

# 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 <sup>1</sup> in cancer treatment. Sodium Iodide is also used as a scintillation detector and high efficiency for detection gamma rays <sup>2</sup>. NaI is a common reagent for organic synthesis reactions <sup>3</sup> and in the weather modification industry <sup>4</sup>.

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

<b>Molecular Weight</b>	<b>149.9</b>	<b>Melting Point</b>	<b>661°C</b>
<b>Solubility</b>	<b>178 g/100 ml H<sub>2</sub>O (20°C)</b>	<b>Solubility</b>	<b>302 g/100 ml H<sub>2</sub>O (100°C)</b>

**General Properties: 57% Solution**

<b>57% Solution</b>	<b>Density</b>	<b>14.2 lbs/gal</b>
---------------------	----------------	---------------------

**Chemical Product Specifications**

	<b>Tech</b>
<b>Assay</b>	98.0% min

	<b>57% Solution</b>
<b>Assay</b>	55.0% - 59.0%

Deepwater's **PurI<sub>2</sub>ty** 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.



	<b>PurI<sub>2</sub>ty USP</b>	<b>PurI<sub>2</sub>ty ACS (as is)</b>	<b>PurI<sub>2</sub>ty Pure</b>	<b>PurI<sub>2</sub>ty High Purity</b>
<b>Assay</b>	99.0 – 101.5% (Anhydrous)	99.5% min (as is)	99.0 – 101.5% (Anhydrous)	99.5 – 100.5% (Anhydrous)
<b>Identification</b>	Passes Test		Passes Test	Passes Test
<b>Alkalinity</b>	USP Standards		USP Standards	USP Standards
<b>Water</b>	2.0% max		2.0% max	1.0% max
<b>pH (5% Solution)</b>		6.0 – 9.0 (25°C)	Report Results	Report Results
<b>Insoluble Matter</b>		0.01% max	Report Results	Report Results
<b>Chloride &amp; Bromide (as Cl)</b>		0.01% max	0.01% max	0.01% max
<b>Iodate (IO<sub>3</sub>)</b>	4 ppm max	3 ppm max	4 ppm max	4 ppm max
<b>Phosphate (PO<sub>4</sub>)</b>		0.001% max	0.001% max	0.001% max
<b>Sulfate (SO<sub>4</sub>)</b>		0.005% max	0.005% max	0.005% max

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

\*Compendial grades conform to current USP and ACS editions

	<b>PurIty 57% High Purity</b>
<b>Appearance, Clear Colorless</b>	Passes Test
<b>Identification</b>	To Pass Test
<b>Assay</b>	56.5% – 57.5 %
<b>pH</b>	5.0% - 8.0%
<b>Hydrazine</b>	≤ 5 ppm
<b>All impurity specs and results below are based on anhydrous NaI</b>	
<b>Iodate (IO<sub>3</sub>)</b>	≤ 4 ppm
<b>Thiosulfate &amp; Barium</b>	USP Standards
<b>Potassium (K)</b>	≤ 15 ppm
<b>Heavy Metals (as Pb)</b>	≤ 0.001%
<b>Nitrate, Nitrite, &amp; Ammonia</b>	USP Standards
<b>Chloride and Bromide</b>	≤ 0.01%
<b>Insoluble Matter</b>	Report Results
<b>Phosphate (PO<sub>4</sub>)</b>	≤ 0.001%
<b>Sulfate (SO<sub>4</sub>)</b>	≤ 0.005%
<b>Barium (Ba)</b>	≤ 0.002%
<b>Trace Metal Analysis</b>	≤ 100.00 ppm

### Standard Packaging

<b>Net Weight</b>	<b>Packaging</b>	<b>Product</b>
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)

