

# Certificate of Analysis

## Xylenes (Mixture of Isomers)

### PurTech Standard for GC

<b>Product Number</b>	PSI042	<b>CAS No.</b>	1330-20-7
<b>Brand</b>	PureSynth	<b>Lot No.</b>	DEB09V
<b>Molecular Formula</b>	C <sub>8</sub> H <sub>10</sub>	<b>Date of Mfg.</b>	August.2021
<b>Molecular Weight</b>	106.17 g/mol	<b>Date of Exp.</b>	July.2024

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Clarity	Clear	Clear
Assay (By GC-FID)	≥ 99.0 %	99.09 %
Water (By KF)	NMT 0.05 %	0.0461 %
Identification by <sup>1</sup> H NMR	Conform to structure	Conforms
Identification by GC-MS	Conform to molecular mass	Conforms
Identification by IR	Conform to structure	Conforms

**\*Traceable to Internal Reference Standard.**

**Storage Condition:** Store at ambient 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:

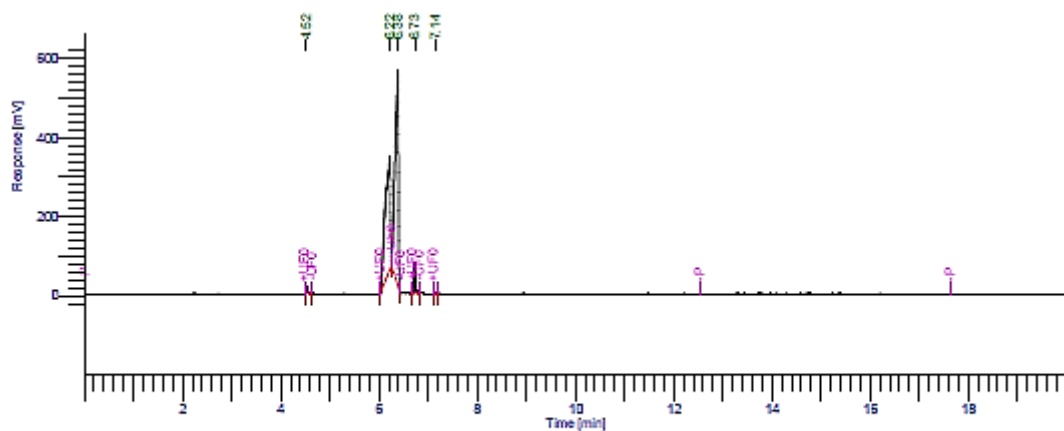
**Column:** Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

**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	: 26-10-2021 1.43.54 PM
Operator	: manager	Sample Name	: AR21000580-XYLENE- DEB09V
Sample Number	: 1	Study	: GC Purity
AutoSampler	: BUILT-IN	Rack/Vial	: 0/42
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	Area Reject	: 0.000000
Sample Volume	: 1.000000 ul	Dilution Factor	: 1.00
Sample Amount	: 1.0000	Cycle	: 1
Data Acquisition Time	: 26-10-2021 1.21.23 PM		



## GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		4.523	38294.31	15906.71	0.78
2		6.223	2172261.17	286833.67	44.11
3		6.384	2520058.67	542615.28	51.18
4		6.731	187212.76	77964.30	3.80
5		7.144	6524.24	2766.05	0.13
			4924351.14	926086.01	100.00

### Missing Component Report

Component Expected Retention (Calibration File)

All components were found

**Purity by GC-FID: 99.09 %**

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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

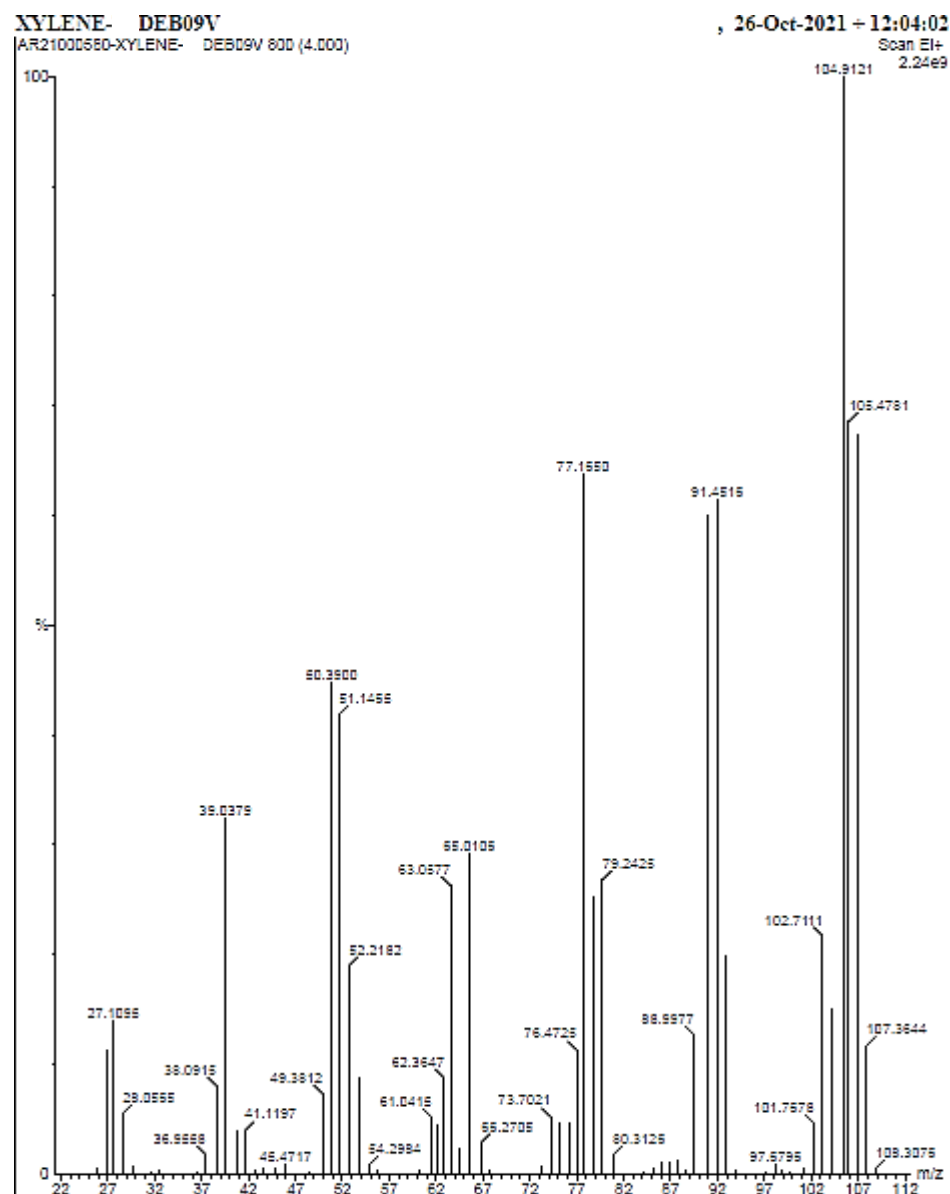
**Inlet Temp.:** 180°C, **Diluent:** Methanol

**Source energy:** 70eV

#### **Mass by GC-MS:**

**Product Name:** Xylene (Mixture of Isomers)

**Product Code:** PSI042



Identification by GC-MS: Conforms to molecular mass

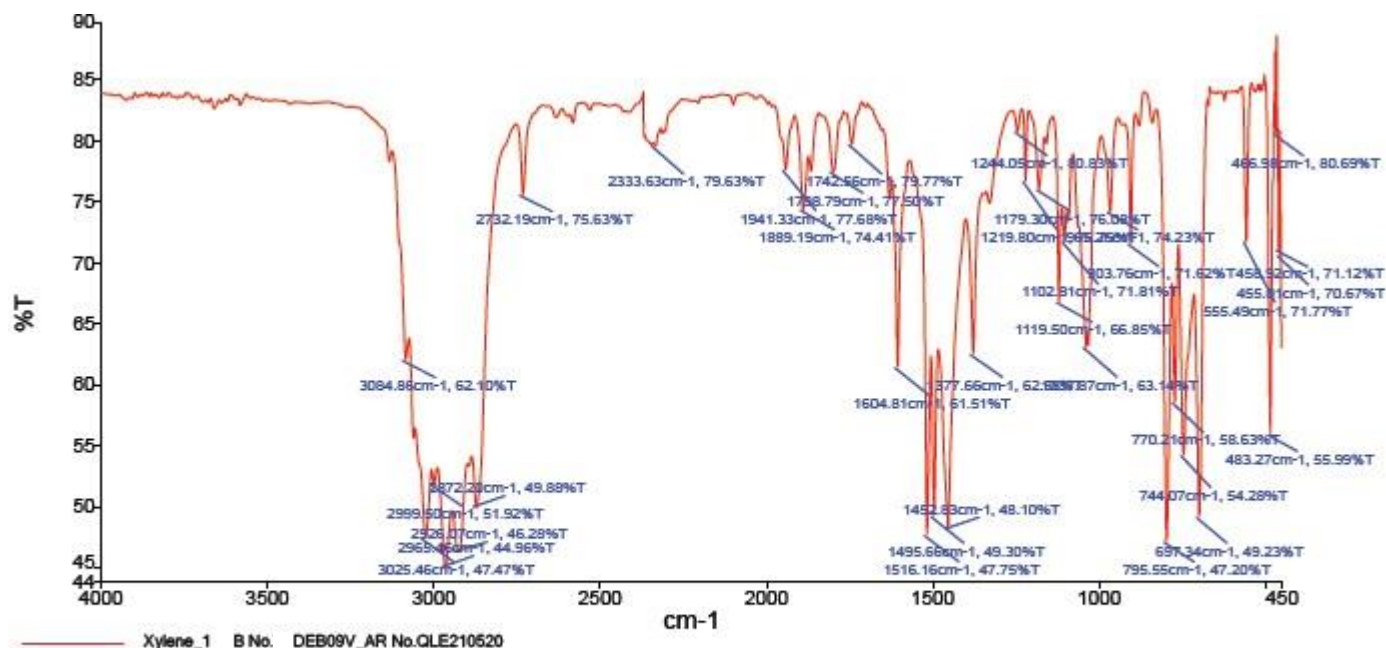
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**Infrared spectrum:**

**Product Name: Xylene (Mixture of Isomers)**

**Product Code: PSI042**



Source Spectra Results		
Spectrum Name	Number Of Peaks	
Xylene_1	35	
List of Peak Area/Height		
Peak Number	X (cm-1)	Y (%T)
1	3084.86	62.10
2	3025.46	47.47
3	2999.50	51.92
4	2965.46	44.96
5	2926.07	46.28
6	2872.20	49.88
7	2732.19	75.63
8	2333.63	79.63
9	1941.33	77.68
10	1889.19	74.41
11	1798.79	77.50
12	1742.56	79.77
13	1604.81	61.51
14	1516.16	47.75
15	1495.66	49.30
16	1452.83	48.10
17	1377.66	62.58
18	1244.05	80.83
19	1219.80	76.75
20	1179.30	76.08
21	1119.50	66.85
22	1102.81	71.81
23	1037.87	63.14
24	965.26	74.23
25	903.76	71.62
26	795.55	47.20
27	770.21	58.63
28	744.07	54.28
29	697.34	49.23
30	555.49	71.77
31	483.27	55.99
32	466.98	80.69
33	458.92	71.12
34	455.01	70.67
35	451.00	63.37

**Identification by IR: Conform to structure**

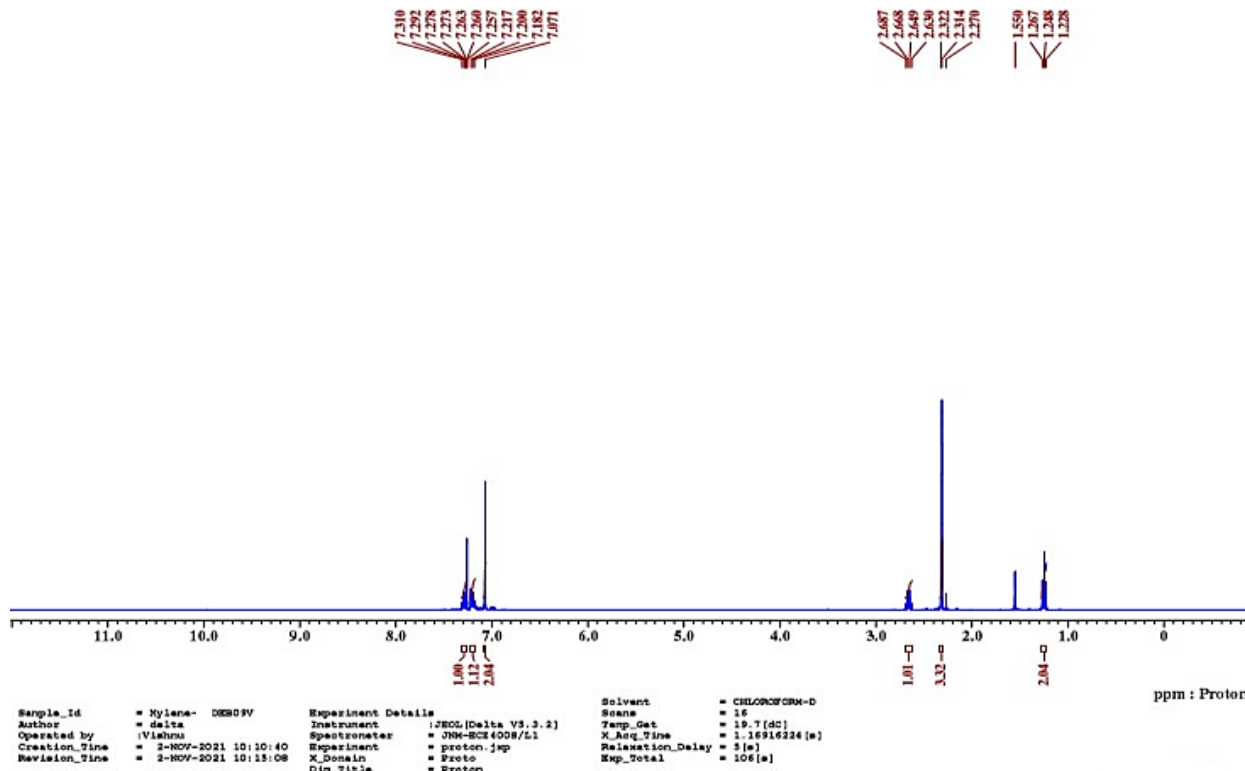
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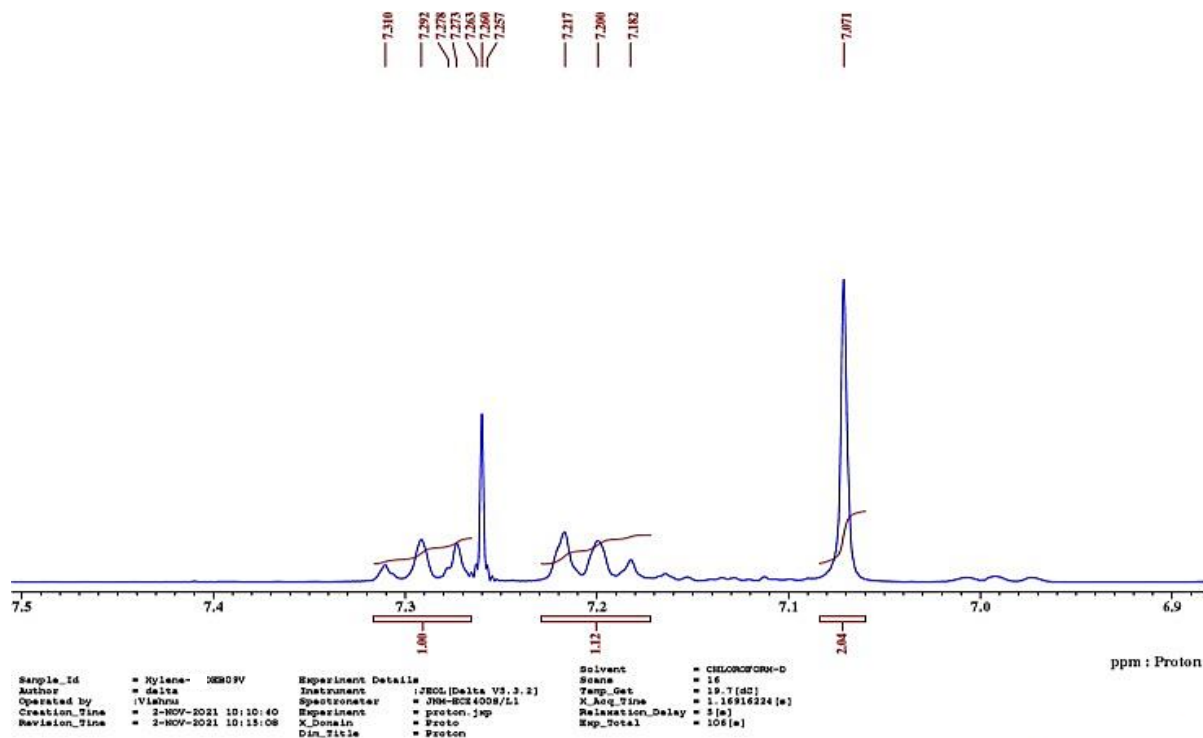
**<sup>1</sup>H NMR Spectrum:**

**Product Name: Xylene (Mixture of Isomers)**

**Product Code: PSI042**



**<sup>1</sup>H NMR Spectrum: Expansion**



**Identification by <sup>1</sup>H NMR: Conform to structure**

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## Maximum limits of impurities

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### WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSI042) = **0.0461 %**

Approved By  
Head - Technical

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