



NHR ORGANIC OILS  
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*Product Specification*  
**Organic Scotch Pine Needle Essential Oil**  
*(Pinus sylvestris)*

<b>Product name:</b>	PINE ESSENTIAL OIL
<b>INCI:</b>	Pinus sylvestris Leaf Oil
<b>CAS number:</b>	84012-35-1 / 8023-99-2
<b>EC number:</b>	281-679-2
<b>FEMA number:</b>	2906
<b>HS Code:</b>	3301 29 41
<b>Food grade:</b>	FDA Regulation FDA PART 172 -- FOOD ADDITIVES PERMITTED FOR DIRECT ADDITION TO FOOD FOR HUMAN CONSUMPTION Sec. 172.510 Natural flavoring substances and natural substances used in conjunction with flavors.  IOFI: listed in Part 2 of the IOFI GRL as natural complex substance that have undergone a safety evaluation and have been reviewed and determined to be safe for flavor use in food
<b>COE:</b>	341
<b>Cosmetics grade:</b>	Compliant with Cosmetics regulations; IFRA certificate / Allergens table, etc. available upon request
<b>Classification:</b>	Natural substance
<b>Authenticity:</b>	100% pure and natural product
<b>Part of plant used:</b>	Needles of pine
<b>Method of manufacture:</b>	Steam distillation
<b>Country of origin:</b>	Bulgaria
<b>Appearance:</b>	Easy flowing clear liquid
<b>Colour:</b>	Light yellow to yellow-green
<b>Aroma:</b>	Pleasant, balm-like fresh, typical of white pine

<b><u>PHYSICO-CHEMICAL INDICES:</u></b>	
Relative density, g/cm <sup>3</sup> :	From 0.860 to 0.870
Refractive index (20 °C):	From 1.4725 to 1.4765
Optical rotation (20 °C), °:	From -19 to -25
Solubility in 90% ethanol (V/V):	1:10
Acid value, mg KOH/g:	No more than 1
Ester value, mg KOH/g:	From 5 to 15
Content of esters such as bornyl acetate, %:	From 2 to 5.5
Flash point, °C:	41.5
<b><u>CONTENT OF MACROCOMPOUNDS, % (by Gas – Chromatography):</u></b>	
A-pinene	More than 30
B-pinene	More than 15
Storage:	Keep in well-sealed containers at 5 – 20 °C, away from sources of heat and direct light.