

ISE Standards

Our wide selection of Hanna ISE Standards are made and bottled in our own state-of-the-art solutions facility. ISE Standards are required for direct and incremental measurement techniques and are available with certificate of analysis.

Code	Description	Size
HI4001-01	0.1 M ammonia standard	500 mL
HI4001-02	100 mg/L (ppm) ammonia standard (as NH_3N)	500 mL
HI4001-03	1000 mg/L (ppm) ammonia standard (as NH_3N)	500 mL
HI4002-01	0.1 M bromide standard	500 mL
HI4003-01	0.1 M cadmium standard	500 mL
HI4004-01	0.1 M calcium standard	500 mL
HI4005-01	0.1 M carbon dioxide standard	500 mL
HI4005-03	1000 mg/L (ppm) carbon dioxide standard (as CaCO_3)	500 mL
HI4007-01	0.1 M chloride standard	500 mL
HI4007-02	100 mg/L (ppm) chloride standard	500 mL
HI4007-03	1000 mg/L (ppm) chloride standard	500 mL
HI4008-01	0.1 M cupric standard	500 mL
HI4010-01	0.1 M fluoride standard	500 mL
HI4010-02	100 mg/L (ppm) fluoride standard	500 mL
HI4010-03	1000 mg/L (ppm) fluoride standard	500 mL
HI4010-10	10 mg/L (ppm) fluoride standard premixed with TISAB II	500 mL
HI4010-11	1 mg/L (ppm) fluoride standard premixed with TISAB II	500 mL
HI4010-12	2 mg/L (ppm) fluoride standard premixed with TISAB II	500 mL
HI4010-30	kit containing 4 bottles each of : HI4010-10, HI4010-11 and HI4010-00	500 mL (3 x 4)
HI4011-01	0.1 M iodide standard	500 mL
HI4012-01	0.1 M lead standard	500 mL
HI4012-21	0.1 M sulfate standard	500 mL
HI4013-01	0.1 M nitrate standard	500 mL
HI4013-02	100 mg/L (ppm) nitrate standard (as N)	500 mL
HI4013-03	1000 mg/L (ppm) nitrate standard (as N)	500 mL
HI4014-01	0.1 M potassium standard	500 mL
HI4015-01	0.1 M silver standard	500 mL
HI4016-01	0.1 M sodium standard	500 mL
HI4016-02	100 ppm sodium standard	500 mL
HI4016-03	1000 ppm sodium standard	500 mL
HI4016-10	10 ppm sodium standard	500 mL



Gas Sensor Fill Solutions

Code	Description	Size
HI4001-40	ammonia filling solution	30 mL bottles (4)
HI4005-40	carbon dioxide filling solution	30 mL bottles (4)

Specific Solutions for ISE Sensors

Code	Description	Size
HI4000-47	pH 4 and pH 7 buffers with chloride ions background, used to check internal glass electrode of gas sensors	10 packages each and 2 beakers
HI4001-45	conditioning and storage solution for HI4101 ammonia ISE	500 mL
HI4004-45	conditioning and storage solution for HI4004 and HI4104 calcium ISEs	500 mL
HI4005-45	conditioning and storage solution for HI4105 carbon dioxide ISE	500 mL
HI4016-45	storage solution for sodium ISE	500 mL
HI4016-46	conditioning solution for sodium ISE	500 mL

ติดต่อบริษัท นีโอนิคส์ จำกัด

Tel: 02-077-7602 หรือ 061-8268939

E-mail: sale@neonics.co.th หรือ sale@tools.in.th



Ionic Strength Adjusters (ISA)

Hanna Ionic Strength Adjusters (ISA) are formulated to provide a constant ionic strength in sample and standards alike, thus permitting concentration rather than activity measurements to be made. In some cases ISAs adjust pH and eliminate matrix effects.

Code	Description	Size
HI4000-00	ISA for halide ISEs	500 mL
HI4001-00	alkaline ISA for ammonia and cyanide ISEs	500 mL
HI4004-00	ISA for calcium ISEs	500 mL
HI4005-00	ISA for carbon dioxide ISEs	500 mL
HI4010-00	TISAB II for fluoride ISEs	500 mL
HI4010-05	TISAB II for fluoride ISEs	1 gallon
HI4010-06	TISAB III concentrate for fluoride ISEs	500 mL
HI4012-00	ISA for lead/sulfate ISEs	100 mL (5)
HI4013-00	ISA for nitrate ISEs	500 mL
HI4013-06	nitrate interferent suppressant ISA	500 mL
HI4014-00	ISA for potassium ISEs	500 mL
HI4015-00	SAOB (sulfide antioxidant buffer)	500 mL + 18 g (2 components)
HI4016-00	ISA for sodium ISEs	500 mL

Silver-free Reference Fill Solutions

Recommended for our combination ISE electrodes and the Hanna HI5315 reference electrode. Reference electrodes should be topped off daily with the correct filling solution for optimum measurement performance. These solutions are silver-free to eliminate silver precipitates found with standard electrolytes.

Code	Description	Size
HI7072	electrolyte solution, 1 M KNO ₃	30 mL bottles (4)
HI7075	electrolyte solution with KNO ₃ and KCl	30 mL bottles (4)
HI7076	electrolyte solution, 1 M NaCl	30 mL bottles (4)
HI7078	electrolyte solution, (NH ₄) ₂ SO ₄	30 mL bottles (4)
HI7082	electrolyte solution, 3.5 M KCl	30 mL bottles (4)

Reference Fill Solutions Containing Silver Chloride (AgCl)

Code	Description	Size
HI7079	2M NH ₄ Cl sat. with AgCl electrolyte for sodium ISE's (contains AgCl)	30 mL bottles (4)



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Solutions

Sodium (Na⁺) ISE Standard Solutions

Code	Description	Package
HI7080L	2.3 g/L sodium standard solution	500 mL bottle
HI7080M	2.3 g/L sodium standard solution	230 mL bottle
HI7086L	23 g/L sodium standard solution	500 mL bottle
HI7086M	23 g/L sodium standard solution	230 mL bottle
HI7087L	0.23 g/L sodium standard solution	500 mL bottle
HI7087M	0.23 g/L sodium standard solution	230 mL bottle
HI8080L	2.3 g/L sodium standard solution	500 mL FDA bottle
HI8086L	23 g/L sodium standard solution	500 mL FDA bottle
HI8087L	0.23 g/L sodium standard solution	500 mL FDA bottle

Sodium Chloride (NaCl) Standard Solutions

Code	Description	Package
HI7037L	calibration solution for % readings (100% NaCl)	500 mL bottle
HI7037M	calibration solution for % readings (100% NaCl)	230 mL bottle
HI7081L	standard solution at 30 g/L sodium chloride	500 mL bottle
HI7081M	standard solution at 30 g/L sodium chloride	230 mL bottle
HI7083L	standard solution at 3.0 g/L sodium chloride	500 mL bottle
HI7083M	standard solution at 3.0 g/L sodium chloride	230 mL bottle
HI7084L	standard solution at 58.4 g/L sodium chloride	500 mL bottle
HI7084M	standard solution at 58.4 g/L sodium chloride	230 mL bottle
HI7085L	standard solution at 0.3 g/L sodium chloride	500 mL bottle
HI7085M	standard solution at 0.3 g/L sodium chloride	230 mL bottle
HI7088L	standard solution at 5.84 g/L sodium chloride	500 mL bottle
HI7088M	standard solution at 5.84 g/L sodium chloride	230 mL bottle
HI7089L	standard solution at 125 g/L sodium chloride	500 mL bottle
HI7089M	standard solution at 125 g/L sodium chloride	230 mL bottle
HI7090L	ISA solution for sodium ISE	500 mL bottle
HI7090M	ISA solution for sodium ISE	230 mL bottle
HI8084L	standard solution at 58.4 g/L sodium chloride	500 mL FDA bottle
HI8088L	standard solution at 5.84 g/L sodium chloride	500 mL FDA bottle
HI8089L	standard solution at 125 g/L sodium chloride	500 mL FDA bottle
HI8095L	standard solution at 146 g/L sodium chloride	500 mL FDA bottle

The sodium and sodium chloride standard solutions are used for the calibration of pocket-sized, portable and bench salinity meters, as well as for the sodium ISE.

These solutions are available in 230 or 500 mL bottles, and also in opaque bottles that meet the FDA (Food & Drug Administration) specifications, in 230 or 500 mL volumes.

Fluoride standard solutions are used to calibrate all instruments that measure fluoride using a fluoride ISE. Additional fluoride standards are found on page 4.28

Both sodium/sodium chloride and fluoride solutions are available with a certificate of analysis on request.

Fluoride Standard Solutions

Code	Description	Bottle
HI7023/1L	TISAB Solution	1 L
HI7023L	TISAB Solution	500 mL
HI7023M	TISAB Solution	230 mL
HI70701/1L	standard solution at 1 g/L F ⁻	1 L
HI70701L	standard solution at 1 g/L F ⁻	500 mL
HI70701M	standard solution at 1 g/L F ⁻	230 mL
HI70702/1L	standard solution at 10 mg/L F ⁻	1 L
HI70702L	standard solution at 10 mg/L F ⁻	500 mL
HI70702M	standard solution at 10 mg/L F ⁻	230 mL
HI70703/1L	standard solution at 100 mg/L F ⁻	1 L
HI70703L	standard solution at 100 mg/L F ⁻	500 mL
HI70703M	standard solution at 100 mg/L F ⁻	230 mL

Accessories

HI4000-50	liquid membrane sensor handle
HI4000-51	gas sensor replacement pH for ammonia sensor
HI4000-52	gas sensor membrane cap for ammonia
HI4000-54	gas sensor replacement pH for carbon dioxide ISE
HI4000-70	halide polishing strips (24)
HI4001-51	ammonia membrane kit (20 loose)
HI4004-51	calcium module for HI 4004 half cell ISE
HI4104-51	calcium module for HI 4104 combination ISE
HI4005-53	carbon dioxide membrane kit (3 caps)
HI4110-51	fluoride module for HI 4110 combination ISE
HI4013-53	nitrate module for HI 4013 half cell ISE (3 pack)
HI4113-53	nitrate module for HI 4113 combination ISE (3 pack)
HI4014-51	potassium module for HI 4014 half cell ISE
HI4114-51	potassium module for combination ISE
HI740155P	capillary pipettes (20 pcs)
HI740159	plastic tweezers

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