

Certificate of Analysis

Propylene glycol

PurTech Standard for GC
(Secondary Reference Standard)

Product Number	PSI074	CAS No.	57-55-6
Brand	PureSynth	Lot No.	KO05SP
Molecular Formula	C ₃ H ₈ O ₂	Date of Mfg.	May,2021
Molecular Weight	76.09 g/mol	Date of Exp.	April,2025

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Clarity	Clear	Clear
Assay (GC-FID)	≥99.0%	99.27%
Water (by KF)	≤0.1%	0.078 %
Identification by ¹ H NMR	Conform to structure	Conforms
Identification by GC-MS	Conform to molecular	Conforms
Identification by IR	Conform to structure	Conforms

***Traceable to USP Reference standard 1576708, Lot No: R081G0**

Storage Condition: Store at ambient temperature and keep container tightly closed in a dry and well-Ventilated place.

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

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Assay by GC-FID

METHOD: G.C- FID conditions:

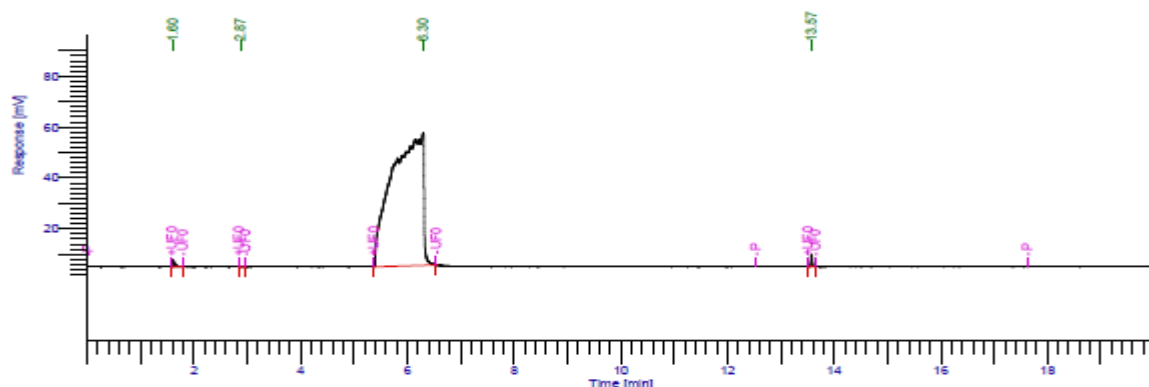
Column: Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

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	: 03-07-2021 4.43.40 PM
Operator	: manager	Sample Name	: AR21000380_1-PROPYLENE GLYCO
Sample Number	: 1		L- KO05SP
AutoSampler	: BUILT-IN	Study	: GC Purity
Instrument Name	: Clarus 680	Rack/Vial	: 0/5
Instrument Serial #	: None	Channel	: A
Delay Time	: 0.00 min	A/D mV Range	: 1000
Sampling Rate	: 12.5000 pts/s	End Time	: 20.00 min
Sample Volume	: 1.000000 ul	Area Reject	: 0.000000
Sample Amount	: 1.0000	Dilution Factor	: 1.00
Data Acquisition Time	: 03-07-2021 9.58.55 AM	Cycle	: 1



GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		1.604	7190.70	2891.27	0.34
2		2.869	437.13	131.94	0.02
3		6.299	2105199.10	52032.20	99.27
4		13.575	7947.47	4884.04	0.37
			2120774.40	59939.45	100.00

Missing Component Report

Component Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 99.27 %

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IDENTIFICATION TESTS

GC-MS Spectrum:

METHOD: G.C-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

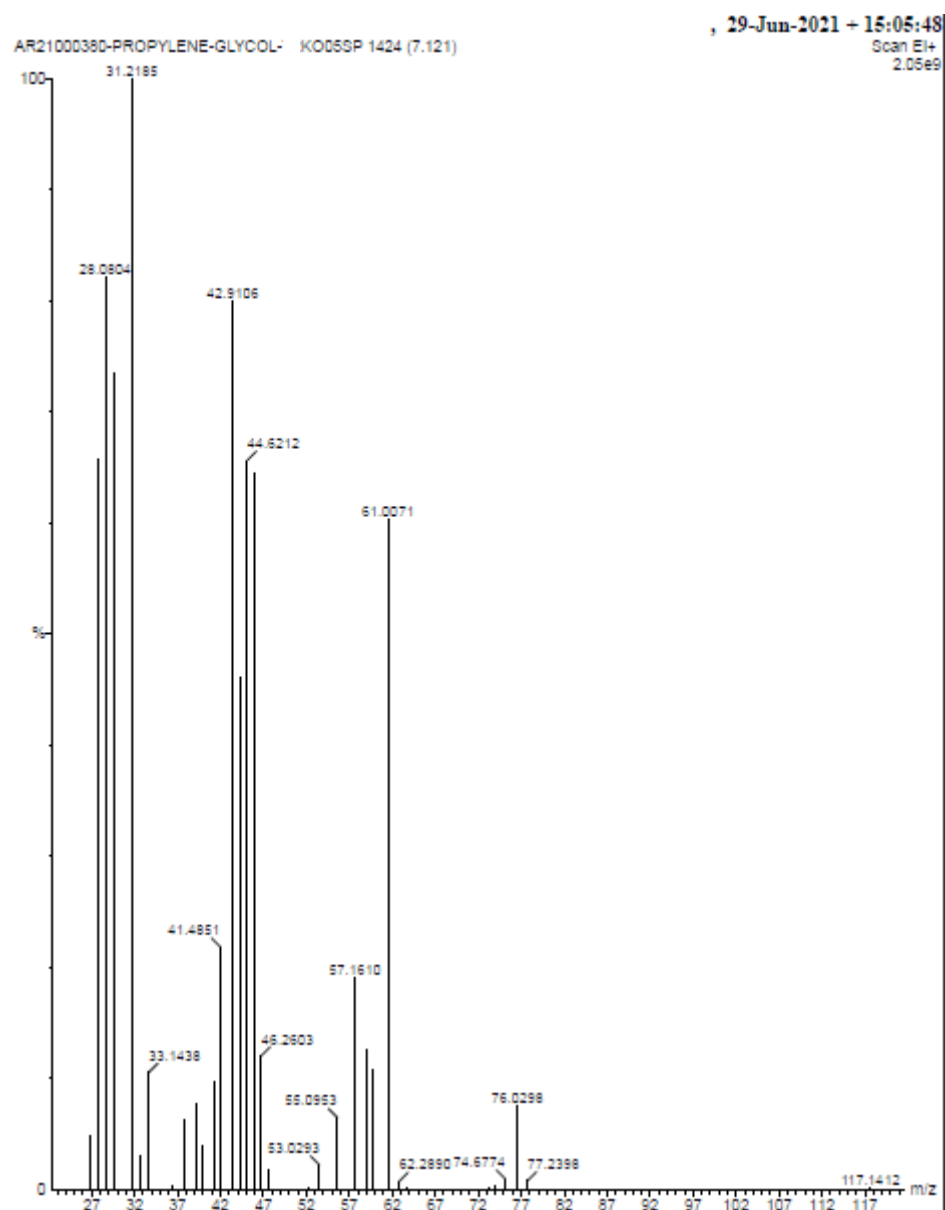
Inlet Temp.: 180°C, **Diluent:** Methanol

Source energy: 70eV

Mass by GC-MS:

Product Name: Propylene glycol

Product Code: PSI074



Identification by GC-MS: Conform to molecular

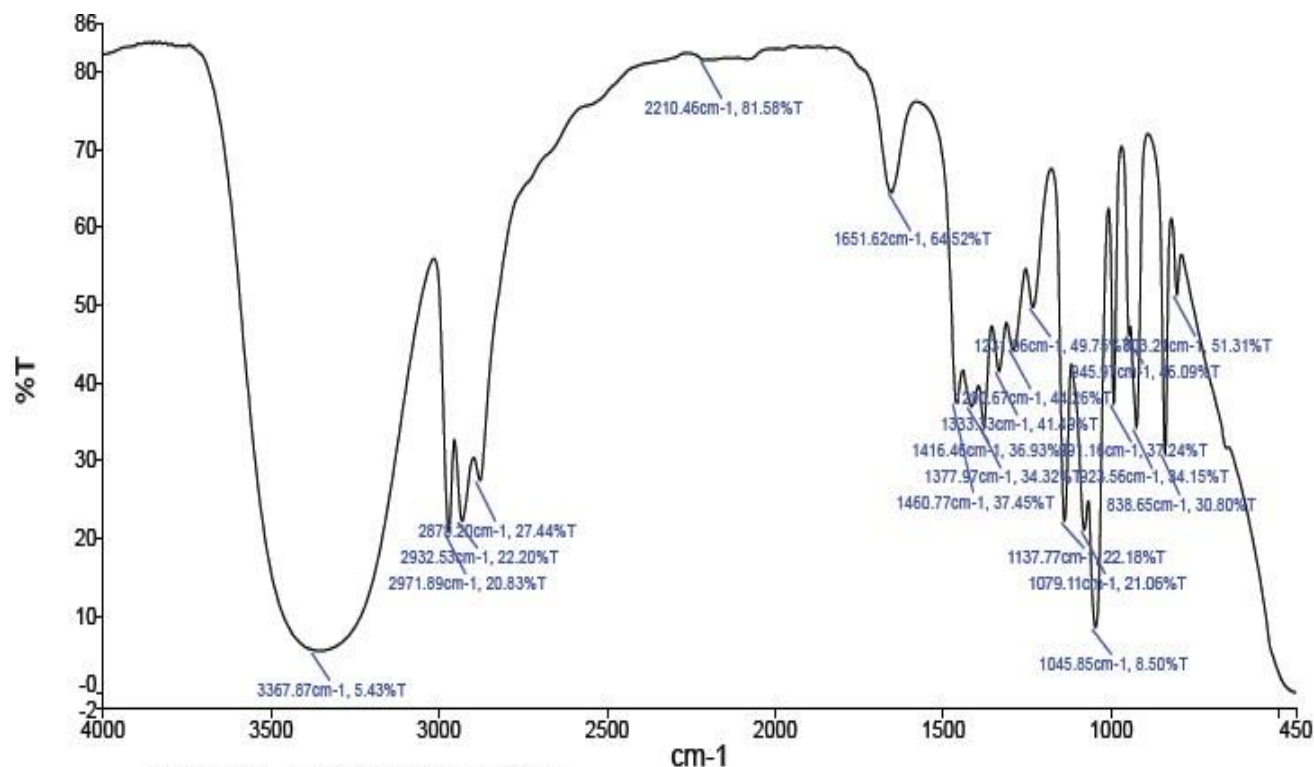
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Infrared spectrum:

Product Name: Propylene glycol

Product Code: PSI074



Propylene glycol B No. KO05SP AR No.QLE210140

Source Spectra Results

Spectrum Name	Number Of Peaks
Propylene glycol	20

List of Peak Area/Height

Peak Number	X (cm-1)	Y (%T)
1	3367.87	5.43
2	2971.89	20.83
3	2932.53	22.20
4	2879.20	27.44
5	2210.46	81.58
6	1651.62	64.52
7	1460.77	37.45
8	1416.46	36.93
9	1377.97	34.32
10	1333.33	41.49
11	1290.67	44.26
12	1231.96	49.75
13	1137.77	22.18
14	1079.11	21.06
15	1045.85	8.50
16	991.16	37.24
17	945.97	46.09
18	923.56	34.15
19	838.65	30.80
20	803.21	51.31

Identification by IR: Conform to structure

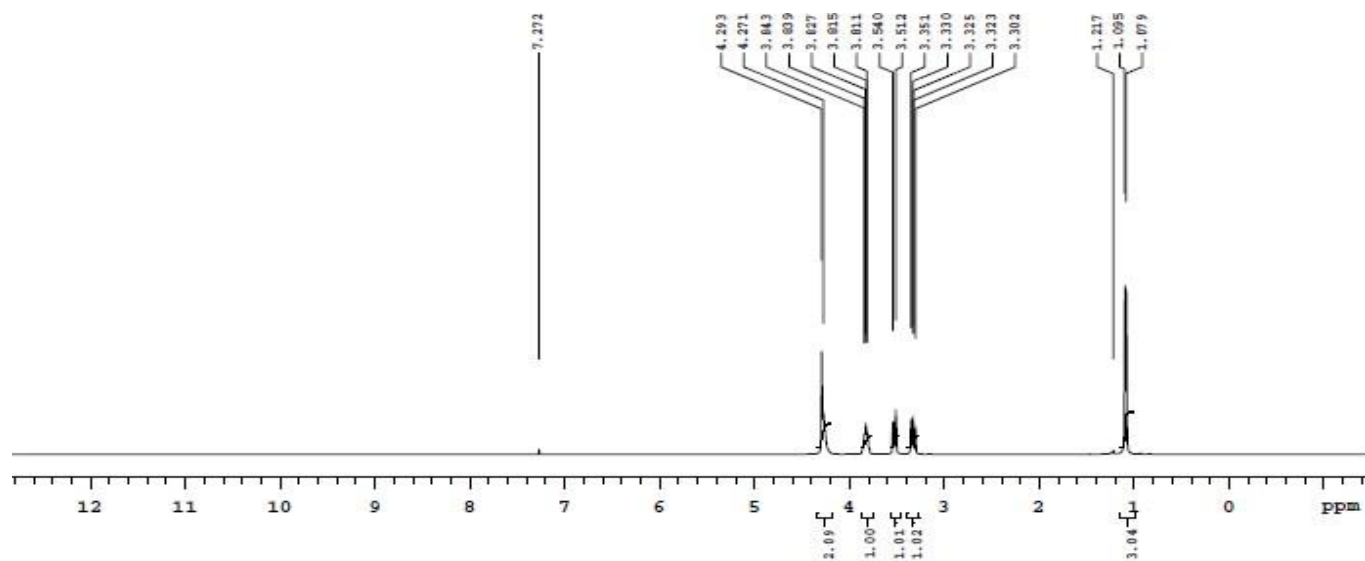
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¹H NMR Spectrum:

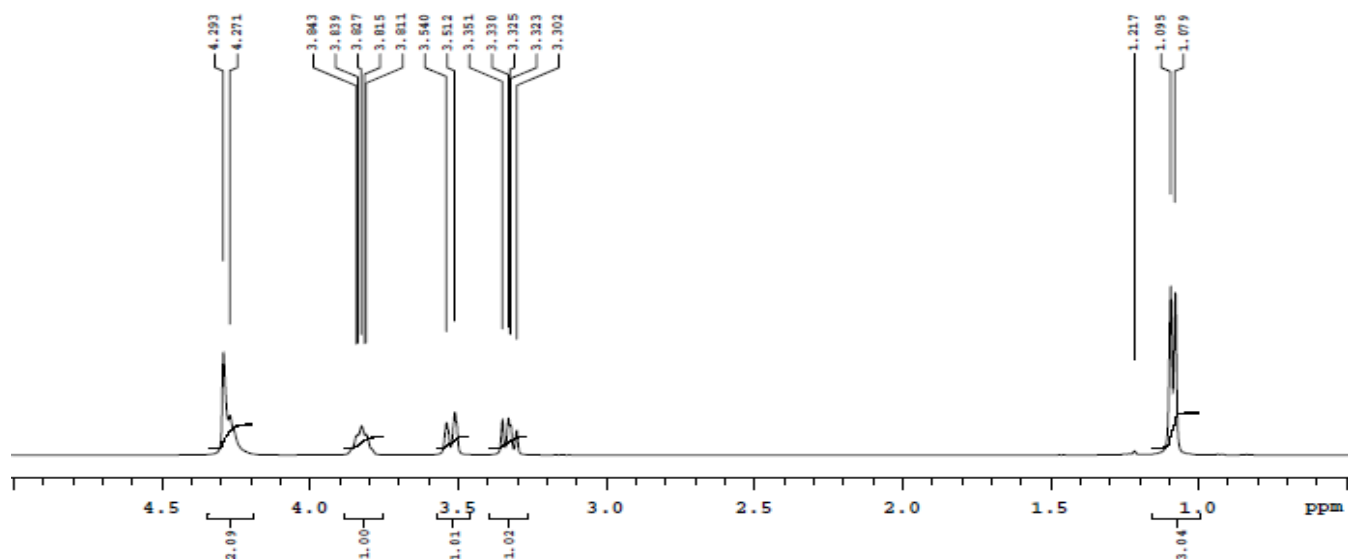
Product Name: Propylene glycol

Product Code: PSI074



PULSE SEQUENCE Relax. delay 2.000 sec Pulse 45.0 degrees Acq. time 3.408 sec Width 9615.4 Hz 8 repetitions	OBSERVE E1, 399.8212849	DATA PROCESSING Line broadening 1.0 Hz FT size 65536 Total time 1 minute	PropyleneGlycol-1H E0058P Solvent: cdcl3 Ambient temperature Operator: vnmr1 File: PropyleneGlycol-1H VNMR8-400 *Agilent-NMR*
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¹H NMR Spectrum: Expansion



PULSE SEQUENCE Relax. delay 2.000 sec Pulse 45.0 degrees Acq. time 3.408 sec Width 9615.4 Hz 8 repetitions	OBSERVE E1, 399.8212849	DATA PROCESSING Line broadening 1.0 Hz FT size 65536 Total time 1 minute	PropyleneGlycol-1H E0058P Solvent: cdcl3 Ambient temperature Operator: vnmr1 File: PropyleneGlycol-1H VNMR8-400 *Agilent-NMR*
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Identification by ¹H NMR: Conform to structure

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Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSI074) = **0.078%**

Approved By
Head - Technical

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