



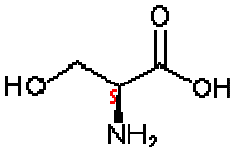
HANGZHOU DINGYAN CHEM CO.,LTD

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## CERTIFICATE OF ANALYSIS

NO: DYC041801092

Product name	D-Serine
CAS Number	312-84-5
Molecule Structure	
Molecule Formula	C3H7NO3
Batch number	20180105
Manuf&Exp. Date	2018-01-05;2020-01-04
Testing date	2018-01-06

Items	Standard	Result
Appearance	White crystals or crystalline powder	Complies
State of solution	95.0%min	99.0%
Specific rotation [ $\alpha$ ]D20	-13.5° ~ -16.0°	-15.1°
Chloride(Cl)	0.20% max	0.20% max
Ammonium(NH4)	0.20% max	0.20% max
Sulfate(SO4)	0.20% max	0.20% max
Iron(Fe)	10ppm max	10ppm max
Heavy metals(Pb)	10ppm max	10ppm max
Arsenic(As203)	1ppm max	1ppm max
Other Amino acids	0.50% max	0.50% max
Loss on drying	0.50% max	0.16%
Residue on ignition	0.20% max	0.06%
Assay	98.5~100.5%	99.3%
PH	5.2~6.2	5.8

Hangzhou Dingyan Chem Co., Ltd.  
QUALITY CONTROL: Cristina  
Quality Control  
Signature(s)

CHECK: 姚仙娟

INSPECTOR: 刘清风