

# SODIUM SULFATE

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**SYNONYMS** Glauber's salt (decahydrate form); INS No. 514(i)

## DEFINITION

C.A.S. number 7757-82-6 (Anhydrous)  
7727-73-3 (Decahydrate)

Chemical formula  $\text{Na}_2\text{SO}_4 \cdot x\text{H}_2\text{O}$  (x = 0 or 10)

Formula weight 142.04 (Anhydrous)  
322.19 (Decahydrate)

Assay Not less than 99.0 % on the dry basis

## DESCRIPTION

**FUNCTIONAL USES** Acidity regulator

## CHARACTERISTICS

### IDENTIFICATION

Solubility (Vol. 4) Freely soluble in water; practically insoluble in ethanol

Test for sodium (Vol. 4) Passes Test

Test for sulfate (Vol. 4) Passes Test

### PURITY

Loss on drying (Vol. 4) Anhydrous: Not more than 1% (105°, 4 h)  
Decahydrate: Between 51.0% and 57.0% (105°, 4h)

Lead (Vol. 4) Not more than 2 mg/kg  
Determine using an AAS/ICP-AES technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on principles of methods described in Volume 4 (under "General Methods, Metallic Impurities").

Selenium (Vol. 4) Not more than 30 mg/kg  
Test 0.2 g of the sample as directed in the Limit Test (Method II)

**METHOD OF ASSAY** Weigh accurately about 0.5 g of the dried sample, dissolve in 200 ml of water, add 1 ml of hydrochloric acid and heat to boiling. Gradually add, in small portions and while stirring constantly, an excess of hot

barium chloride TS (about 10 ml), and heat the mixture on a steam bath for 1 h. Collect the precipitate on a filter, wash until free from chloride, dry, ignite and weigh. The weight of the barium sulfate so obtained, multiplied by 0.6086 corresponds to the equivalent amount of  $\text{Na}_2\text{SO}_4$ .