PureSynth
Research Chemicals

Certificate of Analysis

Butyl Methanesulfonate

PurCert Standard for GC

Product Number	PSR39471	**CAS No.**	1912-32-9
Brand	PureSynth	**Lot No.**	B39471B1023
Molecular Formula	$C_5H_{12}O_3S$	**Date of Mfg.**	October.2023
Molecular Weight	152.21 g/mol	**Date of Exp.**	September.2027

Test	Specification	Result
Description	Colorless liquid	Colorless liquid
Assay (GC-FID)	≥ 99.0 %	99.45 %
Water (By KF)	NMT 0.5000 %	0.3948 %
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 a temperature of 2-8°C and keep the container tightly closed.

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

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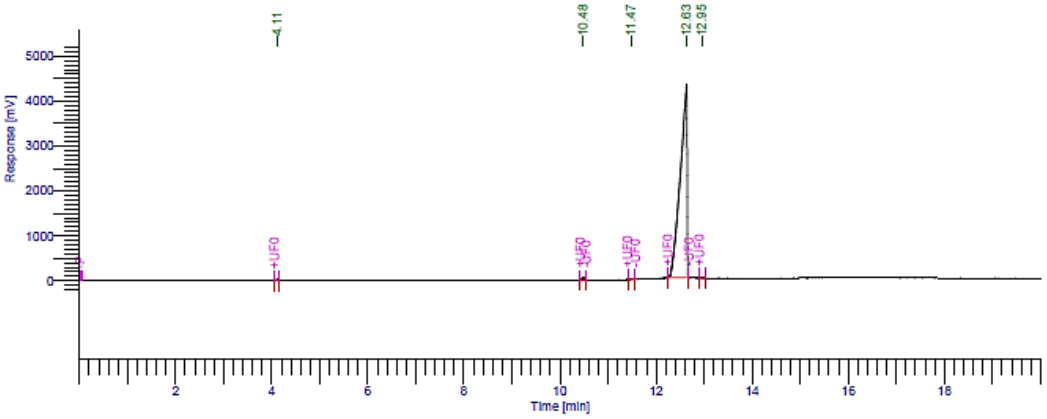
Assay by GC-FID

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	: 23-12-2023 12:48:57
Operator	: manager	Sample Name	: BUTYL METHANESULFONATE-B394 71B1023
Sample Number	: 001		
AutoSampler	: BUILT-IN	Study	:
Instrument Name	: Clarus 690	Rack/Vial	: 0/15
Instrument Serial #	: 690S23050206	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		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 23-12-2023 12:17:10	Dilution Factor	: 1.00
		Cycle	: 1



GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		4.111	34908.34	16163.02	0.08
2		10.481	145446.71	58191.09	0.35
3		11.475	27179.80	7330.77	0.06
4		12.635	41917423.19	4.29e+06	99.45
5		12.952	23715.79	9072.32	0.06
			42148673.82	4.38e+06	100.00

Warning -- Signal level out-of-range in peak

Missing Component Report

Component	Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 99.45 %

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

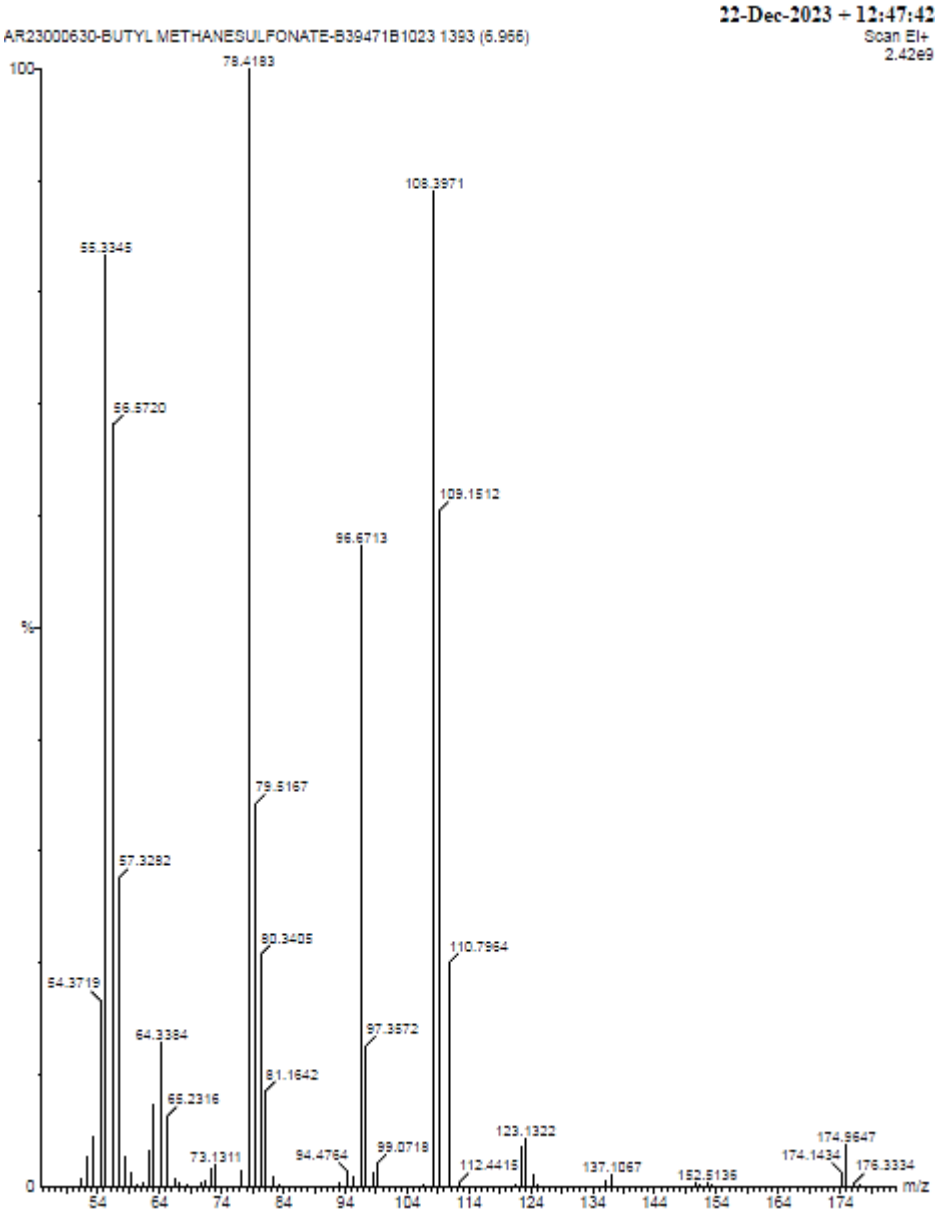
IDENTIFICATION TESTS

GC-MS Spectrum:

METHOD: 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: Butyl Methanesulfonate
Product Code: PSR39471



Identification by GC-MS: Conforms to molecular mass

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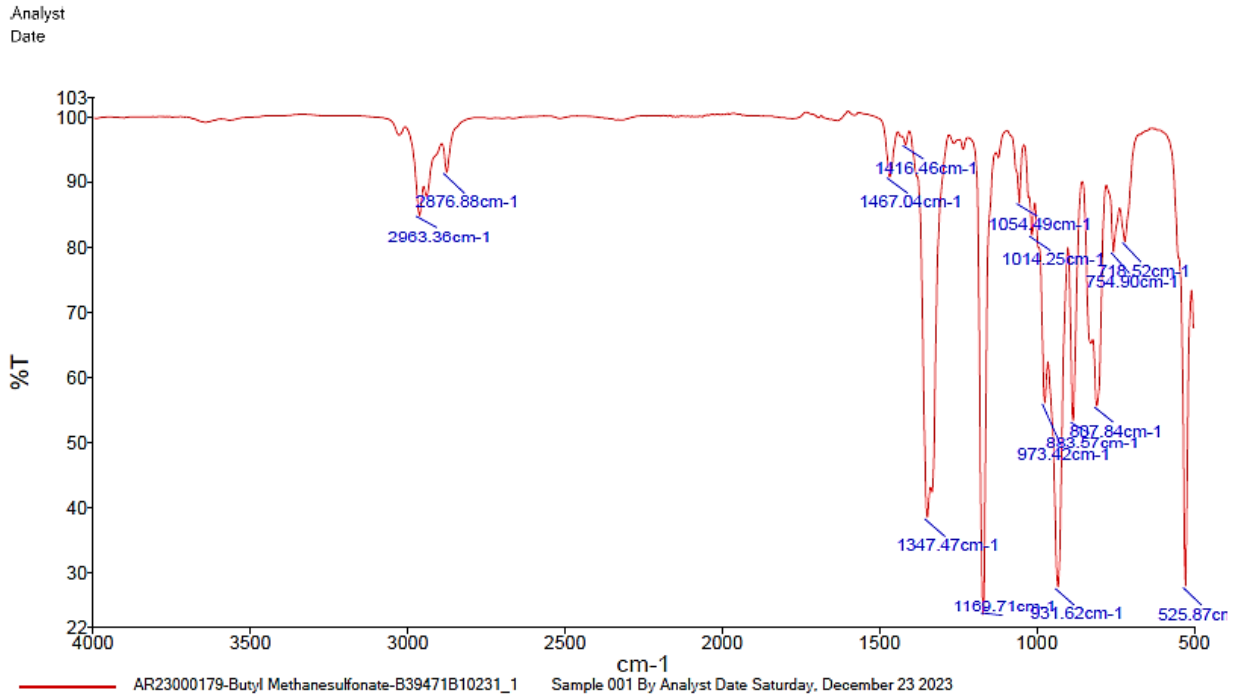
Infrared spectrum:

Product Name: Butyl Methanesulfonate
Product Code: PSR39471



Source Spectra Results	
Spectrum Name	Number Of Peaks
AR23000179-Butyl Methanesulfonate-B39471B10231_1	15

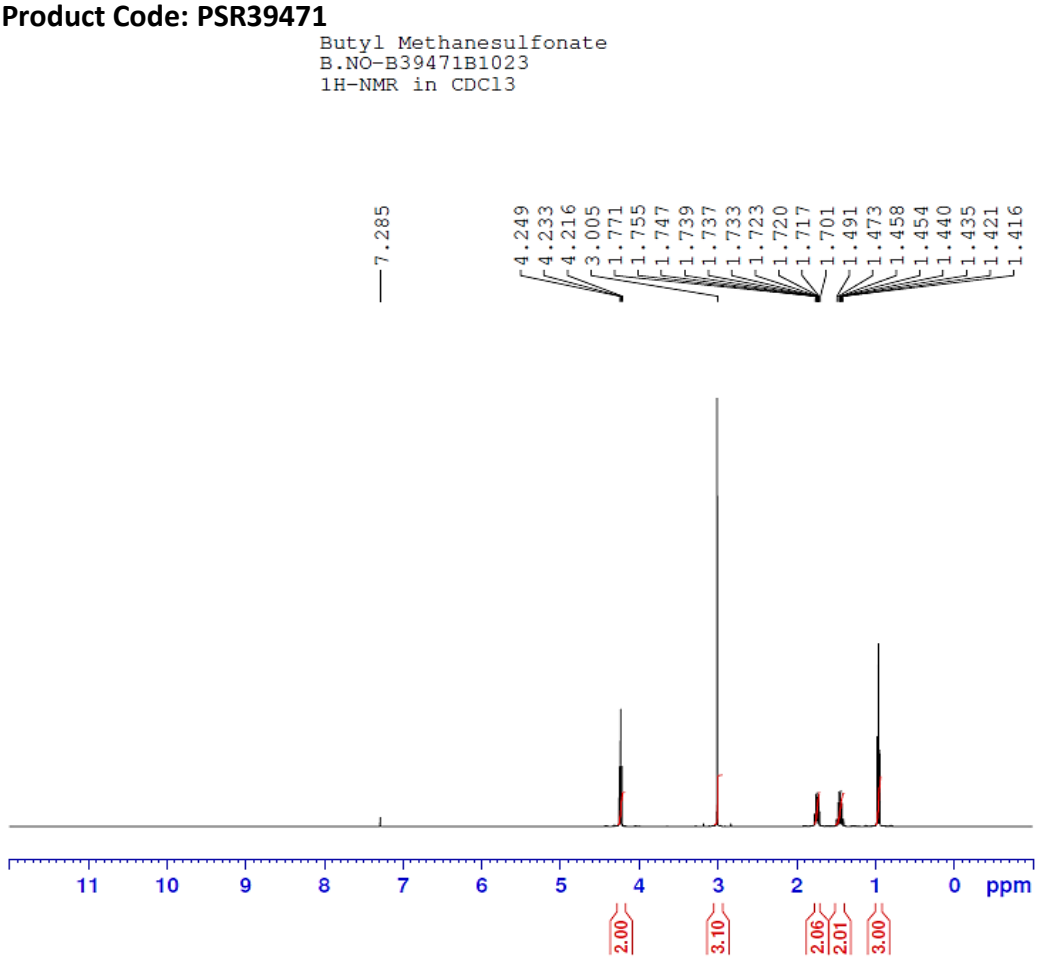
List of Peak Area/Height		
Peak Number	X (cm-1)	Y (%T)
1	2963.36	84.92
2	2876.88	91.50
3	1467.04	90.80
4	1416.46	95.74
5	1347.47	38.58
6	1169.71	23.63
7	1054.49	86.84
8	1014.25	81.89
9	973.42	56.15
10	931.62	27.87
11	883.57	53.36
12	807.84	55.70
13	754.90	79.35
14	718.52	80.89
15	525.87	28.04

Identification by IR: Conforms to structure

^{1}H NMR Spectrum:

Product Name: Butyl Methanesulfonate

Product Code: PSR39471



Identification by ^{1}H NMR: Conforms to structure

Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSR39471) = **0.3948 %**

Approved By

Head - Technical