



## ESSENTIAL OIL SINGLES

## Black Spruce Oil

Picea mariana

## BATCH NUMBER

BSP-116

## COUNTRY OF ORIGIN

Canada

## EXTRACTION DATE

September 2021

## Gas Chromatography Analysis (%)

## MONOTERPENE

$\alpha$ -pinene	18.79%	camphene	14.41%
$\delta$ -3-carene	10.57%	$\beta$ -pinene	7.98%
$\beta$ -myrcene	3.80%	limonene (I)	3.23%
$\beta$ -phellandrene	1.95%	santene	1.81%
tricyclene	1.42%	terpinolene	0.87%
p-cymene	0.38%	$\alpha$ -phellandrene	0.27%
$\alpha$ -thujene	0.27%	$\gamma$ -terpinene	0.22%
$\alpha$ -terpinene	0.20%	sabinene	0.14%
(Z)- $\beta$ -ocimene	0.02%	(E)- $\beta$ -ocimene	0.01%

## ESTER

bornyl acetate	20.07%	isobornyl acetate	0.65%
camphene hydrate	0.47%	geranyl acetate	0.18%

**MONOTERPENOL**

borneol	1.29%	$\alpha$ -terpineol	0.91%
linalool	0.46%	terpinen-4-ol	0.37%
endo-fenchyl acetate	0.28%	(E)-pinocarveol	0.21%
citronellol	0.16%	p-cymen-8-ol	0.05%
geraniol	0.04%		

**SESQUITERPENE**

$\delta$ -cadinene	1.09%	$\gamma$ -cadinene	0.38%
$\beta$ -caryophyllene	0.35%	$\alpha$ -muurolene	0.31%
longifolene	0.23%	(E)- $\alpha$ -bisabolene	0.20%
germacrene D	0.15%	$\alpha$ -cadinene	0.08%
$\alpha$ -caryophyllene	0.08%	$\beta$ -elemene	0.08%
$\alpha$ -selinene	0.03%		

**KETONE**

camphor	0.16%	verbenone	0.04%
fenchone	0.03%	carvone	0.02%

**SESQUITERPENOL**

$\alpha$ -cadinol	0.23%
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**ALDEHYDE**

citronellal	0.03%	geranial	0.02%
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