

Anhydrous Sodium Sulfate

Technical Information Bulletin 4100

Brand Name: Anhydrous sodium sulfate
Chemical Name: Anhydrous sodium sulfate
Also known as: Salt cake
Formula: Na₂SO₄
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 (760) 372-2243

Properties

Chemical Analysis	Typical Range	Specification	Physical Analysis	Specification
			<i>U.S. Standard Sieve No. (% cum. retained)</i>	
Sodium Sulfate (Na ₂ SO ₄)	99.0 - 99.7 %	99.0 % min	+20	1 % max
Sodium Chloride (NaCl)	0.20 - 0.50 %	0.50 % max		
Sodium Carbonate (Na ₂ CO ₃)	0.10 - 0.50 %	0.50 % max		
Boric Oxide (B ₂ O ₃)	0.02 - 0.05 %	---		
Iron (Fe)	0 - 10 ppm	---		
Water Insoluble	0 - 20 ppm	---		
Arsenic (As)	0 - 3 ppm	---	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.

The information herein is believed to be reliable. However, no warranty, expressed or implied, is made as to its accuracy or completeness and none is made as to **MERCHANTABILITY** of the material or its **FITNESS FOR ANY PURPOSE**. The manufacturer shall not be liable for consequential damages or for damage to persons or property resulting from its use. Nothing herein shall be construed as a recommendation for use in violation of any patent.



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 ₂ O)	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 Na₂SO₄ (Anhydrous Sodium Sulfate)*

Temperature °C ^{as}		Parts per 100 parts water	Percent by weight of saturated solution	Pounds per U.S. gallon of water
°C	°F			
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
Vol. 1, p.1301

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