



Cooper Natural Resources
 Cedar Lake Facility
 Sodium Sulfate
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**CERTIFICATE OF ANALYSIS
 NATURAL SODIUM SULFATE***

Date of Manufacture: 12/13/16

Product: STANDARD GRADE

Customer: BRENNTAG MID-SOUTH

Control # Bagger*

CHEMICAL ANALYSIS			TRACE METAL ANALYSIS			NOTES
Analyte	Spec	Actual	Element	Max	Actual	
Purity (% Na ₂ SO ₄)#3	99.0 min	99.7	Fe (ppm)#1	10	3	Note #1: These values are from weekly statistical control data.
NaCl (%)#2	0.7 max	0.27				
Water Insoluble (%)#1	0.2 max	0.01				
Na ₂ CO ₃ (%) #4	0.5 max	0.005				
As(ppm) # 4		0.23				
			PHYSICAL PROPERTIES			Note #2: These values are from analysis of samples taken from this shipment.
			pH (5% Solution)			
			27°C			
			80°C			
			Density (lbs/ft ³) #2		89.2	Note #3: Na ₂ SO ₄ is determined by difference (100 minus insoluble, minus MgSO ₄ , minus NaCl).
Optical Brightness			Moisture (%) #1	0.2	0.01	
			Appearance	white, crystalline		

SCREEN ANALYSIS								NOTES
Screen #		Retained On Screen (%)			Cumulative % Retained			
		Customer Specs		Actual	Customer Specs		Actual	
U.S.	Tyler	Min	Max		Min	Max		
20				0.0%			0.0%	Customer Spec Sheet, Revision Date: <u>6/13/06</u>
40				0.2%			0.2%	
60				9.5%			9.8%	
80				20.2%			29.9%	
100				20.1%			50.1%	
140				21.2%			71.3%	
200				11.6%			82.9%	
-200				17.1%			100.0%	
TOTAL				100.0%				

Comments: This product is certified to meet the limits of impurities (heavy metals, arsenic and selenium) of the Food Chemicals Codex Tenth Edition Specifications.

 REVIEWED BY

RLK

 ANALYZED BY