Searles Valley Minerals

THREE ELEPHANT ®

Anhydrous Sodium Sulfate

Technical Information Bulletin 4100

Brand Name:	Anhydrous sodium sulfate
Chemical Name:	Anhydrous sodium sulfate
Also known as:	Salt cake
Formula:	Na_2SO_4
Molecular Weight:	142.04
CAS / TSCA No.:	7757-82-6 (EINECS #231-820-9)
Description:	White, granular, crystalline product
Grades:	Technical (Standard)

If you require guidance in developing product specifications, please contact Quality Assurance at qaclerk@svminerals.com

Properties

Chemical Analysis	Typical Range	Specification
Sodium Sulfate (Na_2SO_4)	99.0 - 99 .7 %	99.0 % min
Sodium Chloride (NaCl)	0.20 - 0.50 %	0.50 % max
Sodium Carbonate (Na_2CO_3)	0.10 - 0.50 %	0.50 % max
Boric Oxide (B_2O_3)	0.02 - 0.05 %	- - -
Iron (Fe)	0 - 10 ppm	- - -
Water Insoluble	0 - 20 ppm	- - -
Arsenic (As)	0 - 3 ppm	- - -

Physical Analysis		Specification
U.S. Standard Sieve No. *(% cum. retained)*		
+20		1 % max
Bulk Density (average) *(poured)*	96.8 lbs/ft^3	1550.6 kg/m^3

Note: All data in the above specification are determined by Searles Valley Minerals analytical methods.

Packaging

Multiwall Paper Bags:	25 kg
Semi-bulk Bags:	2,000 lb and 1,000 kg
Bulk:	Trucks and hopper cars

Handling

Information concerning the handling and use of this product is provided in a safety data sheet (SDS). The SDS must be fully read and understood prior to any exposure, handling, or use of the product.

ISO 9001 SVM's QMS is Certified to ISO 9001:2015

Theoretical Properties

The following properties are textbook theoretical data and are provided for convenience and reference only. These properties are not normally tested for the commercial product and no representation is made relative to the commercial product.

Theoretical Composition

Sodium	(Na)	32.38 %
Sulfate	(B)	67.62 %
as Sodium oxide	(Na_2O)	43.64 %
as Sulfur trioxide	(SO_3)	56.36 %

Melting Point

884°C

Specific Gravity @ 25°C

2.664

Specific Heat @ 25°C

30.64 cal/deg-mol

Heat of Solution @ 18°C

5.55 Kcal/g-mol *or* 22.03 Btu

Heat of Formation @ 25°C

-331.5 Kcal/kg *or* -1315.6 Btu

Heat of Hydration to decahydrate @ 18°C

-135.3 Kcal/kg *or* -536.9 Btu

Solubility in Water as Na_2SO_4 (Anhydrous Sodium Sulfate)*

Temperature as °C	Temperature as °F	Parts per 100 parts water	Percent by weight of saturated solution	Pounds per U.S. gallon of water
0	32	5.0	4.76	0.42
5	41	6.4	6.0	0.53
10	50	9.0	8.3	0.75
15	59	13.4	11.8	1.12
20	68	19.4	16.3	1.62
30	86	40.8	29.0	3.41
40	104	48.8	32.8	4.07
50	122	46.7	31.8	3.89
60	140	45.3	31.2	3.78
80	176	43.7	30.4	3.64
100	212	42.5	29.8	3.54
120	248	41.95	29.5	3.49

* A. Seidell
Solubilities of Inorganic & Metal Compounds
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ph in Water @ 20°C (68°F)

Percent by Weight	pH
1.0	9.7
5.0	9.8
10.0	9.8
Saturation	9.8

Angle of Repose, *horizontal*

35 degrees

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