



Terpene Certified Reference Materials

- Analytical standards for terpene analysis
- Standard and high concentration mixes, high abundance mixes, and singles
- Proficiency testing standards offered by NSI Lab Solutions



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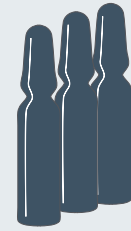


Terpene Certified Reference Materials

Terpenes are the common term for a large group of compounds that contribute to flavor and smell of botanical products. Isoprene or 2-methyl-1,3-butadiene and its polymers are the main base of natural rubber and the structural base for terpenes and terpenoids, even though isoprene itself is not part of the reactions which produce terpenes.

Terpene analysis plays a critical role in the development and QC of cannabis products as it provides a quantitative measure of the product's flavor and scent profile. When it comes to Terpene Certified Reference Materials, Spex is a leader in the industry, and our terpene singles and multi-compound mixes are designed specifically with cannabis customers in mind.

For more information on Terpenes and their chemical properties, check out our [Terpenes Chemical Properties Guide](#).



Organic Certified
Reference Materials



Analytical Standards for
Terpene Analysis



Supplied with a
Certificate of Analysis



ISO Accredited
Standards

Terpene Mixes

Our original terpene standard mixes provide labs with an extensive list of over 40 compounds, provided at a low level concentration for highly specific analyses.

CAN-TERP Mix 1 in Methanol					
Component	CAS #	Component	CAS #	Component	CAS #
(-)-alpha-Bisabolol	23089-26-1	Eucalyptol	470-82-6	Linalool	78-70-6
Camphene	79-92-5	Farnesene (mix of isomers)	502-61-4	p-Mentha-1,5-diene	99-83-2
Camphor	76-22-2	(+)-Fenchone	4695-62-9	beta-Myrcene	123-35-3
(1S)-(+)-3-Carene	498-15-7	Geranyl acetate	105-87-3	Nerol	106-25-2
(-)-Caryophyllene oxide	1139-30-6	Hexahydrothymol	89-78-1	cis-Nerolidol	3790-78-1
trans-Caryophyllene	87-44-5	Isoborneol	124-76-5	Ocimene (mix of isomers)	13877-91-3
(+)-Cedrol	77-53-2	(-)-Isopulegol	89-79-5	Valencene	4630-07-3
		Concentration	Volume	Part #	
		100 µg/mL	1 mL	CAN-TERP-MIX1	

CAN-TERP Mix 2 in Methanol					
Component	CAS #	Component	CAS #	Component	CAS #
(+)-Borneol	464-43-7	Geraniol	106-24-1	(+)-Pulegone	89-82-7
(-)-Borneol	464-45-9	Guaiol	489-86-1	alpha-Terpinene	99-86-5
(1R)-(+)-Camphor	464-49-3	alpha-Humulene	6753-98-6	gamma-Terpinene	99-85-4
(1S)-(-)-Camphor	464-48-2	(R)-(+)-Limonene	5989-27-5	Terpinolene	586-62-9
alpha-Cedrene	469-61-4	trans-Nerolidol	40716-66-3	Terpineol (mix of isomers)	8000-41-7
L(-)-Fenchone	7787-20-4	alpha-Pinene	80-56-8	Sabinene	3387-41-5
(1R)-endo-(+)-Fenchyl alcohol	2217-02-9	beta-Pinene	127-91-3	Sabinene hydrate	546-79-2
		Concentration	Volume	Part #	
		100 µg/mL	1 mL	CAN-TERP-MIX2	

High Concentration Terpene Mixes

Our most popular products, these high concentration CAN-TERP mixes provide the same compounds as the standard CAN-TERP mixes but at 1,000 ppm.

CAN-TERP High Level Terpene Mix 1 in Methanol					
Component	CAS #	Component	CAS #	Component	CAS #
(-)-alpha-Bisabolol	23089-26-1	Eucalyptol	470-82-6	Linalool	78-70-6
Camphene	79-92-5	Farnesene (mix of isomers)	502-61-4	p-Mentha-1,5-diene	99-83-2
Camphor	76-22-2	(+)-Fenchone	4695-62-9	beta-Myrcene	123-35-3
(1S)-(+)-3-Carene	498-15-7	Geranyl acetate	105-87-3	Nerol	106-25-2
trans-Caryophyllene	87-44-5	Hexahydrothymol	89-78-1	cis-Nerolidol	3790-78-1
(-)-Caryophyllene oxide	1139-30-6	Isoborneol	124-76-5	Ocimene (mix of isomers)	13877-91-3
(+)-Cedrol	77-53-2	(-)-Isopulegol	89-79-5	Valencene	4630-07-3
		Concentration	Volume	Part #	
		1,000 µg/mL	1 mL	CAN-TERP-MIX1H	

CAN-TERP High Level Terpene Mix 2 in Methanol					
Component	CAS #	Component	CAS #	Component	CAS #
(+)-Borneol	464-43-7	Geraniol	106-24-1	(+)-Pulegone	89-82-7
(-)-Borneol	464-45-9	Guaiol	489-86-1	alpha-Terpinene	99-86-5
(1R)-(+)-Camphor	464-49-3	alpha-Humulene	6753-98-6	gamma-Terpinene	99-85-4
(1S)-(-)-Camphor	464-48-2	(R)-(+)-Limonene	5989-27-5	Terpinolene	586-62-9
alpha-Cedrene	469-61-4	trans-Nerolidol	40716-66-3	Terpineol (mix of isomers)	8000-41-7
L(-)-Fenchone	7787-20-4	alpha-Pinene	80-56-8	Sabinene	3387-41-5
(1R)-endo-(+)-Fenchyl alcohol	2217-02-9	beta-Pinene	127-91-3	Sabinene hydrate	546-79-2
		Concentration	Volume	Part #	
		1,000 µg/mL	1 mL	CAN-TERP-MIX2H	

High Abundance Terpene Mix

The diversity of terpenes and terpenoids is recognized by the range of scents and flavors they produce. The terpene abundances can differ greatly between the strains of cannabis, from major terpenes, such as myrcene, often found in percent levels, to the minor terpenes, such as geraniol, mostly found in ppm levels or smaller.

Terpene testing and profiling can be difficult since the range of abundance across the profile can vary drastically. A CRM can provide a basis for more accurate testing results by taking into consideration the natural differences in concentration amongst the various compounds in a terpene profile.

With that in mind, our new terpene standard contains the most abundant terpenes found in cannabis products at our highest level of concentration.

CAN-TERP High Abundance Terpene Mix in Methanol			
Component	CAS #	Component	CAS #
trans-Caryophyllene	87-44-5	Ocimene	13877-91-3
alpha-Humulene	6753-98-6	beta-Phellandrene	555-10-2
Linalool	78-70-6	alpha-Pinene	80-56-8
(R)-(+)-Limonene	5989-27-5	beta-Pinene	127-91-3
beta-Myrcene	123-35-3	Terpinolene	586-62-9
	Concentration	Volume	Part #
	5,000 µg/mL	1 mL	CAN-TERP-HA

Terpene Singles

Looking for something more specific? Individual terpene CRMs are available too.

Terpenes					
Component	CAS #	Concentration	Volume	Matrix	Part #
Bisabolene	495-62-5	1,000 µg/mL	1 mL	Methanol-P&T	S-502
(-)-alpha-Bisabolol	23089-26-1	1,000 µg/mL	1 mL	Methanol	S-7598
Borneol	507-70-0	1,000 µg/mL	1 mL	Methanol-P&T	S-4570
(+)-Borneol	464-43-7	1,000 µg/mL	1 mL	Methanol-P&T	S-5093
(-)-Borneol	464-45-9	1,000 µg/mL	1 mL	Methanol	S-7587
D-Camphene	5794-03-6	1,000 µg/mL	1 mL	Methanol-P&T	S-710
Camphene (mix of isomers)	79-92-5	1,000 µg/mL	1 mL	Methanol	S-7599
Camphor	76-22-2	1,000 µg/mL	1 mL	Methanol-P&T	S-3925
(1R)-(+)-Camphor	464-49-3	1,000 µg/mL	1 mL	Methanol	S-7600
(1S)-(-)-Camphor	464-48-2	1,000 µg/mL	1 mL	Methanol	S-7601
3-Carene	13466-78-9	1,000 µg/mL	1 mL	Methanol-P&T	S-4171
(1S)-(+)-3-Carene	498-15-7	1,000 µg/mL	1 mL	Methanol	S-7602
trans-Caryophyllene	87-44-5	1,000 µg/mL	1 mL	Methanol	S-5690
(-)-Caryophyllene oxide	1139-30-6	1,000 µg/mL	1 mL	Methanol	S-7584
alpha-Cedrene	469-61-4	1,000 µg/mL	1 mL	Methanol	S-5691
(+)-Cedrol	77-53-2	1,000 µg/mL	1 mL	Methanol	S-7603
Citronellol	106-22-9	1,000 µg/mL	1 mL	Methanol-P&T	S-4868
(1R)-endo-(+)-Fenchyl alcohol	2217-02-9	1,000 µg/mL	1 mL	Methanol	S-7604
2-Ethyl-Fenchol	18368-91-7	1,000 µg/mL	1 mL	Ethanol	S-4952
Ethylenediamine	107-15-3	1,000 µg/mL	1 mL	HPLC-Grade Water	LCS-1961
Eucalyptol	470-82-6	1,000 µg/mL	1 mL	Methanol	S-4352
Farnese (mix of isomers)	502-61-4	1,000 µg/mL	1 mL	Methanol-P&T	S-1989
Fenchone	1195-79-5	1,000 µg/mL	1 mL	Methanol-P&T	S-4569
(+)-Fenchone	4695-62-9	1,000 µg/mL	1 mL	Methanol	S-7585
L(-)-Fenchone	7787-20-4	1,000 µg/mL	1 mL	Methanol-P&T	S-5091
Geraniol	106-24-1	1,000 µg/mL	1 mL	Methanol-P&T	S-4866
Geranyl acetate	105-87-3	1,000 µg/mL	1 mL	Methanol	S-7605
Guaiol	489-86-1	1,000 µg/mL	1 mL	Methanol-P&T	S-5698
Hexahydrothymol	89-78-1	1,000 µg/mL	1 mL	Methanol	S-7588

Terpene Singles (continued)

Terpenes (continued)					
Component	CAS #	Concentration	Volume	Matrix	Part #
alpha-Humulene	6753-98-6	1,000 µg/mL	1 mL	Methanol	S-5692
Isobomeol	124-76-5	1,000 µg/mL	1 mL	Methanol	S-4674
Isoprene	78-79-5	1,000 µg/mL	1 mL	Methanol-P&T	S-2300
p-Isopropyltoluene	99-87-6	1,000 µg/mL	1 mL	Methanol-P&T	S-2320
(-)-Isopulegol	89-79-2	1,000 µg/mL	1 mL	Methanol	S-7606
(R)-(+)-Limonene	5989-27-5	1,000 µg/mL	1 mL	Methanol-P&T	S-4021
Linalool	78-70-6	1,000 µg/mL	1 mL	Methanol	S-5133
Maltitol	585-88-6	1,000 µg/mL	1 mL	LCMS-Grade Water	LCS-4348
Maltotriose	1109-28-0	1,000 µg/mL	1 mL	HPLC-Grade Water	LCS-4859
p-Mentha-1,5-diene	99-83-2	1,000 µg/mL	1 mL	Methanol	S-4173
Menthol	2216-51-5	1,000 µg/mL	1 mL	Methanol-P&T	S-4669
beta-Myrcene	123-35-3	1,000 µg/mL	1 mL	Hexane	S-2654
Nerol	106-25-2	1,000 µg/mL	1 mL	Methanol	S-7607
cis-Nerolidol	3790-78-1	1,000 µg/mL	1 mL	Methanol	S-7608
trans-Nerolidol	40716-66-3	1,000 µg/mL	1 mL	Methanol	S-7609
Ocimene (mix of isomers)	13877-91-3	1,000 µg/mL	1 mL	Methanol	S-7515
alpha-Pinene	80-56-8	1,000 µg/mL	1 mL	Methanol-P&T	S-4172
beta-Pinene	127-91-3	1,000 µg/mL	1 mL	Methanol-P&T	S-3142
(+)-Pulegone	89-82-7	1,000 µg/mL	1 mL	Methanol	S-5136
Sabinene	3387-41-5	1,000 µg/mL	1 mL	Methanol	S-6645
Sabinene hydrate	546-79-2	1,000 µg/mL	1 mL	Methanol	S-7610
Terpineol (mix of isomers)	8000-41-7	1,000 µg/mL	1 mL	Methanol	S-7611
alpha-Terpineol	10482-56-1	1,000 µg/mL	1 mL	Acetone	S-3356-AC
alpha-Terpineol	98-55-5	1,000 µg/mL	1 mL	Methanol-P&T	S-4145
alpha-Terpinene	99-86-5	1,000 µg/mL	1 mL	Methanol	S-5687
gamma-Terpinene	99-85-4	1,000 µg/mL	1 mL	Methanol	S-5688
2,6,10,14-Tetramethylpentadecane	1921-70-6	1,000 µg/mL	1 mL	Tetrachloroethylene	LCS-3125-TETCHET
Valencene	4630-07-3	1,000 µg/mL	1 mL	Methanol	S-7612

Proficiency Testing

Terpenes proficiency testing offered by Antylia Scientific's newest company, NSI Lab Solutions, includes terpene standards in hemp matrix, multi-component mixtures, and hemp oil. Proficiency test sample set is supplied as blank matrix and a certified spiking solution containing at least 8 terpenes per study. NSI Lab Solutions is an ISO/IEC 17043 accredited provider of proficiency tests.

Proficiency Tests for Terpenes - On-Demand and Scheduled Versions Available

Description	Components	Matrix	Part #
Quantitative Terpenoids PT - Hemp	2 x 1.6 mL + Hemp	Hemp, dried	CMPT-024
Quantitative Terpenoids PT Express - Hemp	2 x 1.6 mL + Hemp	Hemp, dried	CMPT-024B
Quantitative Terpenoids PT - Hemp Oil	2 x 1.6 mL + Hemp oil	Hemp oil	CMPT-080
Quantitative Terpenoids PT Express - Hemp Oil	2 x 1.6 mL + Hemp oil	Hemp oil	CMPT-080B

2022 PT Study Schedule

Study Number	Opens	Closes
HEMP-0322	March 15, 2022	April 28, 2022
HEMP-0922	September 20, 2022	November 3, 2022

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