

## Component Analysis

Institute of Pine Grace  
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1. Product name *Picea glehnii* essential oil (registered name as a cosmetic material:  
*Picea glehnii* leaf oil)

2. Result of Analysis

Results of component analysis by gas chromatography-mass spectrometer (GCMS) of *Picea glehnii* essential oil

Figure of GC-MS chromatography

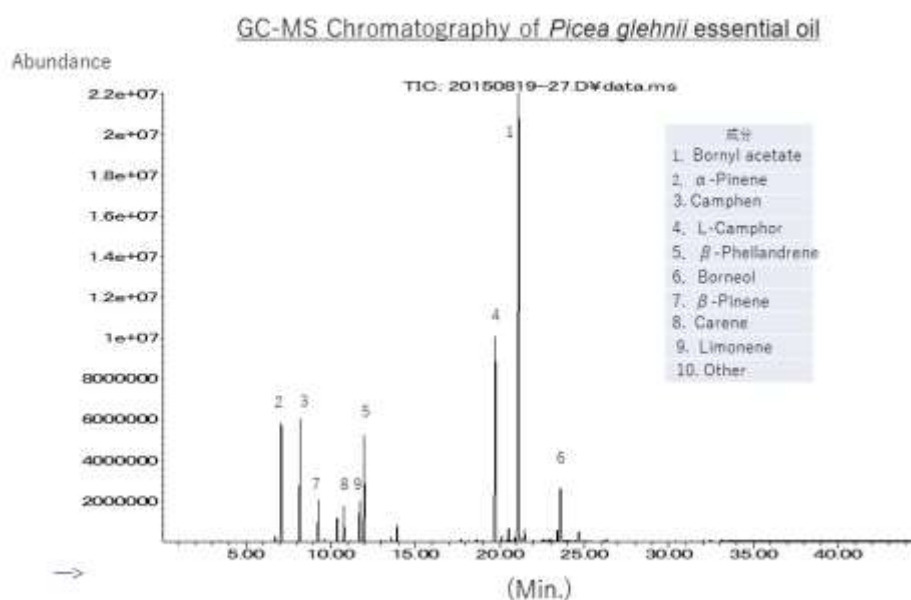


Table of components

	Components	Strucural	molecular formula	Mass	Retention Time	CAS Number	Content (%)
1	Bornyl acetate	Bicyclo[2.2.1]heptan-2-ol, 1,7,7-trimethyl-, acetate, (1S-endo)-	C <sub>12</sub> H <sub>20</sub> O <sub>2</sub>	196.29	21.095947	5655-61-8	47
2	$\alpha$ -Pinene	(1R)-2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene	C <sub>10</sub> H <sub>16</sub>	136.23	7.1071177	7785-70-8	16
3	Camphene	Camphene	C <sub>10</sub> H <sub>16</sub>	136.23	8.205352	79-92-5	14
4	DL-Camphor	(+)-2-Bornanone	C <sub>10</sub> H <sub>16</sub> O	152.24	19.714815	464-49-3	9
5	$\beta$ -Phellandrene	.beta.-Phellandrene	C <sub>10</sub> H <sub>16</sub>	136.23	11.988685	555-10-2	5
6	Borneol	endo-Borneol	C <sub>10</sub> H <sub>18</sub> O	154.25	23.587275	507-70-0	3

7	$\beta$ -Pinene	Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-	C <sub>10</sub> H <sub>16</sub>	136.23	9.288757	18172-67-3	3
8	3-Carene	3-Carene	C <sub>10</sub> H <sub>16</sub>	136.23	10.387802	13466-78-9	2
9	Limonene	D-Limonene	C <sub>10</sub> H <sub>16</sub>	136.23	11.733085	5989-27-5	1
10	Other						trace

The main components of 9 prefectures are shown. Neither applies to designated chemical substances.