

Certificate of Analysis

Date of Testing: 2023-08-09 14:00:09

Date of Next Testing: 2027-08-08 14:00:09

Product Name: (S,S)-(+)-2,3-Butanediol

CAS Number: 19132-06-0

Specifications & Purity: >97.0%(GC)

Lot #: G2327038

SKU #: S160997

Analysis: 096503

Storage Temperature: Argon charged

Parameter	Limit Values	Result
Purity(GC)	97-100 (%)	99.34 %
Refractive index n _{20/D}	1.43-1.434	1.43
Specific Rotation [α] _{20/D} (c=Neat)	12-14 (°)	12.43°
Appearance (S160997)	Colorless to light yellow liquid	Colorless to light yellow liquid
Proton NMR spectrum	Conforms to Structure	Conforms to Structure



John Su
QA & QC Manager