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Certificate of Analysis

Oct. 28, 2019

Product name : Zinc Sulfate Monohydrate (USP/FCC)
 CAS No. : 7446-19-7
 Country of Origin : Japan

Items	Specifications			Results	Test Methods
	USP	FCC	SHIN-YO	Lot No. 910091	
Solubility (Water)	-----	soluble	soluble	meets tests	FCC
Solubility (Alcohol)	-----	insoluble	insoluble	meets tests	FCC
Identification	positive	positive	positive #1	meets tests	FCC
Assay <Zn>	(36.0 ~ 36.6%)	(35.7 ~ 36.6%)	(36.0 ~ 36.6%)	36.34 %	USP
<ZnSO4>	89.0 ~ 90.4%	(88.2 ~ 90.4%)	89.0 ~ 90.4%	89.73 %	USP
<ZnSO4·H2O>	99.0 ~ 100.5%	98.0 ~ 100.5%	99.0 ~ 100.5%	99.75 %	USP
Acidity (1g→20ml)	not colored pink by M/O TS	not colored pink by M/O TS	not colored pink by M/O TS	meets tests (pH 5.8)	FCC
Alkalies and alkaline earths (as Sulfate Anhydrous)	≤ 0.8 % (0.9%/ZnSO4)	≤ 0.5 %	≤ 0.5 % #2	0.29 %	ICP-OES
Cadmium <Cd>	-----	≤ 0.0002 %	≤ 0.0002 %	< 0.0001 %	ICP-OES
Lead <Pb>	≤ 0.0018 % (20ppm/ZnSO4)	≤ 0.0004 %	≤ 0.0001 %	< 0.0001 %	ICP-OES
Mercury <Hg>	-----	≤ 0.0005 %	≤ 0.0005 %	< 0.0001 %	ICP-OES
Selenium <Se>	-----	≤ 0.003 %	≤ 0.003 %	< 0.0001 %	ICP-OES
Total heavy metals (Limit test) <Pb>	-----	-----	≤ 0.0002 %	meets tests	ICP-OES
Arsenic <As>	≤ 0.0013 % (14ppm/ZnSO4)	-----	≤ 0.0005 %	< 0.0001 %	ICP-OES
Odor	-----	-----	odorless	meets tests	
Aluminum <Al>	-----	-----	-----	0.0003 %	ICP-OES
Particle size through 16 mesh	-----	-----	-----	100 %	JIS
Particle size through 60 mesh	-----	-----	approx. 96 %	meets tests	JIS
Particle size through 100 mesh	-----	-----	approx. 75 %	meets tests	JIS
Bulk Density	-----	-----	approx. 1.2g/ml	meets tests	Loose/USP

#1 : A 1:20 solution gives positive tests for Zinc and for Sulfate. Appendix IIIA (FCC)
 #2 : Conversion value (CaSO4·MgSO4·Na2SO4·K2SO4)
 USP = United States Pharmacopeia, FCC = Food Chemicals Codex
 Meets Kosher requirement. Meets the Residual Solvents requirement.

Manufacturing Date : Sep. 9, 2019

Retest Date : Sep. 8, 2022

Q.C. Manager : Mitsunobu Omo

