

**Technical Data Sheet – Nigella Sativa Seed Extract**

Product: <b>Nigella Sativa Seed Oil extract</b>		Edition date: 2014-09-16
CAS – No. 90064-32-7		Updating: 2014-09-16
<b>General information</b>		
Plant extract from seeds prepared with supercritical CO <sub>2</sub> . The product is a mixture of natural vegetable oils – linoleic, oleic, palmitic and other oils of higher content of unsaturated fatty acids.		
<b>Product characteristics</b>		
The product of liquid oil consistency is prepared in an extraction process with supercritical carbon dioxide. It contains all lipophilic compounds comprised in Nigella sativa seeds which are soluble in carbon dioxide.		
<b>Product specification</b>		
<i>Composition characteristics</i>		
Thymoquinone [% m/m]	2,5 - 5	
p-cymene [% m/m]	5.2	
Thymol [% m/m]	2.6	
Profile of fatty acids, including:		
Palmitic acid [% m/m]	10.8	
Stearic acid [% m/m]	2.5	
Oleic acid [% m/m]	24.2	
Linoleic acid [% m/m]	51.6	
Myristic acid [% m/m]	0.18	
Eicosadienoic acid [% m/m]	2.8	
<i>Organoleptic properties</i>		
Form – physical state	Uniform oily liquid	
Colour	Light yellow	
Consistency	Liquid	
Odour	None	
<i>Physico-chemical properties</i>		
Density (at 25 °C)	0,907 g /cm <sup>3</sup>	
Solubility in water	Insoluble	
Solubility in other solvents	Well soluble in fatty phases	
Solvent content	No traces of the solvent	
Microtoxin content	B1 aflatoxin and the sum of B1, B2, G1, G2 aflatoxins are monitored in raw materials. Extract production technology does not increase the residual content of microtoxins	
Heavy metal content	In agreement with the regulation of Health Minister of 23.12.2010 concerning specification and purity criteria of additives. (Dz.U. 2011, No. 2, item 3, with consecutive changes). Product classification: E 570 Fatty acids	



Residual content of pesticides	In agreement with (EC) Regulation of the European Parliament and the Council No.396/2005 of 23.02.2005 concerning the highest allowable residual levels of pesticides in food and animal feed stuff of plant and animal origin and on their surface, amending the Council Directive No. 91/414/EEC, with consecutive changes
<b>Specification of the supercritical process</b>	
Carbon dioxide	For consumption purposes
Extraction temperature	35-50°C
Extraction pressure	250-300 bar
<b>Product appropriation</b>	
Application in food, cosmetic, and pharmaceutical industries. Supercritical CO <sub>2</sub> extract from Nigella sativa seeds is an intermediate for food industry without further thermal treatment.	
<b>Packing method</b>	
A single plastic packing with quality certificate and conformity declaration. Multipack: cardboard box.	
<b>Storage and expiry date</b>	
Store in a dark and cool place (3 – 4°C), in a tight container. Protect against light, air and humidity. Avoid product heating and open fire sources. Shelf life: 12 months.	
<b>Safety</b>	
Produced extracts from small fruit seeds are products of natural origin which can be consumed and they meet requirements of HACCAP system. They do not contain compounds which are classified as hazardous for people and the natural environment.	
<b>Analytical methods</b>	
Important extract parameters and components are determined with two methods: <ul style="list-style-type: none"><li>• titration method according to standard: PN-EN ISO 660:2010</li><li>• chromatographic method (GC) according to standard: PN-EN ISO 5508:1996</li></ul>	
<b>Technical assistance</b>	
We are ready to help you prepare plant extracts with supercritical CO <sub>2</sub> . <ul style="list-style-type: none"><li>• We offer help in pilot plant studies.</li><li>• We offer professional analytical services.</li><li>• We give access to information data sheets of extracts produced in Biovico. They contain all available and useful information necessary to determine and apply suitable means of risk control (according to clause 32 of EC Regulation 1207/2006).</li></ul>	