

Potassium Iodide

KI

CAS#7681-11-0

EINECS # 231-659-4

Technical Data Sheet

GHS Product Identifier: 101.07, Potassium Iodide Technical; 101.24, Potassium Iodide USP; 101.14, Potassium Iodide ACS; 101.08, Potassium Iodide 45% Soln.; 101.09, Potassium Iodide 50% Soln.; 101.84, Potassium Iodide Photo Grade.

Formula Description: Technical: Off white to light brown crystals or granular powder. **USP/ACS/Photo:** Colorless or white crystals or granular powder; slightly hygroscopic in moist air. Tends to cake during storage. On long exposure to air becomes yellow due to liberation of iodine. Light and moisture accelerates decomposition. **45% & 50% Solution:** Clear colorless to light yellow solution.

Recommended Use: Potassium Iodide is an inorganic halogenated salt that is used in polymer industry in improving structural properties¹⁻². It is a corrosion inhibitor/acid intensifier in oilfield gas production³⁻⁴, used in x-ray films owing to luminescence properties⁵, LCD manufacturing as a polarizer⁶, nylon stabilizer⁷, trace mineral in animal feeds and/or dietary supplement and food additive⁸.

General Properties: Technical/USP/ ACS

Molecular Weight	166.0	Density	3.12 (25°C)
Solubility	144 g/100 ml H₂O (20°C)	Solubility	208 g/100 ml H₂O (100°C)

General Properties: 45% & 50% Solution

45% Solution	Density	12.2 lbs/gal	1.46 g/ml
50% Solution	Density	12.77 lbs/gal	1.54 g/ml

General Properties: Photo Grade

Molecular Weight	166.0	Composition	Iodine 76.45%	Potassium 23.55%
Solubility	144 g/100 ml H₂O (20°C)	Solubility	208 g/100 ml H₂O (100°C)	

Chemical Product Specifications

	Tech
Assay	98.0% min

	45% Solution	50% Solution
Assay	44.5% - 45.5%	49.5% - 50.4%
pH (as is)	7.0 - 11.0	7.0 - 11.0

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

in our US FDA registered plant. FEI #2013633.



	PurIzty USP	PurIzty ACS	PurIzty Photo
Assay	99.0% – 101.5% (Anhydrous)	99.0% min (as is)	99.0% min (as is)
Identification	USP Standards A&B		
Alkalinity	USP Standards		
pH (5% Solution)		6.0 – 9.2	6.0 – 9.2
Insoluble Matter		0.005% max	0.005% max

Loss on Drying	1.0% max	0.2% max	0.2% max
	PurIzty USP	PurIzty ACS	PurIzty Photo
Chloride & Bromide (as Cl)		0.01% max	0.01% max
Iodate (IO₃)	4 ppm max	3 ppm max	3 ppm max
Nitrogen Compounds (as N)			0.001% max
Phosphate (PO₄)		0.001% max	0.001% max
Sulfate (SO₄)		0.005% max	0.005% max
Nitrate, Nitrite & Ammonia	USP Standards		
Thiosulfate & Barium	USP Standards		
Barium (Ba)		0.002% max	0.002% max
Heavy Metals (as Pb)		5 ppm max	5 ppm max
Iron (Fe)		3 ppm max	3 ppm max
Calcium (Ca)		0.002% max	0.002% max
Magnesium (Mg)		0.001% max	0.001% max
Sodium (Na)		0.005% max	0.005% max
Elemental Impurities Class 1	Cd, Pb, As, Hg		
Elemental Impurities Class 2A	Co, V, Ni		

*Compendial grades conform to current USP and ACS editions

Standard Packaging

Net Weight	Packaging	Product
50 lbs.	LDPE 3 gal Pail	Tech Only
25 lbs.	LDPE 2 gal Pail	USP/ACS
100 lbs.	UN1G 8 gal Fiberdrum	USP/ACS
65 lbs.	5 gal HDPE Drum	45% Soln
600 lbs.	55 gal HDPE Drum	45% Soln
650 lbs.	55 gal HDPE Drum	50% Soln
Material packaged with Saran inner liner and polyethylene out liner; suitable for export. Curtec drum does not include liner.		

SDS with detailed information available upon request.

References:

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2. Solid State Communications Volume 149, Issues 31–32, August 2009, Pages 1282-1287 Effect of nanofillers on thermal and transport properties of potassium iodide–polyethylene oxide solid polymer electrolyte
3. Journal of Applied Electrochemistry August 2004, Volume 34, Issue 8, pp 833–839 Synergistic Influence of Poly(4-Vinylpyridine) and Potassium Iodide on Inhibition of Corrosion of Mild Steel in 1M HCl L. Larabi Y. Harek M. Traisnel A. Mansri
4. Salah Merah, Lahcene Larabi, Omar Benali, Yahia Harek, (2008) "Synergistic effect of methyl red dye and potassium iodide on inhibition of corrosion of carbon steel in 0.5 M H₂SO₄", Pigment & Resin Technology, Vol. 37 Issue: 5, pp.291-298
5. An X-Ray Study of Formamide and Solutions of Potassium Iodide in Formamide R. DeSando, and G. Brown J. Phys. Chem., 1968, 72 (4), pp 1088–1091

6. A Study on the Heat Resistance and Polarization Characteristics of Poly(vinyl alcohol)-I₂ Complex Films Prepared with a Potassium iodide Applied Chemistry for Engineering
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7. Structure of iodide ions in iodinated nylon 6 and the evolution of hydrogen bonds between parallel chains in nylon 6N. S. Murthy, Macromolecules, 1987, 20 (2), pp 309–316
8. Waszkowiak, K. and Szymandera-Buszk, K. (2008), Effect of storage conditions on potassium iodide stability in iodised table salt and collagen preparations. International Journal of Food Science & Technology, 43: 895-899.

