

Certificate of Analysis

Ethylene glycol

PurTech Standard for GC

(Secondary Reference Standard)

Product Number	PSI036	CAS No.	107-21-1
Brand	PureSynth	Lot No.	8281P0324
Molecular Formula	C ₂ H ₆ O ₂	Date of Mfg.	March,2024
Molecular Weight	62.07 g/mol	Date of Exp.	February,2027

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Assay (GC-FID)	≥ 99.5 %	99.79 %
Water (By KF)	NMT 0.300 %	0.207 %
Density	-	1.113 g/cm ³
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, Lot No: R093Q0.**

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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Assay by GC-FID

METHOD: GC- FID conditions:

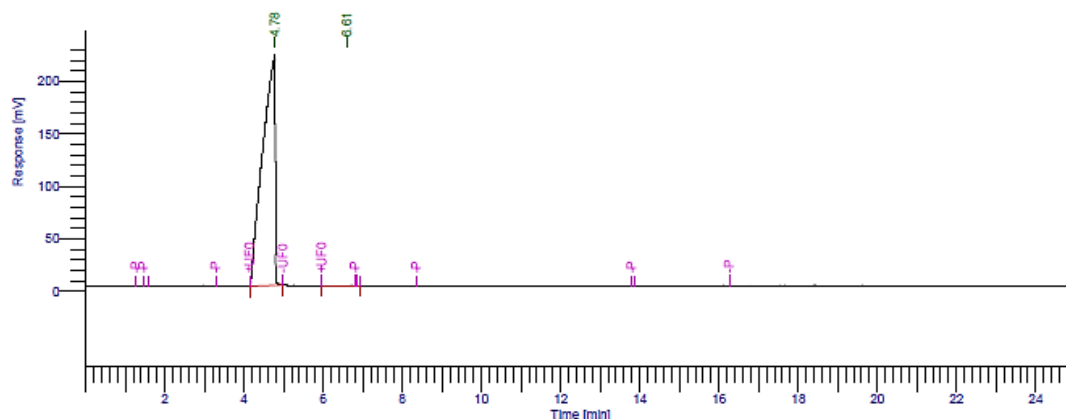
Column: Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

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	: 29-04-2024 10:26:55
Operator	: manager	Sample Name	: Ethylene Glycol
Sample Number	: 001	Study	:
AutoSampler	: BUILT-IN	Rack/Vial	: 0/8
Instrument Name	: Clarus 690	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 25.00 min
Sampling Rate	: 12.5000 pts/s		
Sample Volume	: 1.000000 ul	Area Reject	: 0.000000
Sample Amount	: 1.0000	Dilution Factor	: 1.00
Data Acquisition Time	: 27-04-2024 14:09:13	Cycle	: 1



GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		4.780	4729321.20	219533.31	99.79
2		6.605	9737.21	313.37	0.21
		4739058.41	219846.68	100.00	

Missing Component Report

Component Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 99.79 %

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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:

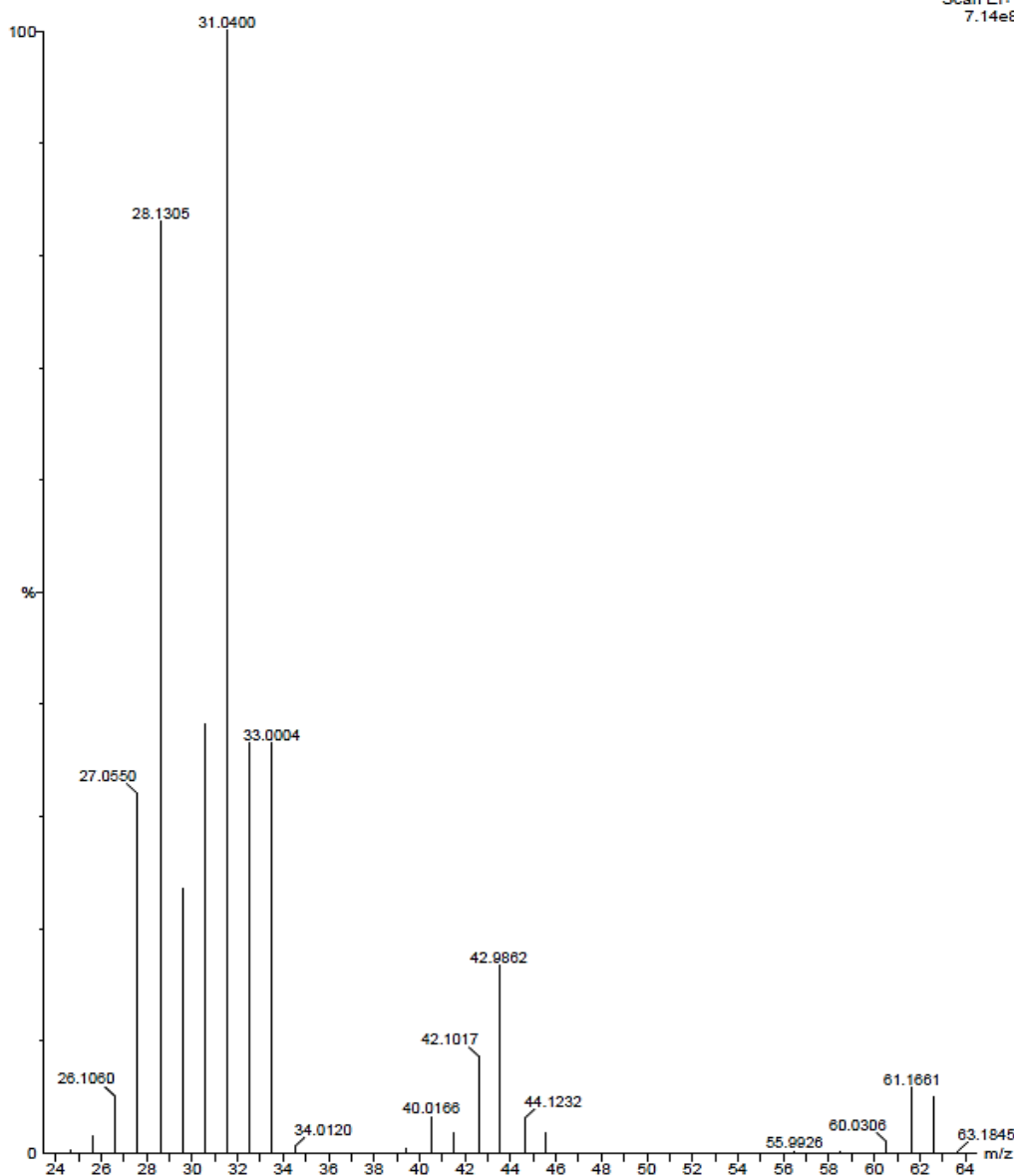
Product Name: Ethylene glycol

Product Code: PSI036

Ethylene glycol- 8281P0324

, 27-Apr-2024 + 01:24:02

Scan El+
7.14e8



Identification by GC-MS: Conforms to molecular mass

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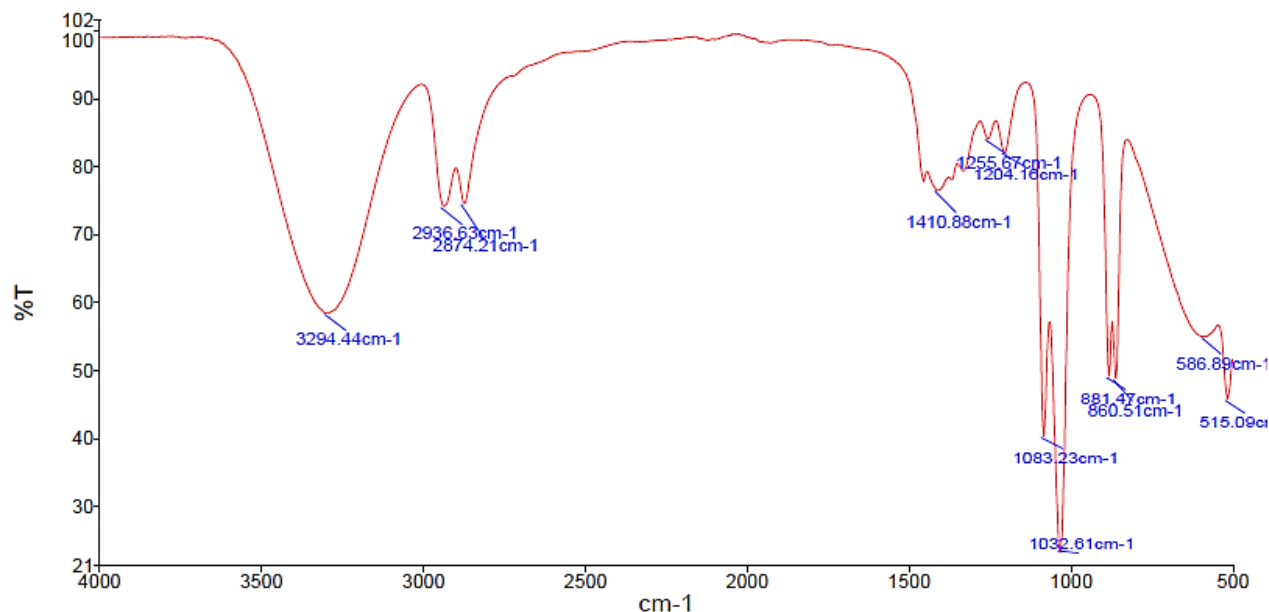
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Infrared spectrum:

Product Name: Ethylene glycol

Product Code: PSI036

Analyst
Date



AR24000228-ETHYLENE GLYCOL- 8281P0324_1 Sample 007 By Analyst Date Saturday, April 27 2024

Source Spectra Results		
Spectrum Name		Number Of Peaks
AR24000228-ETHYLENE GLYCOL_8281P0324_1		12
List of Peak Area/Height		
Peak Number	X (cm-1)	Y (%T)
1	3294.44	58.46
2	2936.63	74.21
3	2874.21	74.65
4	1410.88	76.59
5	1255.67	84.19
6	1204.16	82.17
7	1083.23	40.35
8	1032.61	23.18
9	881.47	49.17
10	860.51	48.84
11	586.89	55.00
12	515.09	45.81

Identification by IR: Conforms to structure

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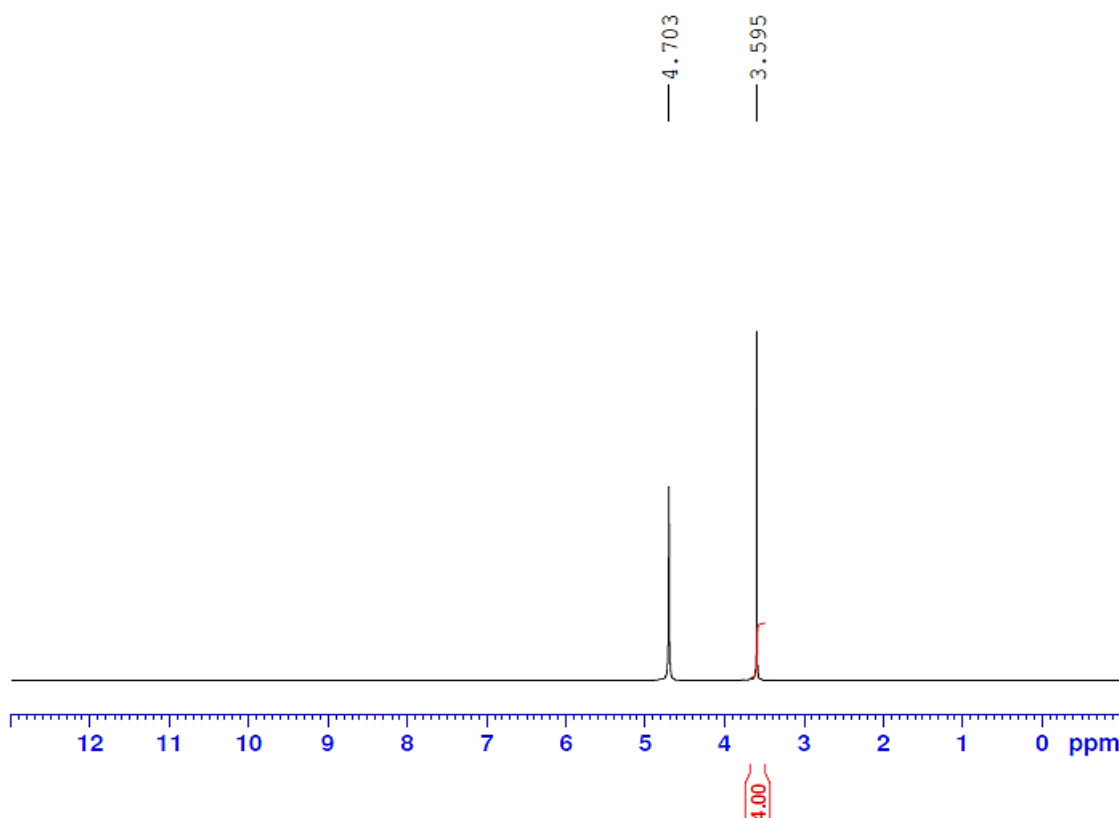
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¹H NMR Spectrum:

Product Name: Ethylene glycol

Product Code: PSI036

Ethylene Glycol
Batch No: 8281P0324
1H-NMR in D2O



Identification by ¹H NMR: Conforms to structure

Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSI036) = **0.207 %**

Approved By
Head - Technical

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