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ANHYDROUS SODIUM SULPHATE

DETERGENT GRADE PRODUCT INFORMATION SHEET WITH TRACE CONSTITUENTS

Meets FCC and Kosher Requirements
Effective: January 1, 2012

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 ₂ S ₀₄	99.33%
Calcium Sulphate.....	CaS ₀₄	0.10%
Magnesium Sulphate.....	MgS ₀₄	0.27%
Sodium Carbonate.....	Na ₂ C ₀₃	0.00%
Sodium Bicarbonate.....	NaHC ₀₃	0.06%
Sodium Chloride.....	NaCl	0.23%
Water Insolubles.....		0.01%

* Minimum 99.0% by Difference

TYPICAL TRACE CONSTITUENTS:

Moisture.....		0.042%
Iron.....	Fe in ppm	0.830

AVERAGE SCREEN ANALYSIS:

U.S. Screen Sieve Size	Percent of Total	Percent Cumulative
+ 20	0.2%	0.2%
- 20 + 40	1.4%	1.6%
- 40 + 60	8.9%	10.5%
- 60 + 100	35.1%	45.6%
- 100 + 200	41.6%	87.2%
- 200	12.8%	100.0%

MATERIAL DATA:

Chemical Name.....Anhydrous Sodium Sulphate
Chemical Formula.....Na₂S₀₄
Molecular Weight.....142.04
CAS Number.....7757-82-6

PHYSICAL DATA:

Appearance.....White Powder
Specific Gravity.....2.7
Melting Point.....882°C
pH of Solution..... 6.36 @ 1% by weight
7.24 @ 5% by weight
7.88 @ 10% by weight
Bulk Density.....87.46 lb/cu.ft Free Flow
Solubility @ 20°C.....15.9 % by weight
Reflectance.....90.2 avg ASTM E 97
Angle of Repose.....32°

NUTRITION DATA:

Sodium.....32.26%
Sulphur.....22.52%
Magnesium.....0.055%
Calcium.....0.029%

MISCELLANEOUS:

Packaging.....50 pound Bags and Supersacs
Bulk Shipments.....100 ton Rail Hopper Cars
and 25 - 50 ton Bulk Trucks
Railroads.....Canadian Pacific Railway
Canadian National Railway
Food Chemicals.....Meets FCC Specifications,
Seventh Edition, 2010
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 MINERALS. The MSDS must be fully read and understood prior to any exposure, handling or use of the product.

TRACE CONSTITUENTS - Chaplin				
ELEMENT	SYMBOL	TEST METHOD	CONCENTRATIONS (ppm or ug/g)	
ALUMINUM	Al	ICP-AES	0.6	TOTAL
ANTIMONY	Sb	ICP-MS	<0.2	TOTAL
ARSENIC	As	ICP-AES	<0.5	TOTAL
BORON	B	ICP-AES	2.9	TOTAL
BROMIDE	Br	ICP-AES	3.3	TOTAL
CADMIUM	Cd	ICP-AES	<0.001	INSOLS
CADMIUM	Cd	ICP-AES	<0.001	SOLUBLE
CHROMIUM	Cr	ICP-AES	0.008	INSOLS
CHROMIUM	Cr	ICP-AES	<0.001	SOLUBLE
COBALT	Co	ICP-AES	<0.001	INSOLS
COBALT	Co	ICP-AES	0.002	SOLUBLE
COPPER	Cu	ICP-AES	0.003	INSOLS
COPPER	Cu	ICP-AES	0.012	SOLUBLE
IRON	Fe	ICP-AES	0.69	INSOLS
IRON	Fe	ICP-AES	0.14	SOLUBLE
LEAD	Pb	ICP-AES	0.003	INSOLS
LEAD	Pb	ICP-AES	0.003	SOLUBLE
MANGANESE	Mn	ICP-AES	0.3	TOTAL
MERCURY	Hg	AA	<0.002	TOTAL
NICKEL	Ni	ICP-AES	0.007	INSOLS
NICKEL	Ni	ICP-AES	0.016	SOLUBLE
PHOSPHORUS	P	ICP-AES	2	TOTAL
PLATINUM	Pt	ICP-AES	<0.2	TOTAL
POTASSIUM	K	ICP-AES	390	
SELENIUM	Se	ICP-AES	<0.5	TOTAL
SILICON	Si	GRAVIMETRIC	6	INSOLS
TELLURIUM	Te	ICP-MS	<0.5	TOTAL
ZINC	Zn	ICP-AES	0.047	INSOLS
ZINC	Zn	ICP-AES	0.026	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.