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Certificate of Analysis

Product Name:	**Biotin Pure**
Molecular Formula:	**C10H16N2O3S**
CAS#	**58-85-5**
Molecular Weight:	***244.31***
Carrier:	***None***
Country of Origin:	**China**
Batch Number:	**CS1-2101008**
PureBulk Lot Number:	**20230127-05**
Manufacture Date:	**January 3, 2021**
Retest Date:	**January 2, 2024**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
Biotin (HPLC)	97.5-102%	100.65%
Arsenic	Report Only	<0.0100 ppm
Cadmium	Report Only	<0.00500 ppm
Lead	Report Only	<0.00500 ppm
Mercury	Report Only	<0.00500 ppm
Aerobic Plate Count	≤1000 cfu/g	Not Detected
Yeast & Mold	≤100 cfu/g	Not Detected
Coliforms	Negative	Not Detected
E. Coli	Negative	Absent
Salmonella	Negative	Absent
Staph aureus	Negative	Absent
Pseudo. aeruginosa	Negative	Absent
Conclusion (PureBulk):	This product conforms to standards	

The following information is an indirect translation of information provided from the Manufacturer's Certificate of Analysis, and should not be used solely as an instrument for strict quality control.

ITEMS	SPECIFICATIONS	RESULTS
Appearance	Practically white crystalline powder	Conforms
Solubility	Very slightly soluble in water and in alcohol; insoluble in other common organic solvents	Conforms
Identification A. Infrared Absorption	To match with the reference IR spectrum	Conforms
B. Specific Optical Rotation	Meet the requirements	Conforms
C. HPLC	The retention time of the major peak of the sample solution corresponds to that of the standard solution as obtained in the assay	Conforms
1. Individual Impurity	≤1.0%	0.05%
2. Total Impurity	≤2.0%	0.05%
Residual Solvents (Toluene)	≤890 ppm	<20 ppm
Optical Rotation	+89°-+93°	+90.4°
Conclusion (Manufacturer):	This product conforms to USP41 standards	
Sterilization Method:	Non-Irradiated ‖ Non-EtO	
GMO Statement	Non-GMO	
Storage Conditions:	**Keep in sealed container under 25°C. Keep away from strong light, heat and moisture.**	

Purebulk.Inc verifies that the information contained herein is true and correct to the best of our knowledge.

Verified By: Candace Gibson / Nicole Rammage

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Product Name:	**Folic Acid**
CAS No.:	**59-30-3**
Molecular Formula:	**C19H19N7O6**
Molecular Weight:	**441.40**
Residual Solvents:	**Meets USP/NF Requirements**
Country of Origin:	**China**
Batch Number:	**04210114**
PureBulk Lot Number:	**20230214-09**
Manufacture Date:	**December 29, 2020**
Retest Date:	**January 29, 2026**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
Folic Acid (HPLC)	97-102%	99.50%
Loss on Drying (USP<731>)	≤8.5%	6.40%
Aerobic Plate Count	≤250 cfu/g	<20 cfu/g
Coliforms	≤100 cfu/g	<20 cfu/g
E. Coli	Negative	Absent
Staph *aureus*	Negative	Absent
Yeast & Mold	≤100 cfu/g	<20 cfu/g
Salmonella	Negative/25g	Absent
Pseudo. aeruginosa	Negative	Absent
Conclusion (PureBulk):	This product conforms to standards	

The following information is an indirect translation of information provided from the Manufacturer's Certificate of Analysis, and should not be used solely as an instrument for strict quality control.

ITEMS	SPECIFICATIONS	RESULTS
Appearance	Yellow or orange crystalline powder	Conforms
Odor	Practically odorless	Conforms
Identification	Positive	Conforms
Residue on Ignition	≤0.3%	0.24%
Impurities	≤2.0	<2.0
Heavy Metals (Pb)	≤10 mg/kg	<10
As	≤2.0 mg/kg	<2.0 mg/kg
Conclusion (Manufacturer):	This product conforms to USP42 standards	

Additional Information:	Allergen Free ‖ Vegan ‖ BSE/TSE Free
Source:	Chemical synthesis utilizing 1,1,3-Trichloro-acetone, 2,5,4-tridiamino-6-hydroxy-Pyrimidine sulfate and NP Amino Benzoyl Glutamic Acid cyclization reaction.
GMO Statement:	Non-GMO
Composition:	Folic Acid (On anhydrous basis) ≥96% Water ≤8.5% Ash ≤0.2%
Storage Conditions:	**Keep in sealed container under 25°C.** **Keep away from strong light, heat and moisture.**

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Product Name:	**Pyridoxal-5-Phosphate**
Country of Origin:	**China**
Batch Number:	**C042106808**
PureBulk Lot Number:	**20220913-05**
Manufacture Date:	**June 13, 2021**
Retest Date:	**February 7, 2025**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
Pyridoxal-5-Phosphate (HPLC)	98.5-101%	100.96% (d.b.)
Loss on Drying (LOD) (USP<731>)	≤10%	1.59%
Aerobic Plate Count	≤1000 cfu/g	Not Detected
Yeast & Mold	≤100 cfu/g	Not Detected
Coliforms	Negative	Not Detected
E. Coli	Negative	Absent
Salmonella	Negative	Absent
Staph aureus	Negative	Absent
Pseudo. aeruginosa	Negative	Absent
Conclusion (PureBulk):	This product conforms to standards	

The following information is an indirect translation of information provided from the Manufacturer's Certificate of Analysis, and should not be used solely as an instrument for strict quality control.

ITEMS	SPECIFICATIONS	RESULTS
Description	Slightly yellow or off-white powder	Conforms
Identification	The retention time of the major peak of product corresponds to that of the standard	Conforms
Solubility	Very slightly soluble in water, soluble in alkali-OH Soln.	Conforms
Melting Point	140~145°C	143°C
Heavy Metals	≤10 ppm	<10 ppm
Cadmium (Cd)	≤0.5 ppm	<0.01 ppm
Arsenic (As)	≤1.5 ppm	<0.040 ppm
Lead (Pb)	≤0.5 ppm	<0.1 ppm
Mercury (Hg)	≤0.1 ppm	<0.010 ppm
pH (in 0.25% water)	2.6~3.0	2.7
Particle Size (Mesh)	90% through 30 mesh	Conforms
B6 Free Vitamin B6	≤0.05%	0.02%
Bulk Density	-	0.38 g/ml
Tapped Density	-	0.74 g/ml
Residual Solvents	Complies to USP38	Conforms
Toluene	≤890 ppm	Not Detected
Ethanol	≤5000 ppm	48 ppm
Conclusion (Manufacturer):	This product conforms to enterprise standards	
GMO Statement	Non-GMO	
Storage Conditions:	**Keep in sealed container under 25°C.**	
	Keep away from strong light, heat and moisture.	

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Product Name:	**Riboflavin-5-Phosphate**
CAS#	**130-40-5**
Country of Origin:	**India**
Batch Number:	**RPS/033/2020**
PureBulk Lot Number:	**20220310-10, 20220107-08**
Manufacture Date:	**May 1, 2020**
Retest Date:	**November 8, 2024**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
Vitamin B2 (Riboflavin-5-Phosphate) (HPLC)	Report Only	99.25% (as is)
Riboflavin (Calculated)	73.0-79.0%	78.92%
Riboflavin (HPLC) (Free Form)	≤6%	1.86% (as is)
Moisture Content (LOD)	<7.5%	2.27%
Aerobic Plate Count	≤1000 cfu/g	<20 cfu/g
Yeast & Mold	≤100 cfu/g	<20 cfu/g
Coliforms	Absent	<20 cfu/g
E. Coli	Absent	Absent
Salmonella	Absent	Absent
Staph aureus	Absent	Absent
Pseudo. aeruginosa	Absent	Absent
Conclusion (PureBulk):	This product conforms to standards	

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ITEMS	SPECIFICATIONS	RESULTS
Description	Orange-yellow crystalline powder, hygroscopic	Conforms
Odor	Slight	Conforms
Solubility	Sparingly soluble in water	Conforms
Identification		
A. Fluorescence Test	The solution is pale greenish yellow by transmitted light; and it exhibits an intense yellowish green fluorescence under long wavelength UV light that disappears upon the addition of mineral acids or alkalies	Conforms
B. Reactions of Sodium Salt & Phosphates	The filtrate gives reaction of sodium and reaction of phosphate	Conforms
pH of 1% Solution	5.0-6.5	5.98
Specific Optical Rotation	+37.0° to +42.0°	+40.23°
Lumiflavine Limit	Absorbance is not more than 0.025	0.012
Related Stubstances (HPLC)		
1. Riboflavin Diphosphate	Not greater than 6.0%	1.73%
Free Phosphate	≤1.0% as PO_4	0.46%
Residue on Ignition	≤25%	14.08%
Residual Solvents by GC (In house GC method)		
i) Methanol	≤3000 ppm	Not Detected
ii) Acetonitrile	≤410 ppm	Not Detected
iii) Benzene	≤2 ppm	Not Detected
iv) Pyridine	≤200 ppm	Not Detected
Conclusion (Manufacturer):	This product conforms to USP39 standards	
Storage Conditions:	**Keep in sealed container under 25°C. Keep away from strong light, heat and moisture.**	

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Product Name:	**D-Calcium Pantothenate**
Extraction Solvent(s):	***Methanol, Ethyl Acetate***
Country of Origin:	**China**
Batch Number:	**201116N02**
PureBulk Lot Number:	**20220222-10**
Manufacture Date:	**November 16, 2020**
Retest Date:	**March 1, 2024**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
D-Calcium Pantothenate (HPLC)	98-102%	99.19% (d.b.)
Identification (USP)	To Pass	Conforms
Pantothenic Acid (HPLC)	Report Only	90.463%
Calcium (Ca)	8.2-8.6%	8.527%
Moisture Content (LOD)	<5.0%	4.17%
Aerobic Plate Count	<1000 cfu/g	40 cfu/g
Yeast & Mold	<100 cfu/g	Not Detected
Coliforms	Negative	Not Detected
E. Coli	Negative	Absent
Salmonella	Negative	Absent
Staph aureus	Negative	Absent
Pseudo. aeruginosa	Negative	Absent
Conclusion (PureBulk):	This product conforms to standards	

The following information is an indirect translation of information provided from the Manufacturer's Certificate of Analysis, and should not be used solely as an instrument for strict quality control.

ITEMS	SPECIFICATIONS	RESULTS
Appearance	White powder	Conforms
Specific Optical Rotation	+25.0° ~ +27.5°	+26.7°
Alkalinity	No pink color is produced within 5 seconds	Conforms
Loss on Drying	≤5.0%	4.2%
Content of Calcium	8.2~8.6%	8.32%
Nitrogen Determination	5.7~6.0%	5.71%
Ordinary Impurities (TLC)	≤1.0%	Conforms
Methanol Residue (GC)	≤0.3%	Conforms
Heavy Metals (colorimetry)	≤20 ppm	Conforms
Pb	≤2 ppm	Conforms
Cd	≤1 ppm	Conforms
Hg	≤0.1 ppm	Conforms
As	≤2 ppm	Conforms
GMO Statement	Non-GMO	
Storage Conditions:	**Keep in sealed container under 25°C. Keep away from strong light, heat and moisture.**	

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Product Name:	**Thiamine Mononitrate**
Country of Origin:	**China**
Batch Number:	**210301Y032**
PureBulk Lot Number:	**20220722-06**
Manufacture Date:	**March 1, 2021**
Retest Date:	**April 18, 2025**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
Thiamine Mononitrate (HPLC)	≥98%	98.39%
Aerobic Plate Count	≤1000 cfu/g	Not Detected
Yeast & Mold	≤100 cfu/g	Not Detected
Coliforms	Negative	Not Detected
E. Coli	Negative/25g	Absent
Salmonella	Negative/25g	Absent
Staph aureus	Negative/25g	Absent
Pseudo. aeruginosa	Negative	Absent
Conclusion (PureBulk):	This product conforms to standards	

The following information is an indirect translation of information provided from the Manufacturer's Certificate of Analysis, and should not be used solely as an instrument for strict quality control.

ITEMS	SPECIFICATIONS	RESULTS
Appearance	White or almost white, crystalline powder or small, colorless crystals\	Conforms
Identification		
A: A brown ring is produced at the junction of the sample solution (20mg/ml) and ferrous sulfate	Conform to USP40	Conforms
B: Positive Reaction	Conform to USP40	Conforms
C: Positive Reaction	Conform to USP40	Conforms
D: Positive Reaction	Conform to USP40	Conforms
Residue on Ignition	≤0.2%	0.10%
Loss on Drying	≤1.0%	0.2%
Related Compounds	≤1%	Conforms
Chloride and Sulfate	≤0.06%	Conforms
pH	6.0-7.5	7.2
Heavy Metals (colorimetry)	≤20 ppm	Conforms
Pb	≤10 ppm	Conforms
Cd	≤1 ppm	Conforms
Hg	≤0.1 ppm	Conforms
As	≤3 ppm	Conforms
Conclusion (Manufacturer):	This product conforms to USP40 standards	

Storage Conditions: **Keep in sealed container under 25°C. Keep away from strong light, heat and moisture.**

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