

Certificate of Analysis

1,4-Dioxane

PurTech Standard for GC

(Secondary Reference Standard)

Product Number	PSI043	CAS No.	123-91-1
Brand	PureSynth	Lot No.	NOC03P
Molecular Formula	C ₄ H ₈ O ₂	Date of Mfg.	March.2022
Molecular Weight	88.11 g/mol	Date of Exp.	February.2026

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Clarity	Clear	Clear
Assay (GC-FID)	≥ 99.5 %	99.99 %
Water (By KF)	≤ 0.2 %	0.148 %
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 1601521 with Current Lot No: R064V0**

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

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

This is a computer-generated report -does not required sign

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

Assay by GC-FID

METHOD: G.C- FID conditions:

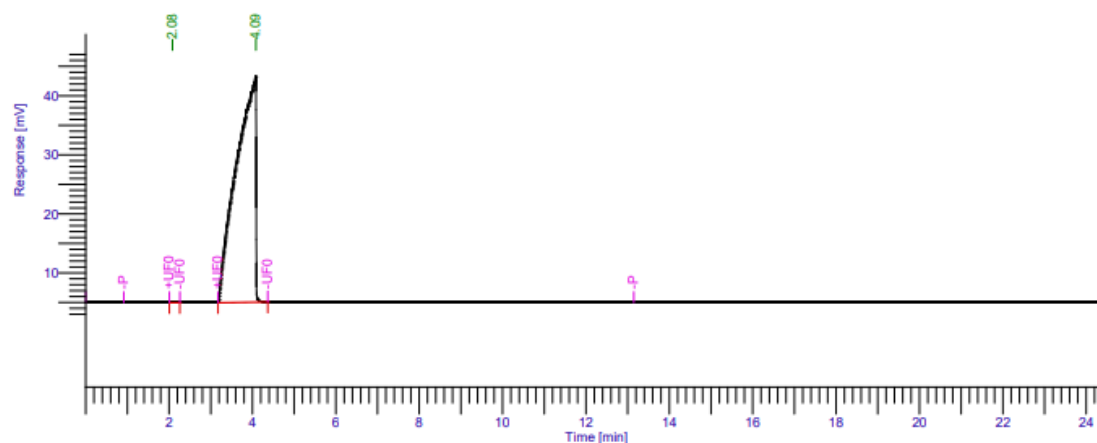
Column: Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

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	: 19/04/2022 11.44.57 AM
Operator	: manager	Sample Name	: AR22000211-1_4-DIOXANE- NOC0
Sample Number	: 1		3P
AutoSampler	: BUILT-IN	Study	: GC Purity
Instrument Name	: Clarus 680	Rack/Vial	: 0/10
Instrument Serial #	: None	Channel	: A
Delay Time	: 0.00 min	A/D mV Range	: 1000
Sampling Rate	: 12.5000 pts/s	End Time	: 24.50 min
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 19/04/2022 11.11.05 AM	Dilution Factor	: 1.00
		Cycle	: 1



GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		2.081	93.91	13.88	0.01
2		4.085	1253406.47	38301.71	99.99
			1253500.37	38315.58	100.00

Purity by GC-FID: 99.99 %

This is a computer-generated report -does not required sign

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

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: 1,4-Dioxane

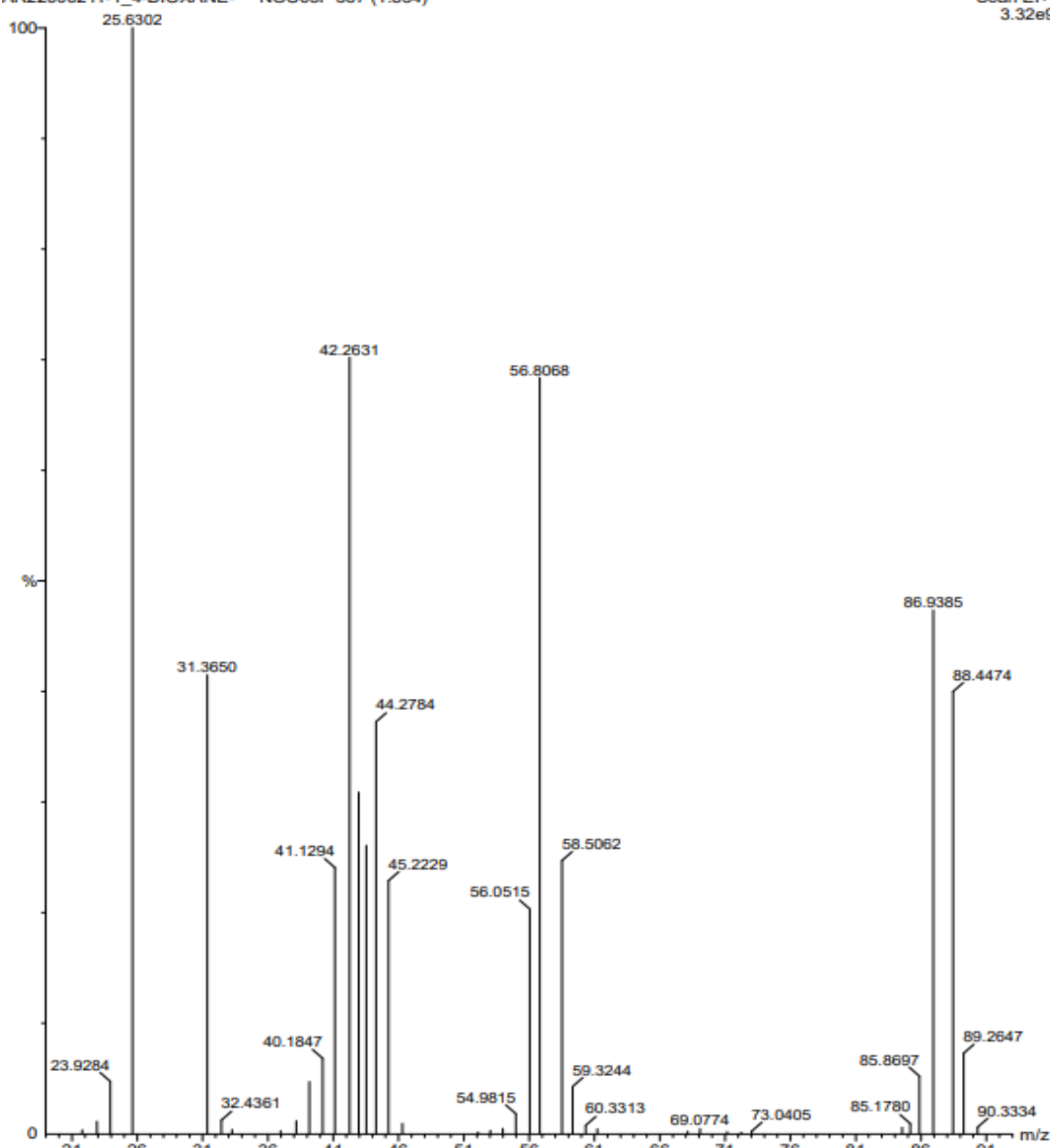
Product Code: PSI043

1_4-DIOXANE- NOC03P

, 12-Apr-2022 + 12:09:14

AR22000211-1_4-DIOXANE- NOC03P 367 (1.834)

Scan EI+
3.32e6



Identification by GC-MS: Conforms to molecular mass

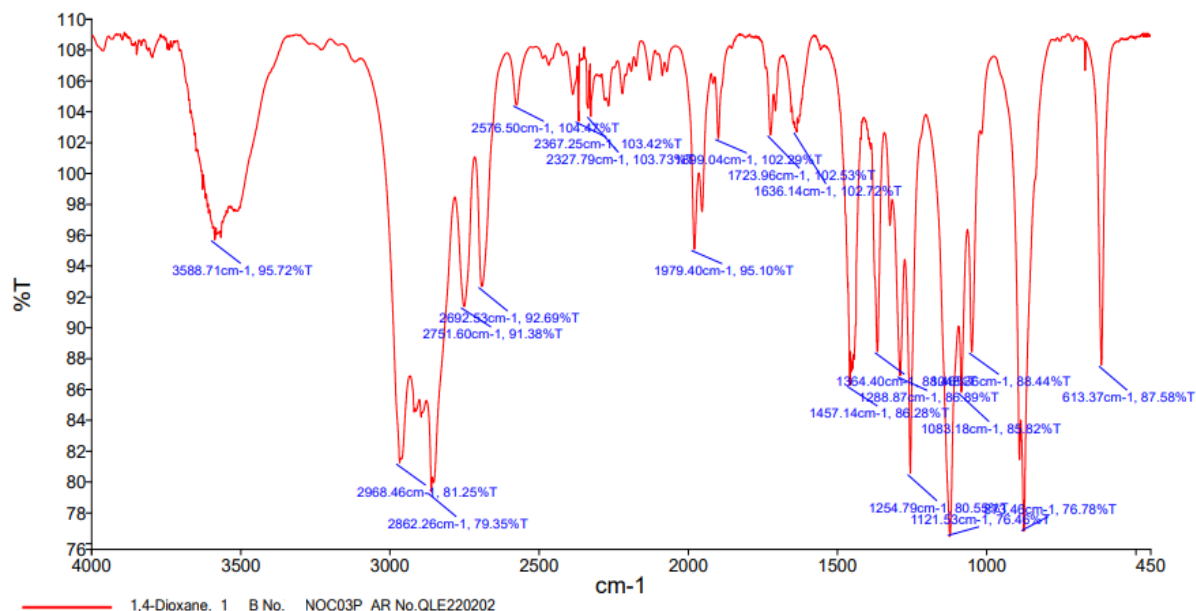
This is a computer-generated report -does not required sign

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

Infrared spectrum:

Product Name: 1,4-Dioxane

Product Code: PSI043



Source Spectra Results	
Spectrum Name	Number Of Peaks
1,4-Dioxane_1	21

List of Peak Area/Height		
Peak Number	X (cm-1)	Y (%T)
1	3588.71	95.72
2	2968.46	81.25
3	2862.26	79.35
4	2751.60	91.38
5	2692.53	92.69
6	2576.50	104.47
7	2367.25	103.42
8	2327.79	103.73
9	1979.40	95.10
10	1899.04	102.29
11	1723.96	102.53
12	1636.14	102.72
13	1457.14	86.28
14	1364.40	88.46
15	1288.87	86.89
16	1254.79	80.55
17	1121.53	76.46
18	1083.18	85.82
19	1048.36	88.44
20	873.46	76.78
21	613.37	87.58

Identification by IR: Conforms to structure

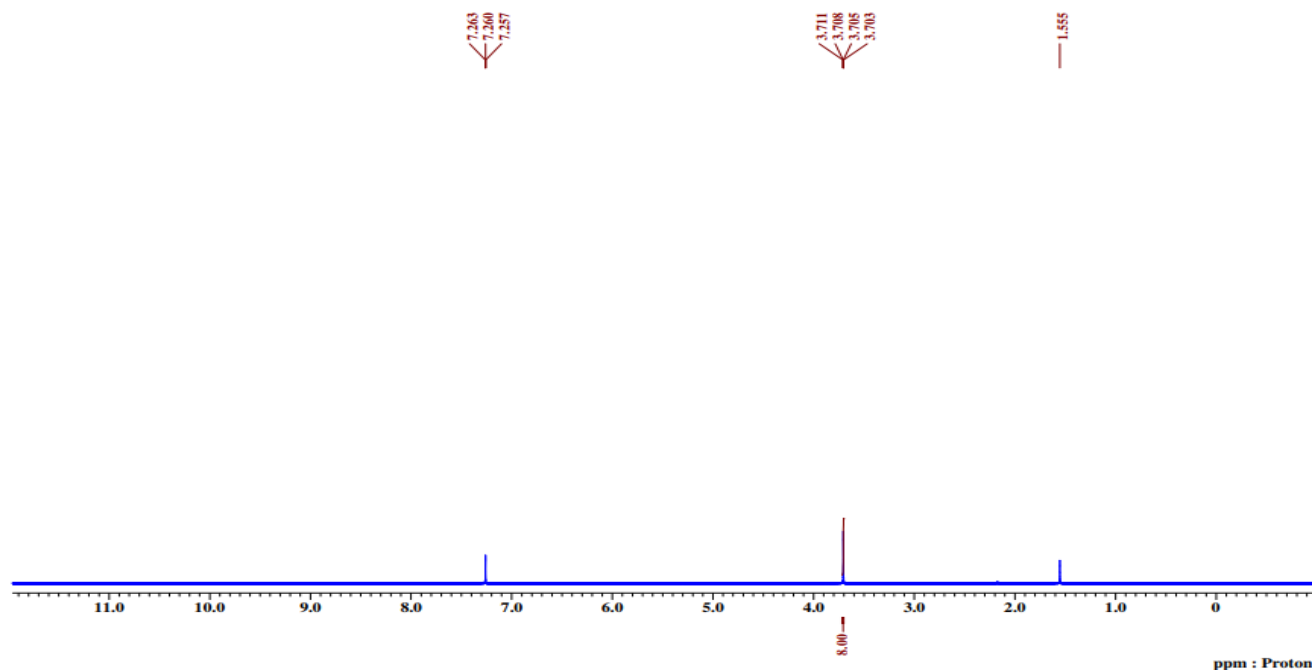
This is a computer-generated report -does not required sign

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

¹H NMR Spectrum:

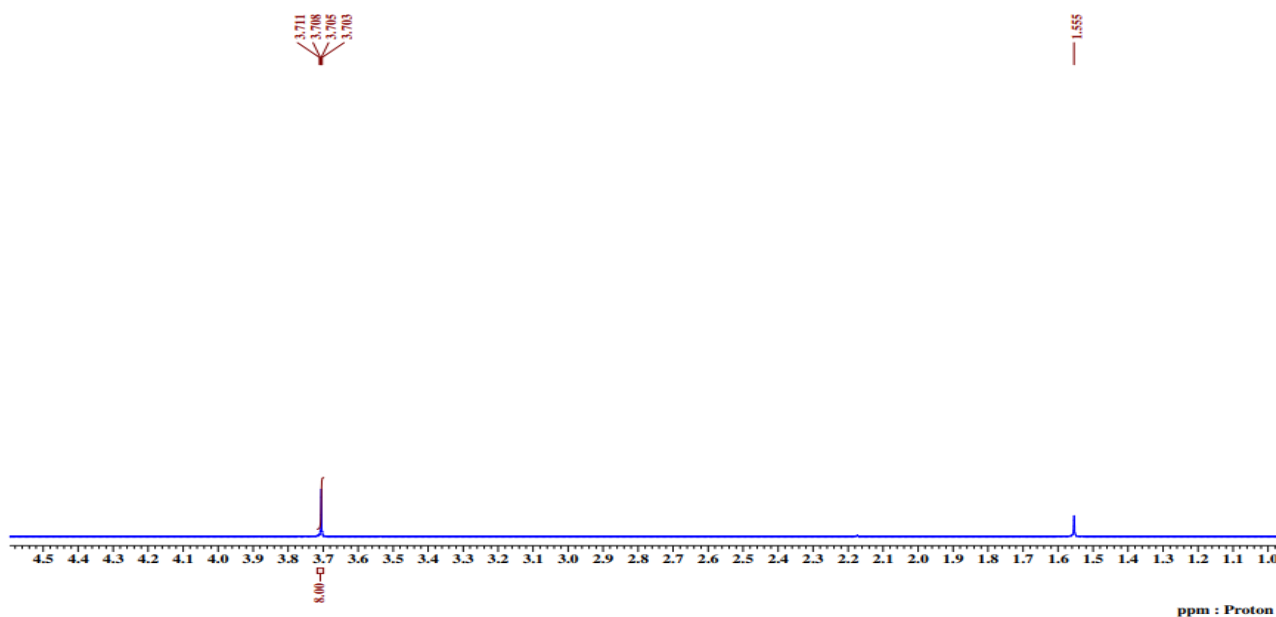
Product Name: 1,4-Dioxane

Product Code: PSI043



Sample_Id	= 1,4-Dioxane- WOC03P	Experiment	= proton.jsp	Relaxation_Delay	= 5[s]
Author	= delta	X_Domain	= Proton	Exp_Total	= 205.0[s]
Creation_Time	= 15-APR-2022 06:59:07	Dim_Title	= Proton		
Revision_Time	= 15-APR-2022 09:23:51	Solvent	= CHLOROFORM-D		
Experiment_Details		Scans	= 32		
Instrument	= JEOL[Delta V5.3.2]	Temp_Get	= 18.7[$^{\circ}$ C]		
Spectrometer	= JNM-ECZ400S/L1	X_Acq_Time	= 1.16916224[s]		

¹H NMR Spectrum: Expansion



Sample_Id	= 1,4-Dioxane- WOC03P	Experiment	= proton.jsp	Relaxation_Delay	= 5[s]
Author	= delta	X_Domain	= Proton	Exp_Total	= 205.0[s]
Creation_Time	= 15-APR-2022 06:59:07	Dim_Title	= Proton		
Revision_Time	= 15-APR-2022 09:23:51	Solvent	= CHLOROFORM-D		
Experiment_Details		Scans	= 32		
Instrument	= JEOL[Delta V5.3.2]	Temp_Get	= 18.7[$^{\circ}$ C]		
Spectrometer	= JNM-ECZ400S/L1	X_Acq_Time	= 1.16916224[s]		

Identification by ¹H NMR: Conforms to structure

This is a computer-generated report -does not required sign

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

Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSI043) = **0.148 %**

Approved By
Head - Technical

This is a computer-generated report -does not required sign

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