



Macco Organiques, s.r.o.
Innovative organics, it's a matter of life.

CERTIFICATE OF ANALYSIS
No.: FCH0402 (20/2024/241517)-2025
Zinc sulfate heptahydrate
Ph. Eur. 11th, USPNF 2024 Issue 3

Customer: Kirsch Pharma España Spain		
Order No.	4500082837	
Batch No.	ZSH 0217	
Manufacturing Date	1.4.2024	
Retest Date	1.4.2027	
Appearance and Solubility (Ph. Eur.): white or almost white, crystalline powder or colourless, transparent crystals. Very soluble in water, practically insoluble in ethanol (90 per cent). Description and Relative Solubility (USPNF): colorless, transparent prisms, or small needles. May occur as a white, granular, crystalline powder. Very soluble in water and in glycerin insoluble in alcohol.		
Parameter	Specification	Result of Ph. Eur.
Identification	A: Sulfates	complies
	B: Zinc	complies
	C: Limits of the assay	complies
Assay	99.0 - 104.0 %	101.0 %
Appearance of solution	Clear and colourless	complies
pH	4.4 - 5.6	5.3
Chlorides	Max. 300 ppm	<300 ppm
Iron	Max. 100 ppm	<100 ppm
Parameter	Specification	Result of USPNF
Identification	A: Zinc	complies
	B: Sulfate	complies
Assay (ZnSO ₄ ·7H ₂ O)	99.0 - 108.7 %	99.5 %
ZnSO ₄	55.6 - 61.0 %	55.9 %
Arsenic	NMT 14 ppm	<14 ppm
Lead	NMT 20 ppm	<20 ppm
Alkalies and Alkaline Earth	NMT 5 mg (0.9%)	<0.9 %
<u>Specific tests:</u>		
Acidity	Corresponds to test	complies

Residual solvents*

Approved by Manager of Quality Control: Eliška Hepnarová

* No organic solvents are used in production, material meets the requirements of USP, Ph. Eur. and EMA/CHMP/ICH/82260/2006 for residual solvents.

Originally produced by **Macco Organiques, s.r.o., Czech Republic**

Eliška
Hepnarová

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