AuSaMicS™ Life Science

TECHNICAL DATA SHEET

AS-8015

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Sodium Selenite

Laboratory-grade inorganic selenium compound for analytical, research, and industrial formulation use.

OVERVIEW

Sodium Selenite (Na_2SeO_3, CAS 10102-18-8) is a white to almost white, deliquescent crystalline inorganic salt supplied by AuSaMicS Pty Ltd as a defined selenium reference compound for laboratory and industrial use. It is manufactured to consistent purity and composition, with each batch supported by supplier analytical testing and full traceability.

This material is sourced from Macsen Laboratories (Udaipur, India) and supplied by AuSaMicS Pty Ltd under quality-controlled conditions, with the supplier's Certificate of Analysis retained on file for each batch received.

KEY IDENTIFIERS

Catalogue Number	AS-8015
Chemical Name	Sodium Selenite
CAS Number	10102-18-8
EC Number	233-267-9
MDL Number	MFCD00003489
PubChem CID	24934
Molecular Formula	Na_2SeO_3
Molecular Weight	172.94 g/mol

TYPICAL SPECIFICATIONS

Parameter	Specification	Typical Result*
Assay (dry basis)	98.5% – 101.5%	99.40%
Selenium content (Se, dry basis)	≥ 45.0%	45.50%
Appearance	White to almost white, crystalline, deliquescent powder	Complies
Solubility	Freely soluble in water; practically insoluble in ethanol/ether	Complies
pH (5% aqueous solution)	9.8 – 10.8	10.31
Loss on drying (130°C)	≤ 0.5%	0.34%
Chlorides	≤ 50 ppm	< 50 ppm
Sulfates and selenates	≤ 50 ppm	Nil
Iron	≤ 50 ppm	< 50 ppm
Lead (Pb)	≤ 20 ppm	—
Arsenic (As)	≤ 10 ppm	—

Cadmium (Cd)	≤ 5 ppm	—
Mercury (Hg)	≤ 0.1 ppm	—

**Typical result reflects the most recent supplier Certificate of Analysis on file (Batch 060624, Macsen Laboratories). Individual batches are supplied with their own Certificate of Analysis — see COA document AS-8015 for the specific batch you have received. Heavy metal limits (Pb, As, Cd, Hg) are supplier specification limits; confirm batch-specific results on request.*

PHYSICAL & CHEMICAL PROPERTIES

Property	Value
Physical State	Solid, crystalline
Colour	White
Odour	Odourless
Melting Point	> 350°C (decomposes above ~300°C)
Density	3.1 g/cm³
Water Solubility	~90 g/100 mL at 20°C
Autoignition Temperature	> 400°C
Flammability	Not flammable

CHEMICAL ROLE

Sodium selenite is an oxyanion salt of selenium(IV) and functions as a soluble, bioavailable source of selenium in solution. In aqueous systems, the selenite ion (SeO_3^{2-}) is readily reduced by thiols (e.g. glutathione, cysteine) to elemental selenium or hydrogen selenide, a property exploited in redox chemistry, nanomaterial synthesis (selenide precursor), and selenium-supplementation research. It is used as a defined reference compound where consistent, traceable selenium content is required.

APPLICATIONS

Application Area	Use
Analytical & Reference Chemistry	Reference compound for selenium analysis (AAS, ICP-MS, spectrophotometry)
Redox Chemistry Research	Selenite reduction studies; selenium/selenide precursor chemistry
Materials Synthesis	Precursor for selenide nanomaterials (e.g. ZnSe, metal selenides)
Industrial Formulation	Component in controlled industrial and process formulations
Academic & Laboratory Research	General inorganic and materials chemistry teaching and research

Not intended for food, dietary supplement, therapeutic, diagnostic, or veterinary use. For laboratory and industrial research use only.

STORAGE & HANDLING

Storage Conditions	Store at approximately 20°C in a tightly closed container, protected from moisture and light.
Shelf Life	36 months from date of manufacture when stored as recommended (refer to batch Certificate of Analysis for specific expiry).
Handling	Handle under fume hood or with local exhaust ventilation. Avoid generating or inhaling dust. Wear appropriate PPE — see SDS Section 8.

PACK SIZES

Pack Size	Recommended For
25 g	Method development, small-scale reference use
100 g	Routine laboratory and analytical use
500 g	Ongoing research programmes
1 kg / Custom	Industrial formulation and bulk supply — contact us for a quote

LITERATURE REFERENCES

1. Ganther, H.E. (1968). Selenotrisulfides. Formation by the reaction of thiols with selenious acid. Biochemistry, 7(8), 2898–2905.

2. Agency for Toxic Substances and Disease Registry (ATSDR). Toxicological Profile for Selenium. U.S. Department of Health and Human Services, Public Health Service.

3. Levander, O.A., & Burk, R.F. Selenium. In Modern Nutrition in Health and Disease (Shils, M.E. et al., eds.), Lippincott Williams & Wilkins.

4. National Center for Biotechnology Information. PubChem Compound Summary for CID 24934, Sodium Selenite. PubChem, National Library of Medicine.

References are provided for general chemical and toxicological context. Verify current data against primary sources before use in regulatory or safety-critical documentation.