



**«BIOLER» LLP**  
**Scientific & Manufacturing Enterprise**

FOOD, FEED, PHARM. PHOSPHOLIPIDS. SUNFLOWER PHOSPHOLIPIDS TECHNOLOGY

**QUALITY CERTIFICATE**

Deoiled sunflower lecithin  
 TUU 21.1-38873237-001:2013

Name of the examination by TUU 21.1-38873237-001:2013	Character and standard	Results
Outward appearance	Free flowing powder without inclusions	<b>appropriate</b>
Smell and taste	Without smell and taste. The presence of slight smell and taste of oil are permissible	<b>appropriate</b>
Color	From yellow-gray to yellow-brown	<b>appropriate</b>
Mass percentage of moisture, n/m	1.4	<b>1.2</b>
Mass percentage of oil, n/m	1.5	<b>1.1</b>
Peroxide amount of extracted oil, mmol/kg ½O <sub>2</sub> , n/m	10.0	<b>10.0</b>
Acid amount, mg KON/g, n/m	32.0	<b>15.0</b>
Mass percentage of substances indissoluble in toluene, n/m	2.0	<b>0.6</b>
Mass percentage of phospholipids, n/l	95.1	<b>97.1</b>
pH 1% water solution	6-7	<b>6.4</b>
Maintenance of toxic elements, mg/kg, n/m:		
lead	1.0	<b>&lt; 0.14</b>
cadmium	0.05	<b>&lt;0.039</b>
arsenic	1.0	<b>&lt; 0.1</b>
mercury	0.02	<b>&lt; 0.0145</b>
Aflatoxin B1	0.005	<b>&lt; 0.005</b>
Microbiological data:		
E coli in 0,01 g	absent	<b>appropriate</b>
Salmonella in 25 g	absent	<b>appropriate</b>
Radionuclides, Bk/kg, n/m		
<sup>137</sup> Cs	150	<b>&lt; 7.0</b>
<sup>90</sup> Sr	50	<b>&lt; 15.2</b>

The product corresponds of requirements of TUU 21.1-38873237-001:2013.

Guarantee term of keeping: min 12 months after production when stored in original packages at a cold and dry place.

Deputy Director on Research

Dr Andrey Glukh