



- Salad Dressings
- Cheeses
- Pickles
- Canned Foods
- Jarred Foods
- Condiments
- Energy Drinks
- Milk
- Juices
- Soups
- Brines
- Whey

ANALYZE

Sodium Chloride Refractometer

For the Food Industry



ISO 9001:2000 CERTIFIED



B.E.P.S. ±
Battery Error
Prevention System

2 YEAR
WARRANTY



www.hannainst.com

Easy Operation

IP 65 waterproof
ABS casing



Start-up Screens

When the HI 96821 is turned on, test screens followed by the percentage of battery life remaining is shown followed by the ready status.

Unit Selection

Just press the RANGE key to cycle through the HI 96821's units of measurement. g/100 g, g/100 mL, Specific Gravity and °Baumé.

Temperature selection can also be easily changed.

Calibration

Perform a quick and easy calibration after start-up:

1. Using a plastic pipette, completely cover the prism in the sample well with distilled or deionized water.
2. Press the ZERO key

Measurement

Achieve fast, professional results:

1. Using a plastic pipette, drip sample onto the prism surface until the well is full.
2. Press the READ key and the results are display in the selected units.

Refractometers for Accurate Sodium Chloride Analysis

Designed to Meet Your Requirements

HANNA offers the HI 96821 digital sodium chloride refractometer to meet the requirements of the food industry. This optical instrument that employs the measurement of the refractive index to determine sodium chloride concentration in aqueous solutions used in food preparation. It is not intended for sea water salinity measurements.

The measurement of refractive index is simple and quick and provides the user an accepted method for NaCl analysis. Samples are measured after a simple user calibration with deionized or distilled water. Within seconds the instrument measures the refractive index of the solution. The digital refractometer eliminates the uncertainty associated with mechanical refractometers and is easily portable for measurements where you need them.

The instrument utilizes internationally recognized references for unit conversion and temperature compensation. It can display the measurement of NaCl concentration 4 different ways: g/100 g, g/100 mL, Specific Gravity, and °Baumé.

Temperature (in °C or °F) is displayed simultaneously with the measurement (on 3 of the ranges) on the large dual level display along with icons for Low Power and other helpful message codes.



Principle of Operation

Aqueous NaCl determinations are made by measuring the refractive index of a solution. Refractive Index is an optical characteristic of a substance and the number of dissolved particles in it.

Refractive Index is defined as the ratio of the speed of light in empty space to the speed of light in the substance. A result of this property is that light will “bend”, or change direction, when it travels through a substance of different refractive index. This is called refraction.

When passing from a material with a higher to lower refractive index, there is a critical angle at which an incoming beam of light can no longer refract, but will instead be reflected off the interface.

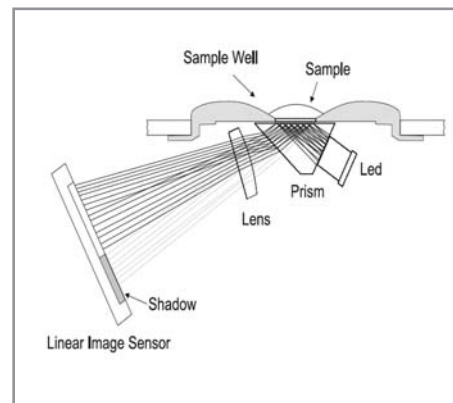
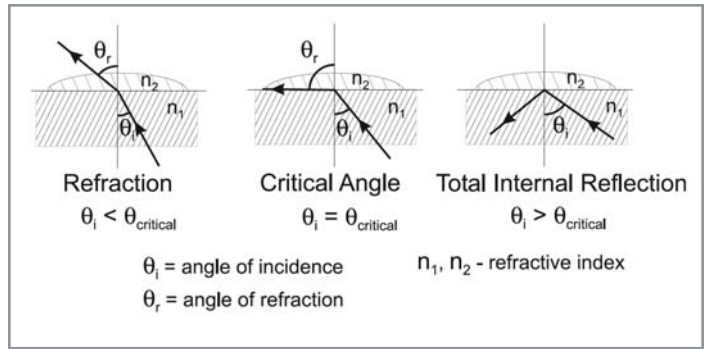
The critical angle can be used to easily calculate the refractive index according to the equation:

$$\sin(\theta_{\text{critical}}) = n_2 / n_1$$

Where n_2 is the refractive index of the lower-density medium; n_1 is the refractive index of the higher-density medium.

In the HI 96821 refractometer, light from an LED passes through a prism in contact with the sample. An image sensor determines the critical angle at which the light is no longer refracted through the sample.

Specialized algorithms then apply temperature compensation to the measurement and convert the refractive index to: g/100 g (% by mass), g/100 mL, Specific Gravity (S.G. 20/20), or °Baumé.



Professional Features

Dual Level LCD

The dual-level LCD displays the measurement as well as the temperature readings simultaneously.

Automatic Temperature Compensation

Easy Measurement

Place a few drops of the sample in the well and press the READ key.

B.E.P.S

B.E.P.S. (Battery Error Protection System) alerts the users in the event that low battery power could adversely affect readings.

IP 65 Waterproof Protection

Quick, Precise Results

Readings are displayed in approximately 1.5 seconds.

Single Point Calibration

With distilled or deionized water.

Small Sample Size

Sample size can be as small as 2 metric drops.

Automatic Shut-off

Stainless Steel Sample Well



Technical, Ordering and Accessory Information

SPECIFICATIONS

HI 96821

Range	g/100 g	0 to 28
	g/100 mL	0 to 34
	Specific Gravity	1.000 to 1.216
	°Baumé	0 to 26
	Temperature	0 to 80°C (32 to 176°F)
Resolution	g/100 g	0.1
	g/100 mL	0.1
	Specific Gravity	0.001
	°Baumé	0.1
	Temperature	±0.1°C (0.1°F)
Accuracy (@20°C)	g/100 g	±0.2
	g/100 mL	±0.2
	Specific Gravity	±0.002
	°Baumé	±0.2
	Temperature	±0.3°C (0.5°F)
Temperature Compensation		Automatic between 10 and 40°C (50 to 104°F)
Measurement Time		Approximately 1.5 seconds
Minimum Sample Volume		100 µL (to cover prism totally)
Light Source		Yellow LED
Sample Cell		Stainless steel ring and flint glass prism
Auto-off		After 3 minutes of non-use
Enclosure Rating		IP 65
Battery Type / Battery Life		9V / Approx 5000 readings
Dimensions / Weight		192 x 102 x 67 mm (7.6 x 4 x 2.6") / 420 g

ORDERING INFORMATION

HI 96821 is supplied with battery and instruction manual.



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Juices
Soups
Brines
Whey

ANALYZE



Jarred Foods
Condiments
Energy Drinks
Milk

