

CERTIFICATE OF ANALYSIS

IDENTIFICATION:

• Product name:	QRILL™ Antarctic Phospholipid Oil
• Product number:	43020046
• Batch number:	A102416
• Manufacturing date:	08/APR/2022
• Shelf life / retest date:	07/APR/2027*
• Country of origin:	United States of America
• Manufacturing site:	Aker BioMarine Manufacturing L.L.C. , 4494 Campbell Road, Houston, TX 77041, US
• Harvesting position:	64°28S 61°37W

ANALYTICAL SPECIFICATION:

PARAMETER	METHOD/INSTRUMENT	ACTUAL VALUE	LIMIT	UNIT
PHYSICAL / CHEMICAL				
Appearance	Visual	Dark red viscous oil	Dark red viscous oil	
Viscosity at 35°C	Rotational viscometer	410	>=100 <=1000	mPaS
Total phospholipids	³¹ P NMR	44	>= 30	g/100 g
Phosphatidylcholines	1) ³¹ P NMR	40	>= 18	g/100 g
Choline	³¹ P NMR	6	>= 3	g/100 g
Total omega-3 fatty acids	AKBM-AM-02	27.7	>= 17.0	g/100 g
EPA	AKBM-AM-02	11.9	>= 8.0	g/100 g
DHA	AKBM-AM-02	7.5	>= 5.0	g/100 g
Peroxide value	AOCS Cd 8b-90	< 1	<= 10	mEq peroxide/kg
Astaxanthin	FCC / USP-NF (UV)	316	>= 100	µg/g
Water	Karl Fischer	1	<= 3	g/100 g
Water activity at 25°C	Moisture probe	0.2	<= 0.7	
Ethanol	GC	1	<= 3	g/100 g
MICROBIOLOGICAL				
Total plate count	AOAC 990.12	< 10	< 1000	cfu/g
Mould and yeast	FDA-BAM, 7th ed.	< 10	< 100	cfu/g
Coliform	AOAC 991.14	< 10	< 10	cfu/g
E. coli	USP-NF, 62	Negative	Negative	In 10 g sample
Salmonella	AOAC-RI100201 (PCR)	Negative	Negative	In 25 g sample

*The batch has been evaluated in Dec 2024 the shelf life has been extended.

1) Phosphatidylcholines value quoted includes phosphatidylcholines and lysophosphatidylcholines.

**HANDLING AND STORAGE**

Store this product below 25 °C (77 °F), protected from sunlight, in its original packaging container. During transportation this product can be stored at ambient temperature. Containers, opened for sampling should be headspace flushed with inert gas prior to storage. Due to the high viscosity of this product and possible stratification during storage, this product should be agitated before use or sampling. The viscosity may be reduced by heating up to 35 °C (95 °F) and /or gently stirring if necessary.

APPLICATION

This product is of animal origin and for use in pet and terrestrial animal nutrition only.

	Printed name	Signature	Position in company	Date
Approved by	Norman Lee	<i>Yung-chih Lee</i>	QA Manager	18/DEC/2024