

Certificate of Analysis

Diethyl ether

PurTech Standard for GC

Product Number	PSI057	CAS No.	60-29-7
Brand	PureSynth	Lot No.	8304P0424
Molecular Formula	C ₄ H ₁₀ O	Date of Mfg.	April,2024
Molecular Weight	74.12 g/mol	Date of Exp.	March,2027

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Assay (GC-FID)	≥ 99.5 %	99.91%
Water (By KF)	NMT 0.03 %	0.024 %
Density	0.70-0.75 g/cm ³	0.71 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 Internal Reference Standard**

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: GC- FID conditions:

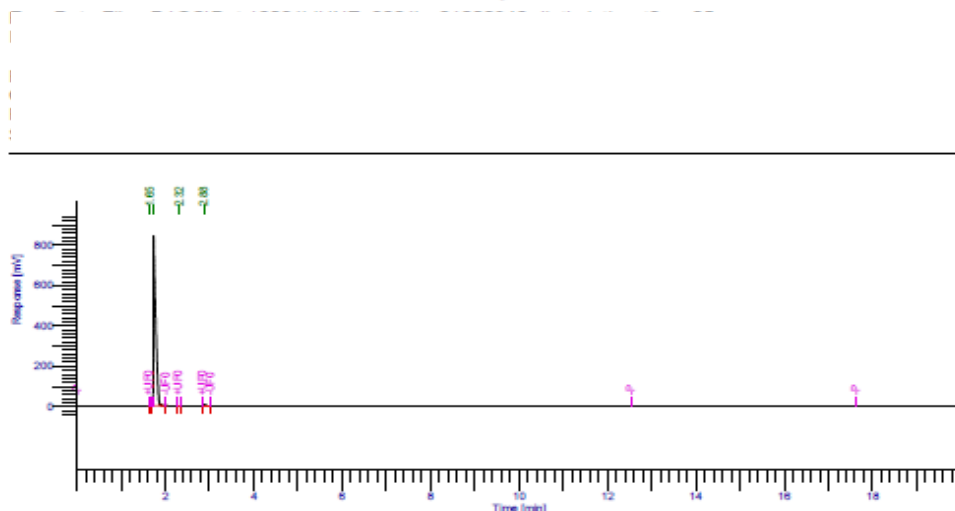
Column: Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

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	: 22-06-2021 12.26.56 PM
Operator	: manager	Sample Name	: DiethylEther
Sample Number	: 1	Study	: GC Purity
AutoSampler	: BUILT-IN	Rack/Vial	: 0/26
Instrument Name	: Clarus 680	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 20.00 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	: 22-06-2021 10.51.26 AM	Cycle	: 1



GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		1.655	421.06	200.85	0.01
2		1.736	3003262.41	841721.29	99.91
3		2.321	206.74	95.81	0.01
4		2.877	2099.85	667.09	0.07
			3005990.05	842685.04	100.00

Missing Component Report

Component Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 99.91 %

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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:

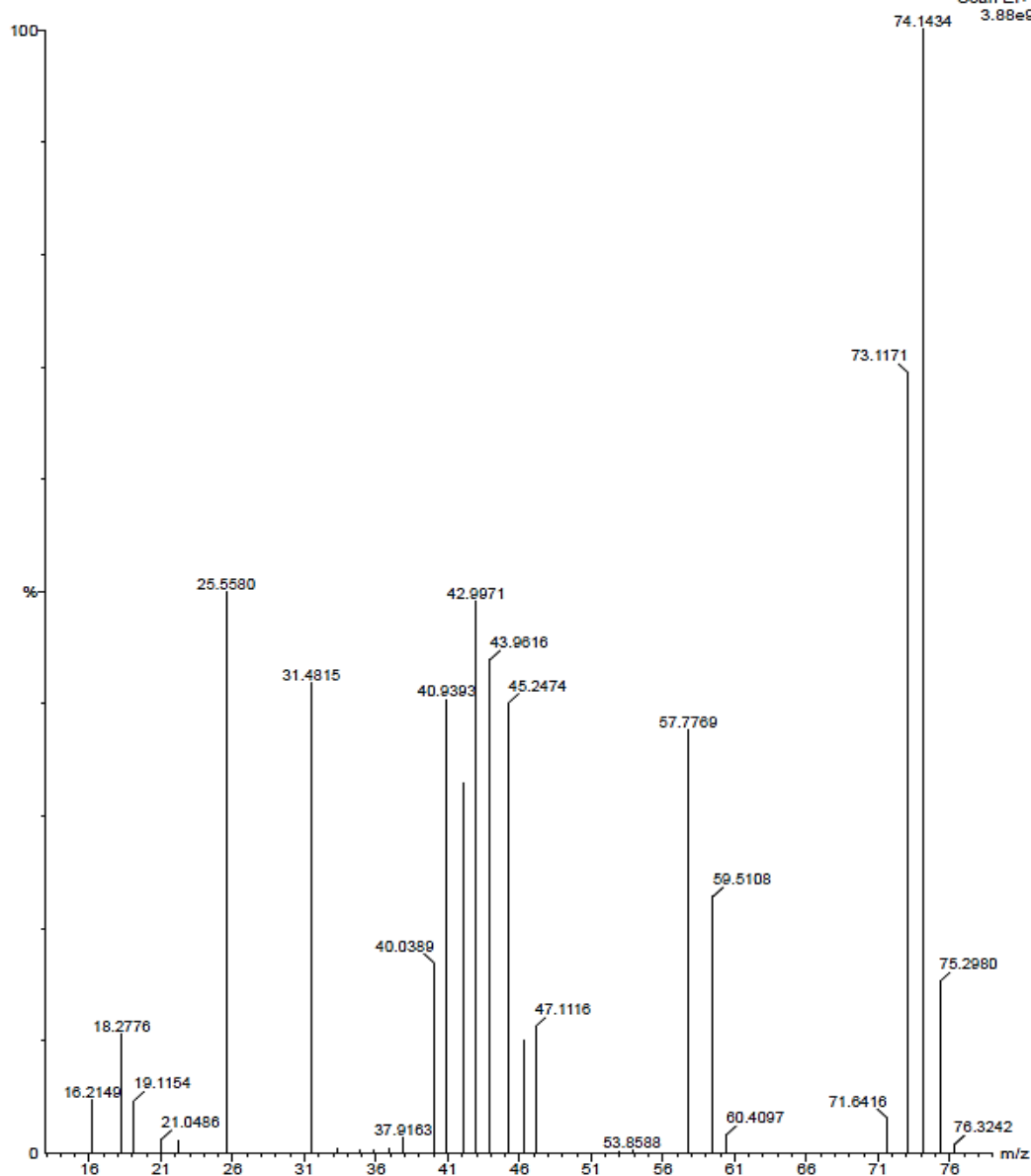
Product Name: Diethyl ether

Product Code: PSI057

Diethylether- 8304P0424

, 27-Jun-2024 + 16:11:41

Scan EI+
3.88e9



Identification by GC-MS: Conforms to molecular mass

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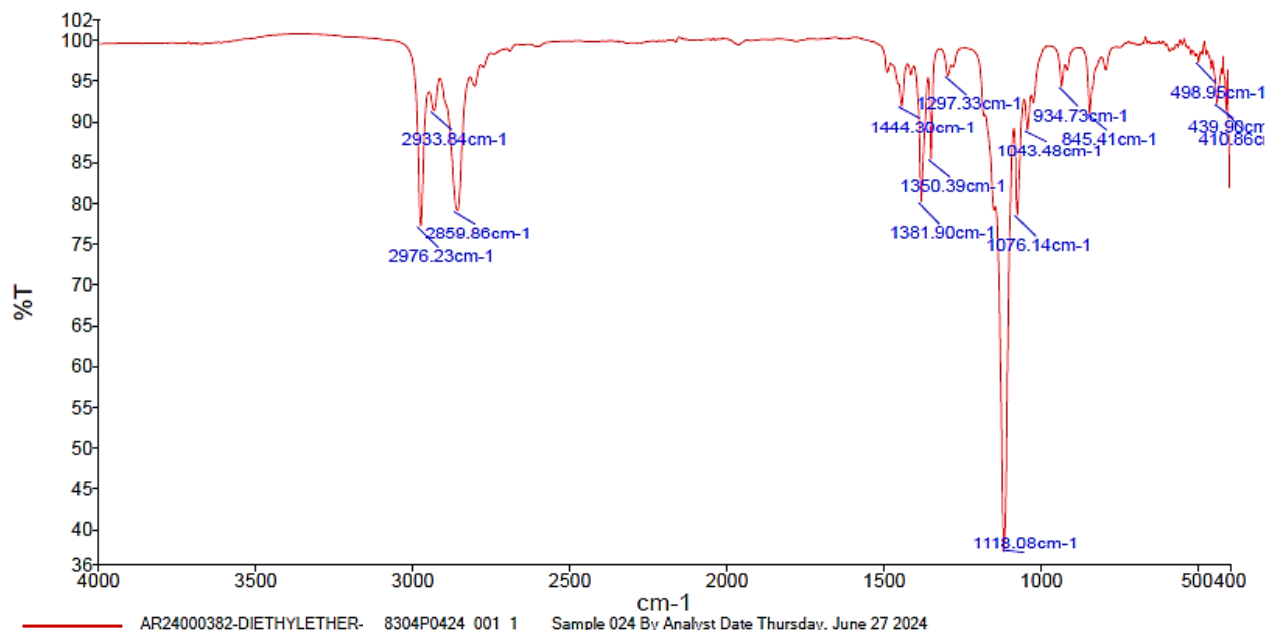
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Infrared spectrum:

Product Name: Diethyl ether

Product Code: PSI057

Analyst
Date



Source Spectra Results		
Spectrum Name		Number Of Peaks
AR24000382-DIETHYLETHER- 8304P0424_001_1		15
List of Peak Area/Height		
Peak Number	X (cm-1)	Y (%T)
1	2976.23	77.28
2	2933.84	91.43
3	2859.86	79.17
4	1444.30	92.00
5	1381.90	80.27
6	1350.39	85.54
7	1297.33	95.73
8	1118.08	37.26
9	1076.14	78.71
10	1043.48	89.05
11	934.73	94.44
12	845.41	91.12
13	498.95	97.42
14	439.90	92.32
15	410.86	91.52

Identification by IR: Conforms to structure

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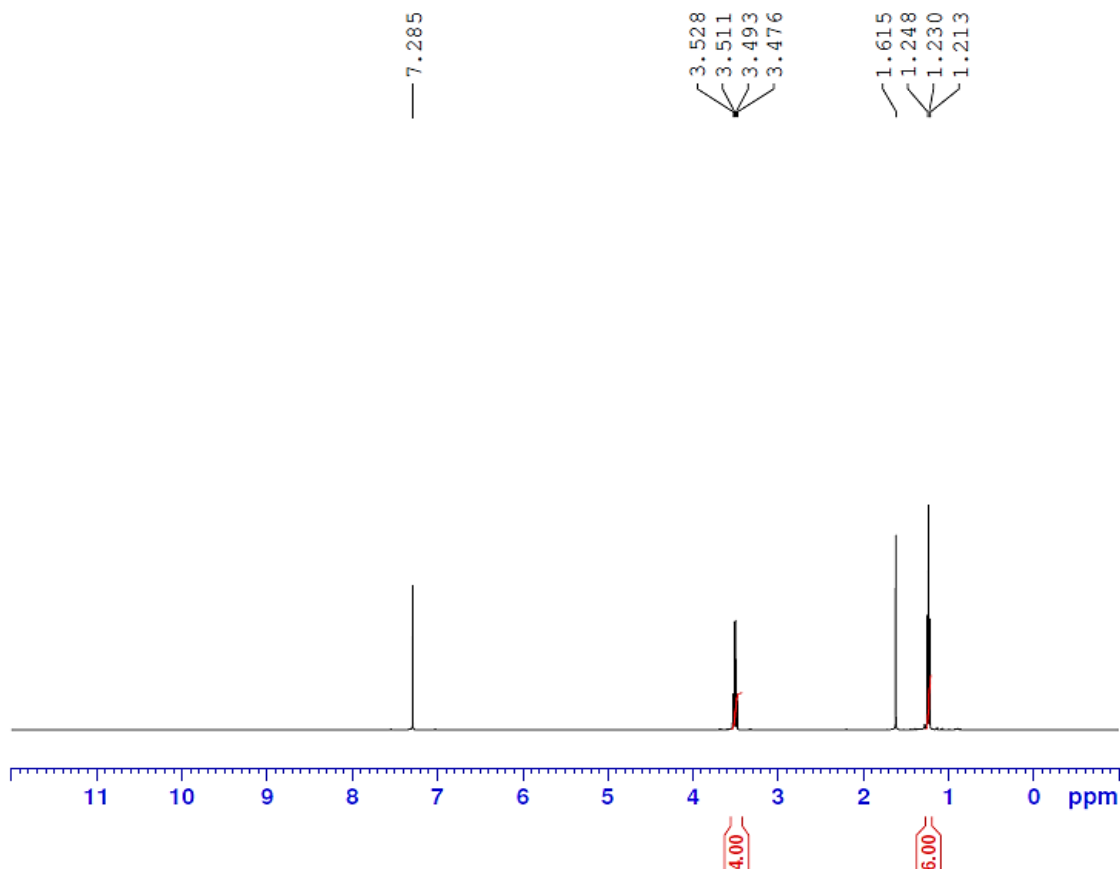
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¹H NMR Spectrum:

Product Name: Diethyl ether

Product Code: PSI057

Diethylether
B.no- 8304P0424
1H-NMR in CDCl₃



Identification by ¹H NMR: Conforms to structure

Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSI057) = **0.024 %**

Approved By
Head - Technical

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