identification		
A: Infrared Absorption at 197K $\mu$	Complies with the reference spectrum	Confirms
B: A solution (1 in 20) responds to the tests for Calcium	Conforms to USP30	Confirms
Specific Optical Rotation	+25.0° ~ +27.5°	+26.81°
Alkalinity	no pink color is produced within 5 seconds	Confirms
Loss on drying, %	≤ 5.0	4.74
Heavy metals	≤ 0.002	Confirms
Ordinary impurities, %	≤ 1.0	Confirms
Organic volatile impurities, %	Meets the requirements	Confirms
Nitrogen content, %	5.70~6.0	5.70
Calcium, %	8.20~8.60	8.35
Assay, %	98.0~102.0	100.05

Checker Xu Dong Re-checker Lu Xiaoping Approval Liu Wu

Conclusion The Quality of the above said is in conformity with **USP30**  
COA Issuer Quality Control Team-Technology Department  
of Hefei TNJ Chemical Industry Co.,Ltd.



