

## Certificate of Analysis

Date of Testing: 2023-12-15 11:34:43  
Date of Next Testing: 2027-12-14 11:34:43  
Product Name: **(S)-1,2-Butanediol**  
CAS Number: 73522-17-5  
Specifications & Purity: >98.0%(GC)  
Lot #: L2313445  
SKU #: **S161003**  
Analysis: **294222**

Parameter	Limit Values	Result
Specific Rotation [α] <sub>20</sub> /D(c=3 in EtOH)	-18~-13 (°)	-15.66°
Refractive index n <sub>20</sub> /D	1.436-1.44	1.44
Purity(GC)	98-100 (%)	98.06 %
Appearance (S161003)	Colorless to light yellow liquid	Colorless to light yellow liquid
Proton NMR spectrum	Conforms to Structure	Conforms to Structure



John Su  
QA & QC Manager