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Shaanxi Guanjie Technology Co., Ltd(factory)

### Certificate of Analysis

<b>Product Name</b>	Phosphatidylserine(sunflower)	<b>Manufacture Date</b>	Nov. 20th, 2022
<b>Batch No.</b>	PH221120	<b>Certificate Date</b>	Nov. 25th, 2022
<b>Batch Quantity</b>	1510kgs	<b>Expiration Date</b>	Nov. 19th, 2024
<b>Storage Condition</b>	Store in cool & dry place, Keep away from strong light and heat.		

Item	Specification	Result	Method
<b>Basic Product Information</b>			
Genus and Species	<i>Helianthus annuus</i>	Conform	/
Part of the Plant	Seed	Conform	/
Country of Origin	Ukraine	Conform	/
<b>Marker Compounds</b>			
L- $\alpha$ -Phosphatidyl-L-serine	>20.0%	22.15%	HPLC-ELSD
L- $\alpha$ -Phosphatidylcholine	<15.0%	10.12%	HPLC-ELSD
<b>Organoleptic Data</b>			
Appearance	Fine Powder	Conform	Visual
Color	Light Yellow	Conform	GB/T 5492-2008
Odor	Characteristic	Conform	GB/T 5492-2008
Taste	Characteristic	Conform	GB/T 5492-2008
<b>Physical Characteristics</b>			
Solubility	Soluble in chloroform, n-hexane, diethyl ether, Petroleum ether; Insoluble in water, ethanol, methanol.	Conform	Visual
Peroxide value	<5.0 meq/kg	Conform	CP2010
Particle Size	>98.0% pass 40 mesh	Conform	GB/T 5507-2008
Loss on drying	<2.0%	0.56%	GB 5009.3
Acetone insolubility substance	>95.0%	Conform	SN/T 0802.2
Solvent Residue (ethanol)	<2000ppm	Conform	Q/GJSW 0002S-2016
<b>Heavy Metals</b>			
Total Heavy Metals	<10.0 ppm	Conform	USP <231>, method II
As	<2.0 ppm	Conform	GB 5009.11
Pb	<2.0 ppm	Conform	GB 5009.12
Cd	<0.5 ppm	Conform	GB 5009.15
Hg	<0.5 ppm	Conform	GB 5009.17
<b>Microbiology</b>			
Total Plate Count	<1,000cfu/g	150cfu/g	GB 4789.2
Mold	<50cfu/g	10cfu/g	GB 4789.15
E. Coli	<10cfu/g	Negative	GB 4789.3
Salmonella	Negative	Negative	GB 4789.4
<b>Non-GMO</b>			
Non-GMO	Conform	Conform	SN/T 1195-2003

**Conclusion: Complies with specification**

**Tested by:** Liu gang

**Date:** 2022.11.25

**Approved by:** Susan Sun, Ph.D

**Date:** 2022.11.25



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