AROMATICS DATA

GC-MS BATCH SUMMARY

Batch PMT-121

November 20, 2026

Peppermint Essential Oil

Mentha x piperita

Essential Oil

DISTILLATION DATE	EXTRACTION	CULTIVATION	COUNTRY OF ORIGIN
September 1, 2026	**Steam Distilled**	**Organically Grown**	**Italy**

TOP 5 COMPONENTS

of 73 measured

menthol	Monoterpenol	**39.71%**
menthone	Ketone	**15.34%**
menthyl acetate	Ester	**6.04%**
1,8-cineole	Oxide	**6.02%**
neomenthol	Monoterpenol	**3.26%**

Peppermint (Mentha × piperita) batch PMT-121 comes from organically grown plants in Italy and was steam distilled in September 2026. Its aroma is fresh, bright, and distinctly cooling, with the familiar crispness of menthol balanced by a subtle green sweetness.

This batch reflects the characteristic aromatic profile of Italian Peppermint, with a refreshing intensity that makes it a versatile choice for aromatic blending.

As with every essential oil we source, batch PMT-121 has been independently GC-MS tested to verify its chemical composition.

The complete GC-MS report and Certificate of Analysis are available to download, providing full transparency into the oil's quality and composition.

CHEMISTRY HIGHLIGHTS

GC-MS analysis of batch PMT-121 identified 73 components, led by menthol (39.71%) and menthone (15.34%), both close to the averages of our ten previously analyzed Peppermint batches. Menthyl acetate

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(6.04%) and 1,8-cineole (6.02%) are also prominent. Monoterpenols account for 47.49% of the oil, while ketones represent 21.21%.

One interesting feature is the presence of all four menthol diastereomers: menthol, neomenthol (3.26%), isomenthol (0.80%), and neoisomenthol (0.25%). The analysis also identifies several related acetates, including menthyl acetate (6.04%), neomenthyl acetate (0.34%), and isomenthyl acetate (0.28%), revealing additional detail within the oil's menthol chemistry.

Three components stand out above the ranges recorded in our previous analyses: 1,8-cineole at 6.02% (previously 4.00–5.58%), d-limonene at 2.91% (1.84–2.00%), and terpinen-4-ol at 1.53% (0.60–1.02%). Meanwhile, menthofuran is comparatively lower at 3.14%, against a ten-batch average of 5.07%.

Together, these variations give PMT-121 its own chemical fingerprint while maintaining the familiar menthol-rich profile of Peppermint.

Full composition · 73 components across 10 families

Monoterpenol	**47.49%**
menthol	39.71%
neomenthol	3.26%
terpinen-4-ol	1.53%
(E)-sabinene hydrate	0.80%
isomenthol	0.80%
linalool	0.47%
α-terpineol	0.30%
neoisomenthol	0.25%
isopulegol	0.14%
(E)-p-menth-2-en-1-ol	0.08%
(Z)-sabinene hydrate	0.07%
(Z)-p-Menth-2-en-1-ol	0.07%
(E)-piperitol	0.01%
Ketone	**21.21%**
menthone	15.34%
isomenthone	2.71%

pulegone	2.63%
piperitone	0.48%
(Z)-jasmone	0.03%
3-methylcyclohexanone	0.01%
β-thujone	0.01%
Monoterpene	**7.15%**
limonene (d)	2.91%
β-pinene	1.05%
α-pinene	0.59%
γ-terpinene	0.55%
sabinene	0.46%
α-terpinene	0.34%
β-myrcene	0.30%
β-phellandrene	0.28%
(Z)-β-ocimene	0.22%
isoterpinolene	0.16%
p-cymene	0.12%
alloocimene	0.08%
α-thujene	0.04%
pseudolimonene	0.03%
camphene	0.02%
Sesquiterpene	**6.48%**
germacrene D	2.31%
β-caryophyllene	2.13%
(E)-β-farnesene	0.47%
β-bourbonene	0.26%
bicyclogermacrene	0.25%
β-copaene	0.22%
β-elemene	0.20%

δ-elemene	0.19%
α-caryophyllene	0.15%
(Z)-hex-3-en-1-ol	0.13%
α-copaene	0.06%
δ-cadinene	0.06%
γ-muurolene	0.05%
Ester	**6.42%**
menthyl acetate	6.04%
isomenthyl acetate	0.28%
(Z)-3-hexenyl isovalerate	0.04%
2-methylbutyl 2-methylbutyrate	0.03%
3-octyl acetate	0.03%
Oxide	**6.09%**
1,8-cineole	6.02%
linalool (Z)-oxide	0.04%
caryophyllene oxide	0.03%
Ether	**3.14%**
menthofuran	3.14%
Sesquiterpenol	**0.77%**
viridiflorol	0.36%
3-octanol	0.27%
1-octen-3-ol	0.13%
spathulenol	0.01%
Other	**0.59%**
neo-menthyl acetate	0.34%
edulan ii, dihydro-	0.06%
1-hexanol	0.05%
cis-para-mentha-1(7),8-dien-2-ol	0.04%
2,3-butanediol	0.02%

2,5-Diethyltetrahydrof...an	0.02%
neo-isoisopulegyl acetate	0.02%
1-tetradecene	0.02%
octane	0.01%
3-Hexanone	0.01%
Phenol	**0.10%**
carvacrol	0.06%
eugenol	0.04%