



# Saskatchewan Mining and Minerals Inc.

P.O. Box 120  
Chaplin, Saskatchewan  
Canada S0H 0V0

Phone: 306-395-2561  
1-800-667-9111  
Fax: 306-395-2546



SAI GLOBAL  
Quality  
ISO 9001

## ANHYDROUS SODIUM SULPHATE

**DETERGENT GRADE  
PRODUCT INFORMATION SHEET  
WITH TRACE CONSTITUENTS**  
Meets FCC and Kosher Requirements  
Effective: January 1, 2018

Location.....**Chaplin Plant**  
Material Source.....**Natural Lake Deposit**  
Process.....**Multiple Effect Evaporators**

**NOTE:** The chemical, screen and physical data are average values for production for a recent twelve month period and are not to be construed as guarantees. Individual shipments may be subject to normal variation from the typical.

### AVERAGE CHEMICAL ANALYSIS:

Sodium Sulphate.....	*Na <sub>2</sub> S <sub>04</sub>	99.40%
Calcium Sulphate.....	CaS <sub>04</sub>	0.06%
Magnesium Sulphate.....	MgS <sub>04</sub>	0.28%
Sodium Carbonate.....	Na <sub>2</sub> C <sub>03</sub>	0.00%
Sodium Bicarbonate.....	NaHC <sub>03</sub>	0.02%
Sodium Chloride.....	NaCl	0.23%
Water Insolubles.....		0.01%

\* Minimum 99.0% by Difference

### TYPICAL TRACE CONSTITUENTS:

Moisture.....		0.024%
Iron.....	Fe in ppm	1.487

### AVERAGE SCREEN ANALYSIS:

U.S. Screen Sieve Size	Percent of Total	Percent Cumulative
+ 20	0.3%	0.3%
- 20 + 40	1.8%	2.1%
- 40 + 60	11.0%	13.1%
- 60 + 100	38.2%	51.3%
- 100 + 200	36.0%	87.3%
- 200	12.7%	100.0%

### MATERIAL DATA:

Chemical Name.....Anhydrous Sodium Sulphate  
Chemical Formula.....Na<sub>2</sub>S<sub>04</sub>  
Molecular Weight.....142.04  
CAS Number.....7757-82-6

### PHYSICAL DATA:

Appearance.....White Granular Powder  
Specific Gravity.....2.7  
Melting Point.....882°C  
pH of Solution..... 6.08 @ 1% by weight  
6.54 @ 5% by weight  
7.00 @ 10% by weight  
Bulk Density.....87.71 lb/cu.ft Free Flow  
Solubility @ 20°C.....15.9 % by weight  
Reflectance.....91.0 avg ASTM E 97  
Angle of Repose.....32°

### NUTRITION DATA:

Sodium.....32.27%  
Sulphur.....22.53%  
Magnesium.....0.057%  
Calcium.....0.018%

### MISCELLANEOUS:

Packaging.....50 pound Bags and Supersacs  
Bulk Shipments.....100-114 ton Rail Hopper Cars  
and 25 - 50 ton Bulk Trucks  
Railroads.....Canadian Pacific Railway  
Canadian National Railway  
Food Chemicals.....Meets FCC Specifications,  
Tenth Edition, 2016  
Kosher.....Certified as Kosher  
ISO9001:2008.....Certified System - QMI SAI Global

The listed information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purpose.

Please contact us regarding any questions you may have concerning this information, or regarding any other data not detailed in this publication.

Information concerning the handling and use of this product is provided in the Material Safety Data Sheet (MSDS) available by contacting SASKATCHEWAN MINING & MINERALS INC. The MSDS must be fully read and understood prior to any exposure, handling or use of the product.

<b>TRACE CONSTITUENTS - Chaplin</b>				
<b>ELEMENT</b>	<b>SYMBOL</b>	<b>TEST METHOD</b>	<b>CONCENTRATIONS (ppm or ug/g)</b>	
ALUMINUM	Al	ICP-AES	2.0	TOTAL
ANTIMONY	Sb	ICP-MS	<0.2	TOTAL
ARSENIC	As	ICP-AES	<0.5	TOTAL
BORON	B	ICP-AES	2.4	TOTAL
BROMIDE	Br	ICP-AES	14	TOTAL
CADMIUM	Cd	ICP-AES	<0.001	INSOLS
CADMIUM	Cd	ICP-AES	0.001	SOLUBLE
CHROMIUM	Cr	ICP-AES	0.055	INSOLS
CHROMIUM	Cr	ICP-AES	0.004	SOLUBLE
COBALT	Co	ICP-AES	<0.001	INSOLS
COBALT	Co	ICP-AES	0.002	SOLUBLE
COPPER	Cu	ICP-AES	0.002	INSOLS
COPPER	Cu	ICP-AES	0.010	SOLUBLE
IRON	Fe	ICP-AES	1.44	INSOLS
IRON	Fe	ICP-AES	0.047	SOLUBLE
LEAD	Pb	ICP-AES	<0.002	INSOLS
LEAD	Pb	ICP-AES	<0.002	SOLUBLE
MANGANESE	Mn	ICP-AES	<0.1	TOTAL
MERCURY	Hg	AA	<0.002	TOTAL
NICKEL	Ni	ICP-AES	0.006	INSOLS
NICKEL	Ni	ICP-AES	0.034	SOLUBLE
PHOSPHORUS	P	ICP-AES	<1	TOTAL
PLATINUM	Pt	ICP-AES	<0.2	TOTAL
POTASSIUM	K	ICP-AES	240	
SELENIUM	Se	ICP-AES	<0.5	TOTAL
SILICON	Si	GRAVIMETRIC	12	INSOLS
TELLURIUM	Te	ICP-MS	<0.5	TOTAL
ZINC	Zn	ICP-AES	0.004	INSOLS
ZINC	Zn	ICP-AES	0.020	SOLUBLE

- AA TEST METHOD - Atomic absorption.
- ICP-AES TEST METHOD - Inductively coupled plasma - atomic emissions spectroscopy.
- ICP-MS TEST METHOD - Inductively coupled plasma - mass spectroscopy
- <0.001 denotes concentrations below the confident detection limits of the test used.
- PPM and UG/G are equivalent measurements.
- The above results were obtained for a single typical sample. Concentrations for individual shipments may vary from the above.