

Certificate of Analysis

1,3-Butanediol

PurCert Standard for GC

(Secondary Reference Standard)

Product Number	PSR40424	CAS No.	107-88-0
Brand	PureSynth	Lot No.	ANA03B
Molecular Formula	C ₄ H ₁₀ O ₂	Date of Mfg.	May.2023
Molecular Weight	90.12 g/mol	Date of Exp.	April.2027

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Assay (GC-FID)	≥ 99.5 %	99.98 %
Water (By KF)	NMT 0.3000 %	0.2962 %
Identification by ¹ H NMR	Conforms to structure	Conforms
Identification by GC-MS	Conforms to molecular mass	Conforms
Identification by IR	Conforms to structure	Conforms

***Traceable to USP Reference Standard 1082956, Lot no: R175E0**

Storage Condition: Store at room temperature and keep the container tightly closed.

Remark: The batch complies with the prescribed quality of the above specification.

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Worldwide Helpline No. 1800-120-1234-34 , Email: info@pure-synth.com , Website: www.pure-synth.com

Assay by GC-FID

METHOD: GC- FID conditions:

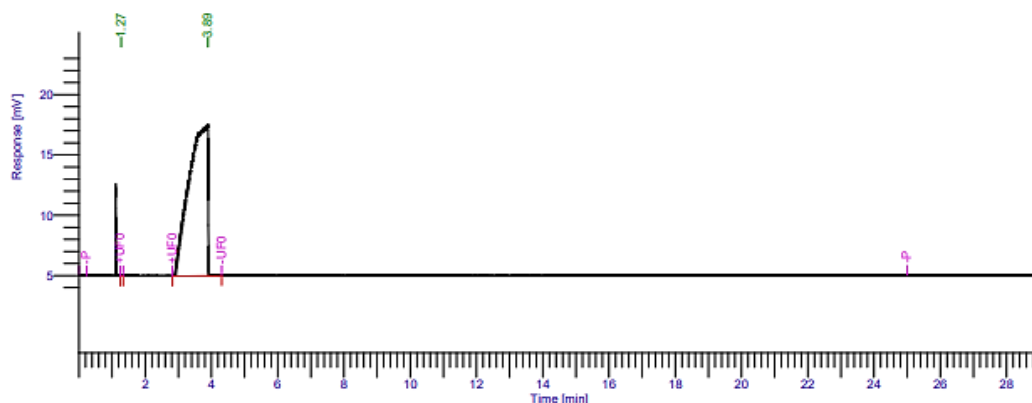
Column: Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

Instrument: PerkinElmer, GC 2014,

Detector: FID, **Carrier gas:** Nitrogen

Temp programming: Initial 50°C hold for 1min, 5°C Ramp/ min., 100 °C hold for 1 min., 25°C Ramp up to 250°C hold for 2 min., Run time 20 min.

Software Version	: 6.3.4.0700	Date	: 02/06/2023 5.04.06 PM
Operator	: manager	Sample Name	: AR23000298-1_3-BUTANEDIOL- A
Sample Number	: 1		NA03B
AutoSampler	: BUILT-IN	Study	: GC Purity
Instrument Name	: Clarus 680	Rack/Vial	: 0/15
Instrument Serial #	: None	Channel	: A
Delay Time	: 0.00 min	A/D mV Range	: 1000
Sampling Rate	: 12.5000 pts/s	End Time	: 29.00 min
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 02/06/2023 3.56.37 PM	Dilution Factor	: 1.00
		Cycle	: 1



GC Reports

02/06/2023 5.04.06 PM Result:

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		1.273	111.98	127.35	0.02
2		3.895	503242.61	12518.99	99.98
			503354.59	12646.33	100.00

Missing Component Report
Component Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 99.98 %

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IDENTIFICATION TESTS

GC-MS Spectrum:

METHOD: GC-MS conditions:

Column: Agilent Technologies, Elite -5MS, 30 m X 0.25 mm, 1.0micron

Instrument: Perkin Elmer, Carrier gas: Helium

Source Temp.: 230°C, Transfer line: 250°C

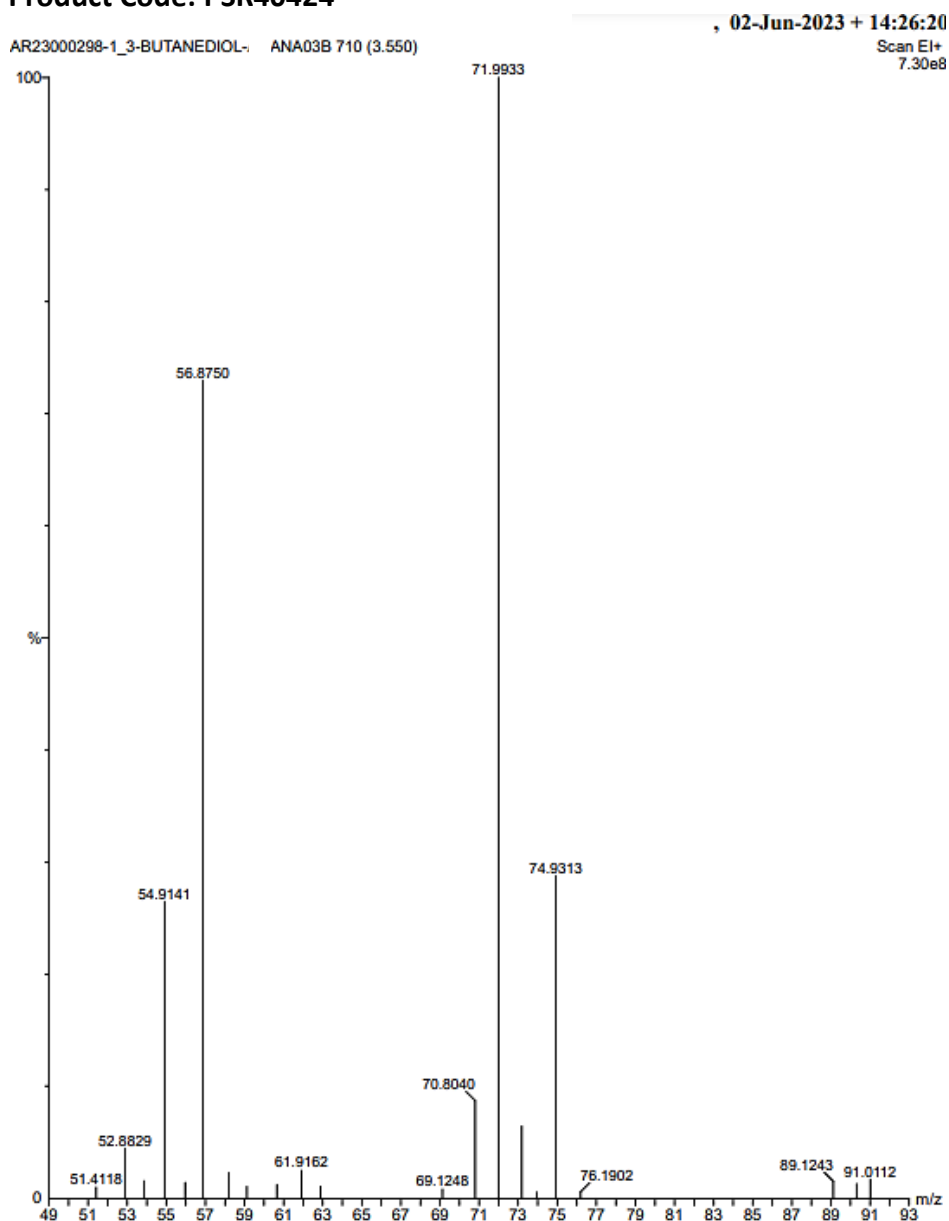
Inlet Temp.: 180°C, Diluent: Methanol

Source energy: 70eV

Mass by GC-MS:

Product Name: **1,3-Butanediol**

Product Code: **PSR40424**



Identification by GC-MS: Conforms to molecular mass

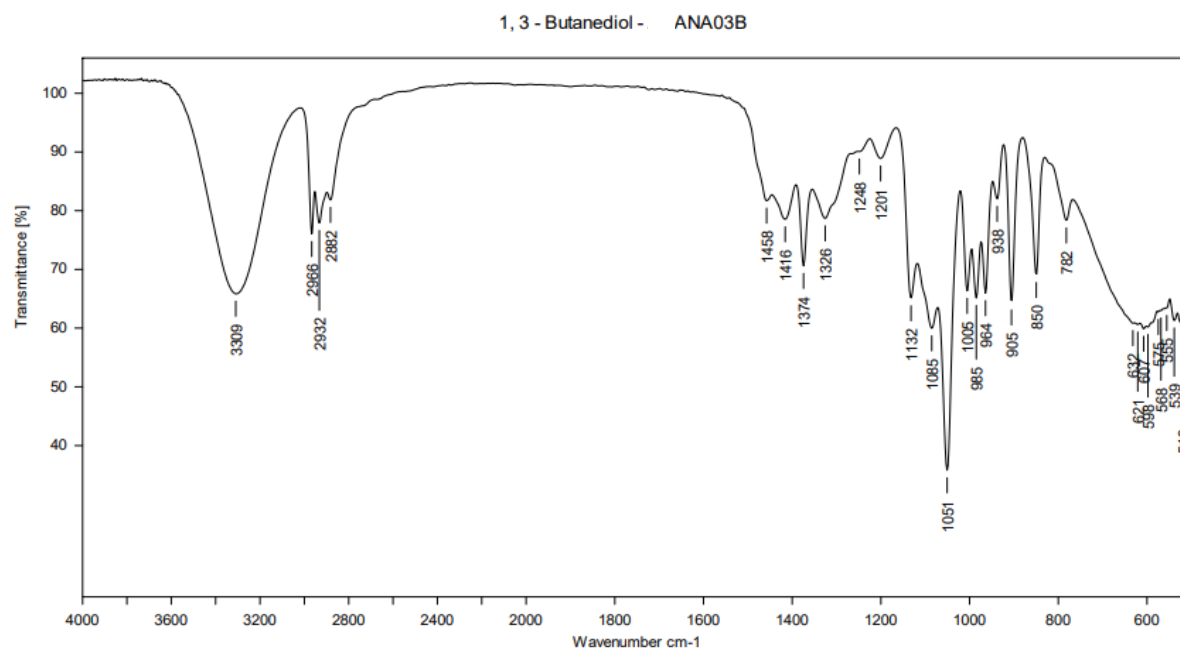
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Infrared spectrum:

Product Name: 1,3-Butanediol

Product Code: PSR40424



Experiment ATR_ZnSe1.XPM

Operator Name Admin

Instrument Type Alpha II

Resolution 4

Path of File C:\PRL

Date of Measurement 06-06-2023

Sample Form Liquid

Sample Scans 32

Identification by IR: Conforms to structure

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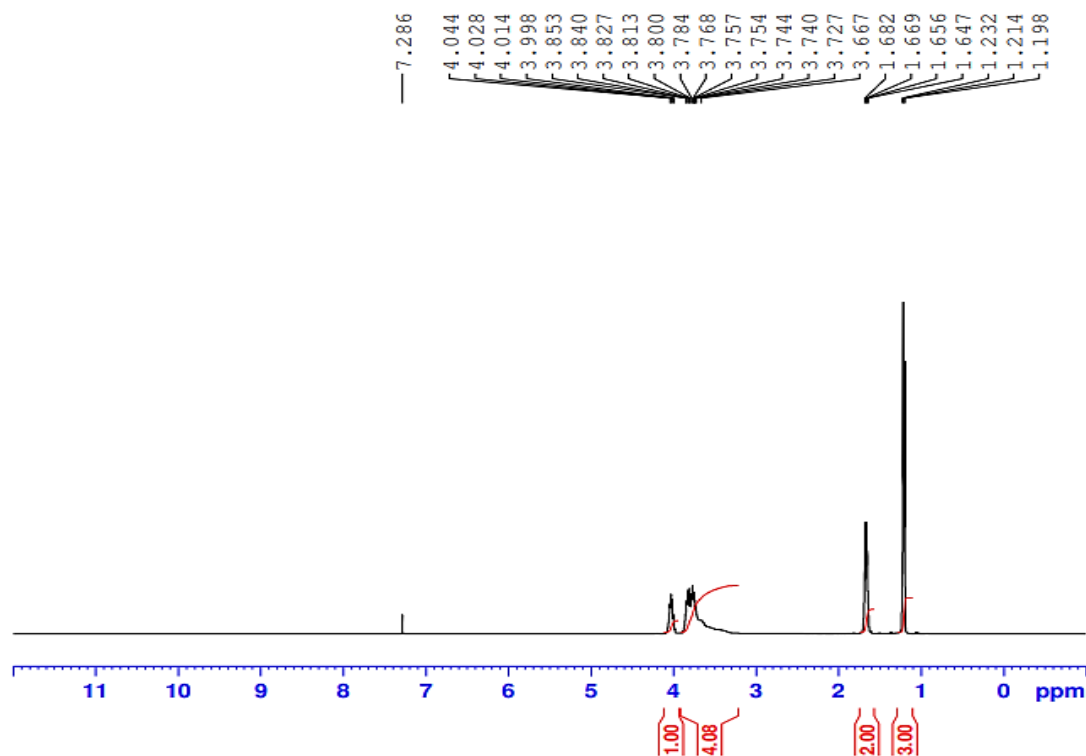
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¹H NMR Spectrum:

Product Name: 1,3-Butanediol

Product Code: PSR40424

1,3-Butanediol
Batch no- ANA03B
1H-NMR in CDCL3



Identification by ¹H NMR: Conforms to structure

Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSR40424) = **0.2962 %**

Approved By
Head - Technical

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