

Sulfate of Potash 0-0-50

Technical Information
Bulletin 1031T

Brand Name: THREE ELEPHANT® Sulfate of Potash
Chemical Name: Potassium Sulfate
Other Name: SOP
Formula: K_2SO_4
Molecular Weight: 174.27
CAS / TSCA No.: 7778-80-5
Description: Off-white powder
Grade: Soluble Fines

If you require guidance in developing product specifications, please contact Quality Assurance at (760) 372-2243

Properties

Chemical Analysis

	Typical Range	Specification
Potassium Oxide (K_2O)	52 %	50 % min
Sulfate (SO_4)	55.4 %	
Sulfur (S)	18.5 %	17 % min
Chloride (Cl)	0.04 %	0.10 % max
H_2O	0.15 %	
Insoluble	< 0.05 %	
pH	7	
Magnesium	8 ppm	
SGN	15	
UI	10	

Physical Analysis (typical)

U.S. Sieve No.	Opening (mm)	Cumulative %
+60	0.250	30 %
+100	0.149	60 %
+200	0.074	85 %
+325	0.044	92 %
Bulk Density (poured)	88-94 lbs/ft ³	

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

Packaging

Multiwall Paper Bags: 50 lb and 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.

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

Potassium	(K)	44.88 %
Sulfate	(SO ₄)	55.12 %
as Potassium oxide	(K ₂ O)	54.06 %
as Sulfur trioxide	(SO ₃)	45.95 %

Melting Point

1067°C

Specific Gravity @ 21°C

2.66

Specific Heat @ 25°C

31.39 cal/deg-mol

Heat of Solution @ 18°C

-37.57 Kcal/g-mol or -67.63 Btu

Heat of Formation @ 25°C

-342.66 Kcal/kg or -616.38 Btu

Solubility in Water as K₂SO₄ *

Temperature as		Parts per 100 parts water	Percent by weight of saturated solution	Pounds per U.S. gallon of water
°C	°F			
0	32	7.4	6.85	0.61
10	50	9.2	8.44	0.77
20	68	11.1	10.00	0.93
25	77	12.0	10.75	1.01
30	86	13.0	11.48	1.08
40	104	17.3	14.76	1.45
50	122	19.8	16.5	1.65
60	140	22.2	18.17	1.85
70	158	24.6	19.75	2.05
80	176	27.2	21.4	2.27
90	194	29.5	22.8	2.46
100	212	31.8	24.1	2.65
120	248	36.1	26.5	3.01

* A. Seidell

Solubilities of Inorganic & Metal Organic Compounds
3rd ed., Vol. 1, p. 859

ph in Water @ 20°C (68°F)

Percent by Weight	pH
1.0	7
5.0	7
10.0	7
Saturation	7