PureSynth
Research Chemicals

Certificate of Analysis

N-Nitroso N-methyl-4-amino butylic acid (NMBA)

Product Number	PSR37122	**CAS No.**	61445-55-4
Brand	PureSynth	**Lot No.**	N37122CS0424
Molecular Formula	$C_5H_{10}N_2O_3$	**Date of Mfg.**	April,2024
Molecular Weight	146.14 g/mol	**Date of Exp.**	March,2027

Test	Specification	Result
Description	Pale yellow Solid	Pale yellow Solid
Assay (By GC)	> 97.0 %	97.02%
Water (By KF)	NMT 4.000 %	3.3266 %
Identification by ^{1}H NMR	Conforms to structure	Conforms
Identification by MS	Conforms to molecular mass	Conforms
Identification by IR	Conforms to structure	Conforms

Storage Condition: Store at 2-8°C, keep containers tightly closed in a dark place.

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

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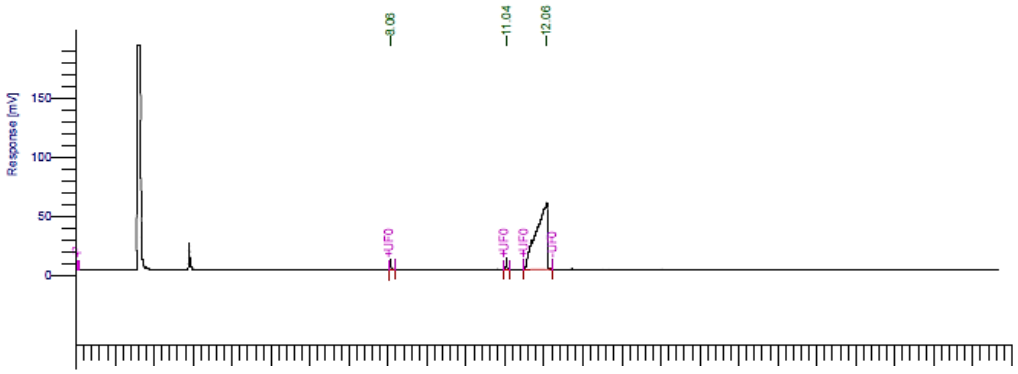
Assay by GC-FID

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	: 05-02-2024 19:24:11
Operator	: manager	Sample Name	: AR24000075-NMBA
Sample Number	: 001	Study	:
AutoSampler	: BUILT-IN	Rack/Vial	: 0/9
Instrument Name	: Clarus 690	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 23.67 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	: 05-02-2024 17:57:22	Cycle	: 1



GC Reports

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]
1		8.062	17236.71	8345.04	1.51
2		11.041	16835.70	9730.63	1.47
3		12.063	1109830.15	56287.58	97.02
			1143902.56	74363.25	100.00

Missing Component Report

Component	Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 97.02 %

PureSynth Research Chemicals GmbH, 64683 Einhausen Marie-Curie-StraBe. 3, Germany
Email: info@pure-synth.com , Website: www.pure-synth.com
This is a computer-generated report -does not required sign

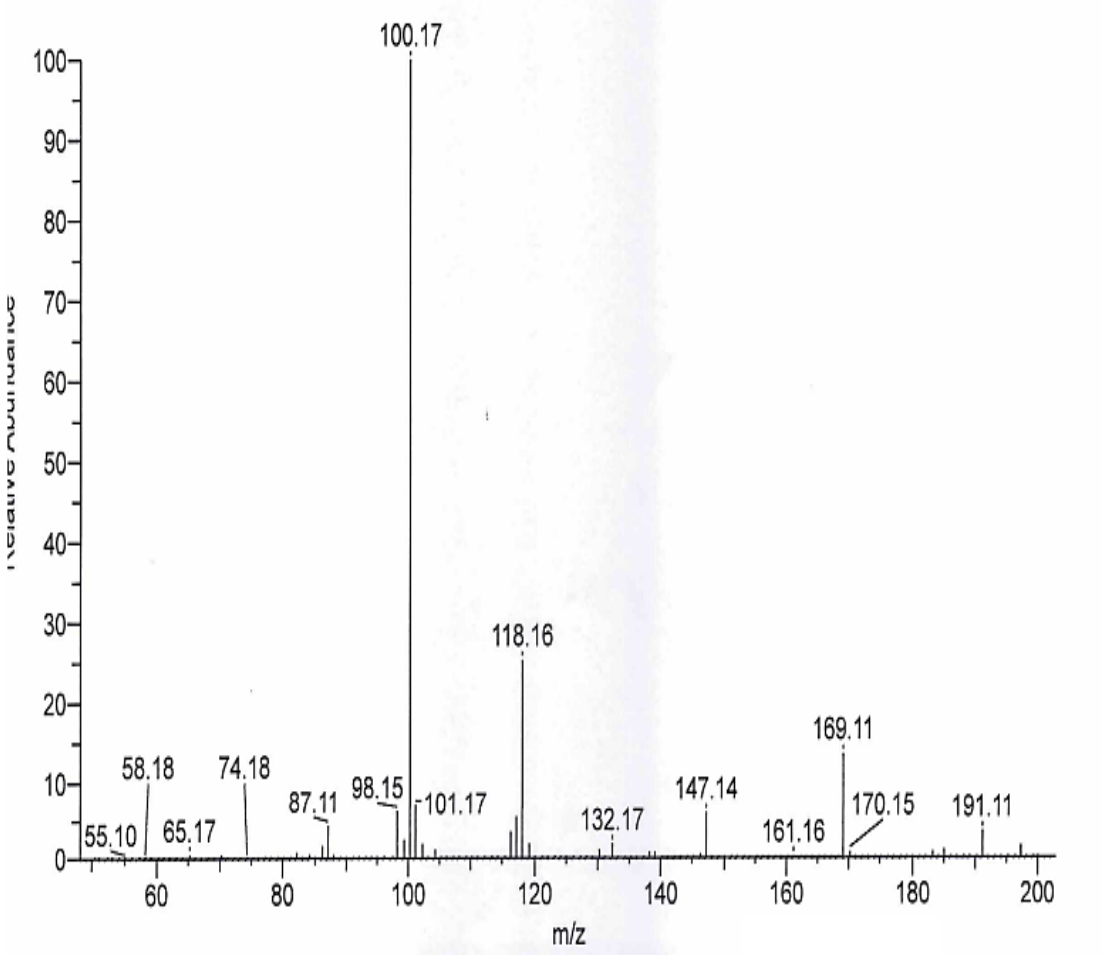
IDENTIFICATION TESTS

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: N-Nitroso N-methyl-4-amino butylic acid
Product Code: PSR37122



Identification by GC-MS: Conforms to molecular mass

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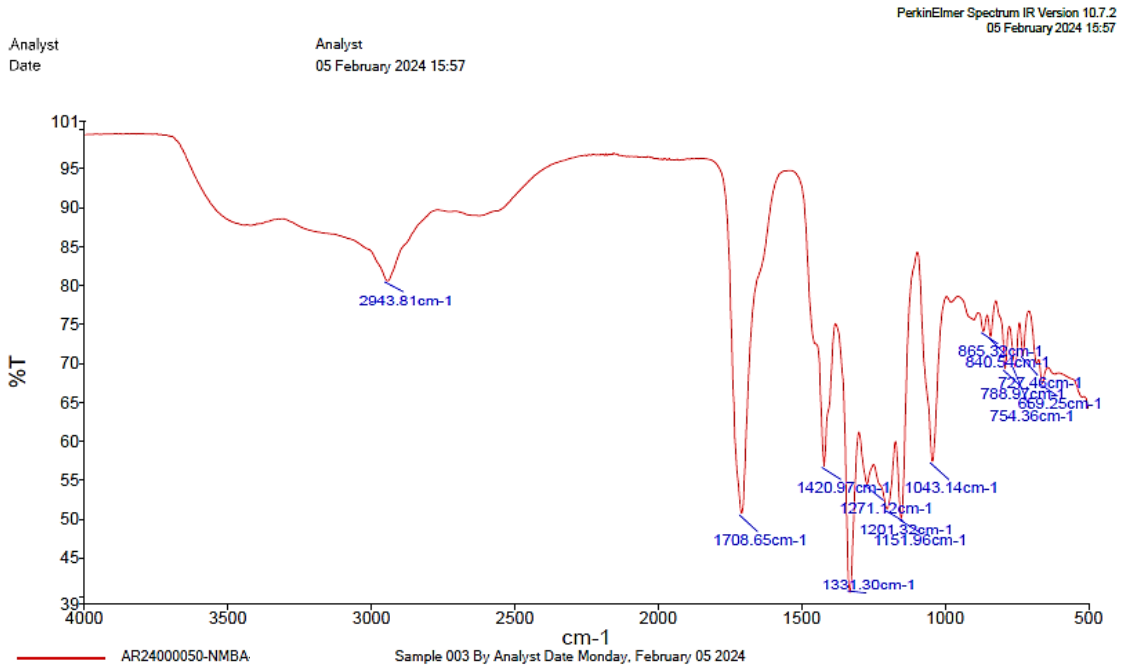
Infrared spectrum:

Product Name: N-Nitroso N-methyl-4-amino butylic acid

Product Code: PSR37122



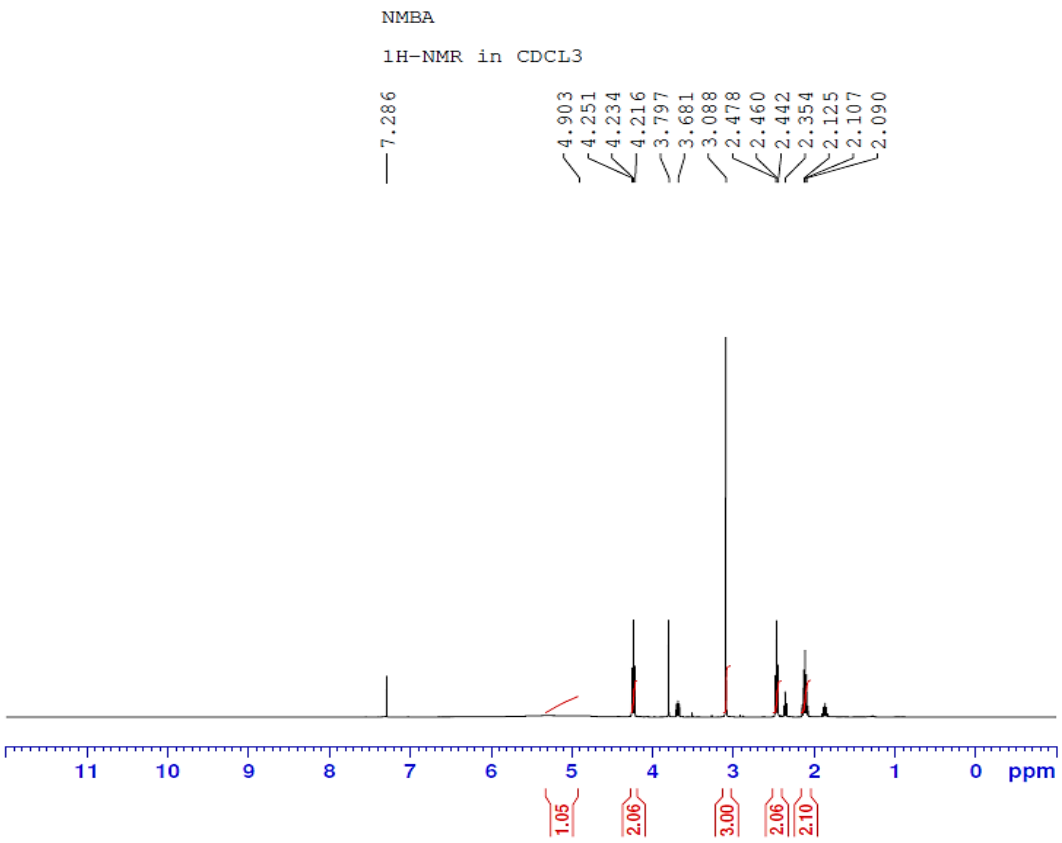
Source Spectra Results	
Spectrum Name	Number Of Peaks
AR24000050-NMBA	14

List of Peak Area/Height		
Peak Number	X (cm-1)	Y (%T)
1	2943.81	80.63
2	1708.65	50.73
3	1420.97	56.80
4	1331.30	40.55
5	1271.12	54.50
6	1201.32	51.31
7	1151.96	50.10
8	1043.14	57.41
9	865.32	74.10
10	840.54	73.47
11	788.97	69.32
12	754.36	69.60
13	727.46	71.07
14	659.25	67.47

Identification by IR: Conforms to structure

[1]H NMR Spectrum:

Product Name: N-Nitroso N-methyl-4-amino butylic acid
Product Code: PSR37122



Identification by [1]H NMR: Conforms to structure

Maximum limits of impurities

WATER DETERMINATION
Method: Karl Fisher titration
Water Content (PSR37122) = **3.3266 %**

Approved By
Head - Technical