

Sodium Iodide

NaI

CAS#7681-82-5

EINECS # 231-679-3

Technical Data Sheet

GHS Product Identifier: 113.04, Sodium Iodide Tech; 113.05, Sodium Iodide 57% Soln.; 113.14, Sodium Iodide USP; 113.15, Sodium Iodide High Purity; 113.25, Sodium Iodide Pure; 113.34, Sodium Iodide ACS.

Formula Description: Technical: White to light yellow crystalline powder. **USP/High Purity/Pure:** Colorless, odorless crystals or white crystalline powder. Deliquescent in moist air and develops a brown tint upon decomposition. Very soluble in water, freely soluble in alcohol and acetone. **ACS:** White powder; odorless; slowly becomes brown in air; deliquescent; saline, somewhat bitter taste. Soluble in water alcohol and acetone. **57% Solution:** Clear, colorless to light brown liquid.

Recommended Use: Sodium Iodide is an inorganic halogenated salt that is highly soluble. It finds medical applications as a thyroid symporter ¹ in cancer treatment. Sodium Iodide is also used as a scintillation detector and high efficiency for detection gamma rays ². NaI is a common reagent for organic synthesis reactions ³ and in the weather modification industry ⁴.

General Properties: Technical/USP/ACS/High Purity/Pure

Molecular Weight	149.9	Melting Point	661°C
Solubility	178 g/100 ml H₂O (20°C)	Solubility	302 g/100 ml H₂O (100°C)

General Properties: 57% Solution

57% Solution	Density	14.2 lbs/gal
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Chemical Product Specifications

	Tech
Assay	98.0% min

	57% Solution
Assay	55.0% - 59.0%

Deepwater's **PurI₂ty** products offer you full traceability for all raw materials.

All products are manufactured under current Good Manufacturing Practices (cGMP)

in our US FDA registered plant. FEI #2013633.



	PurI₂ty USP	PurI₂ty ACS (as is)	PurI₂ty Pure	PurI₂ty High Purity
Assay	99.0 – 101.5% (Anhydrous)	99.5% min (as is)	99.0 – 101.5% (Anhydrous)	99.5 – 100.5% (Anhydrous)
Identification	Passes Test		Passes Test	Passes Test
Alkalinity	USP Standards		USP Standards	USP Standards
Water	2.0% max		2.0% max	1.0% max
pH (5% Solution)		6.0 – 9.0 (25°C)	Report Results	Report Results
Insoluble Matter		0.01% max	Report Results	Report Results
Chloride & Bromide (as Cl)		0.01% max	0.01% max	0.01% max
Iodate (IO₃)	4 ppm max	3 ppm max	4 ppm max	4 ppm max
Phosphate (PO₄)		0.001% max	0.001% max	0.001% max
Sulfate (SO₄)		0.005% max	0.005% max	0.005% max

Nitrate, Nitrite & Ammonia	USP Standards		USP Standards	USP Standards
Thiosulfate & Barium	USP Standards		USP Standards	USP Standards
Potassium (K)	USP Standards	0.01% max	USP Standards	15 ppm max
Barium (Ba)		0.002% max	0.002% max	0.002% max
Heavy Metals (as Pb)		5 ppm max	0.001% max	0.001% max
Iron (Fe)		5 ppm max	3 ppm max	
Calcium (Ca)		0.002% max		
Magnesium (Mg)		0.001% max		
Trace Metal Analysis				≤ 100.00 ppm
Elemental Impurities Class 1	Cd, Pb, AS, Hg			
Elemental Impurities Class 2A	Co, V, Ni			

*Compendial grades conform to current USP and ACS editions

	Purity 57% High Purity
Appearance, Clear Colorless	Passes Test
Identification	To Pass Test
Assay	56.5% – 57.5 %
pH	5.0% - 8.0%
Hydrazine	≤ 5 ppm
All impurity specs and results below are based on anhydrous NaI	
Iodate (IO₃)	≤ 4 ppm
Thiosulfate & Barium	USP Standards
Potassium (K)	≤ 15 ppm
Heavy Metals (as Pb)	≤ 0.001%
Nitrate, Nitrite, & Ammonia	USP Standards
Chloride and Bromide	≤ 0.01%
Insoluble Matter	Report Results
Phosphate (PO₄)	≤ 0.001%
Sulfate (SO₄)	≤ 0.005%
Barium (Ba)	≤ 0.002%
Trace Metal Analysis	≤ 100.00 ppm

Standard Packaging

Net Weight	Packaging	Product
25 lbs.	LDPE 2 gal Pail	Tech/USP/ACS/Pure/High Purity
400 lbs.	UN1H1 30 gal Polydrum	Sodium Iodide 57% Soln
750 lbs.	UN1H1 55 gal Polydrum	Sodium Iodide 57% Soln
Dry material packaged with polyethylene liner. All drums suitable for export.		

SDS with detailed information available upon request.

References:

1. Radioisotope Concentrator Gene Therapy Using the Sodium/Iodide Symporter Gene
Robert B. Mandell, Leisa Z. Mandell and Charles J. Link Jr. Cancer Res February 1 1999 (59) (3) 661-668
2. W. F. Miller, John Reynolds, and William J. Snow, "Efficiencies and Photochemicals for Gamma Radiation on Sodium Iodide (Thallium Activated) Crystals," Argonne Natl. Lab. Rept. ANL-5902 (1958)
3. Syntheses of organic iodides via reaction of organoboranes with sodium iodide
George W. Kabalka and E. Eugene Gooch, The Journal of Organic Chemistry 1981 46 (12), 2582-2584
4. Ice Nucleation Silver Iodide-Sodium Iodide: A Reevaluation, R. Blumenstein, W. Finnegan, L. Grant, the Journal of Weather Modification, Vol 15, No 1 (1983)

