

Sodium Value Check for Canned Food

LAQUAtwin is a series of compact water quality testers. Using Ion Specific Electrode (ISE) technology, they are available for Conductivity, Calcium ion, Nitrate ion, Potassium ion, Sodium ion and pH measurement. Using just a single drop of sample, the LAQUAtwin proprietary flat sensors can quickly and accurately measure the values of the chemical parameters for quality check of food in production lines.



Introduction

Sodium is a mineral needed for normal body function, but an excessive intake of it can cause high blood pressure and hypertension. The 2010 Dietary Guidelines for Americans recommends that individuals consume less than 2300 mg of sodium per day.

A growing concern is the large sodium content especially in canned foods. Many foods are misleading in their sodium content and it is important that people know about the amounts of sodium they are ingesting.

To determine the sodium content of canned foods, the Horiba LAQUAtwin Na⁺ meter can be used. This is an easy and quick method used to consider the sodium content of canned products.

Method

1. The canned product must be liquefied (if solid) by blending.
2. 1 g of the sample can be taken and added to 4 g of water.
3. The mixture should be shaken for one minute. A pipette can be used to extract a small sample of the blended mixture.
4. This is placed on the sensor of the LAQUAtwin Na⁺ meter and the sodium content is measured after one minute.

5. To repeat sampling, wash the sensor with tap water and pat dry with a paper tissue.

Results and Benefits

The use of the Horiba LAQUAtwin Na⁺ meter to measure the sodium content of canned food products will improve consumers' knowledge of their sodium intake. This will thus help to combat the increasing issues of high blood pressure and hypertension.

The LAQUAtwin pH meter is small and compact; convenient to carry around the marketplace for easy on-site testing. Its easy-to-use interface is simple for anyone to use the LAQUAtwin hand held pH meter.

Sample	Sodium concentration on the Label	Sodium Concentration after 5 Times Dilution (A÷5) ¹	Measurement Result by LAQUAtwin	Error of Each Measurement Data to Label Value ²
Minestrone	5390 mg/kg	1078 mg/L	1000 mg/L	within ± 10 %
Clam Chowder	6530 mg/kg	1306 mg/L	1300 mg/L	within ± 10 %
Corn Soup	6330 mg/kg	1266 mg/L	1200 mg/L	within ± 10 %

¹ Sodium concentration was calculated on the assumption that the specific gravity of sample is 1.

² The error may become larger for extremely viscous or oily samples.

How to Measure Sodium Ion in Canned Soup with LAQUAtwin (5 times dilution measurement)



1. Scale 1g of sample



2. Add 4g of water, so that it weighs 5g in total



3. Shake the sample container for 1 min.



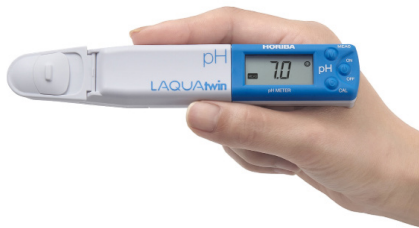
4. Drop the supernatant until it fully covers the electrode



5. Read the value after 1 min.

LAQUAtwin

Unique Features



LAQUAtwin: the only meters with flat sensor technology.

HORIBA's highly-sensitive, flat sensor technology opens up new possibilities for sampling and sample types. Only a small amount of sample is required, so you can easily sample in situ without the need for beakers or other labware. Sensors are easily replaced as required.

Calibrate and measure at the touch of a button—the smiley face will tell you when the result can be read.

Hassle-free automatic calibration with a few drops of standard solution reassures you of your measurement accuracy. Two-point calibration is also possible.*1

*1 Except for B-711



LAQUAtwin is fully waterproof and dustproof.

The meter and sensor are fully waterproof*3 and dustproof, so you can take it anywhere.

*3 IP67 rated. Will withstand immersion for 30 minutes at 1 m. Not suitable for underwater use.

Carry case comes as standard for handy portability.

The compact carry case contains everything you need for your measurements, including the standard solution and sampling sheets.



1 X 6

One meter, six methods.

Only LAQUAtwin allows you to be this flexible!

Choose the best method according to your sample, your situation, and your needs.



01 Immersion

When you're in the lab, you can test the sample in a beaker. Ensure the sensor guard sliding cap is open.



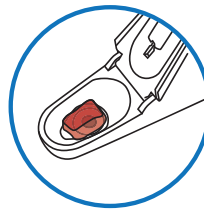
02 Scoop

Use as a scoop to test water eg from a river. A vertical scoop for an aquarium is also available with a unique sensor guard.



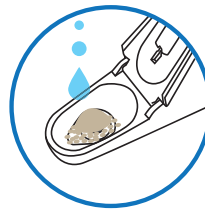
03 Drops

Place a drop of the sample onto the sensor with a pipette. LAQUAtwin meters can measure sample volume as low as 0.1mL



04 Solid Samples

Foods containing some moisture can be tested by placing a small piece directly onto the sensor.



05 Powders

LAQUAtwin meters can also test dry powders. Simply place the powder sample onto the sensor and drop on your defined volume of pure water.



06 Paper and textiles

To test sheets of paper and textiles, cut up the sample into small pieces and place directly onto the sensor. Drop on your defined volume of pure water.

pH



Accurate pH measurements in a few seconds, from a single drop.

Water pH varies in different environments, and a slight change can often have a major effect.

Whether you need to keep the pH of an aquarium within tight limits, are checking for the acidity of rain water or for the quality of meat and fish products, LAQUAtwin compact pH meters are ideal for you. No matter where and when you need to test.

COND



Determine water conductivity with as little as 0.12 mL of sample.

The conductivity of rain water is a trusted guide to determining atmospheric purity. In agriculture, measuring the conductivity of soil allows farmers and agronomists to determine optimum fertilizer usage and check the 'health' of soil after salt water damage. The LAQUAtwin meter makes conductivity testing simple, anywhere.

Na+



Only compact meter for a quick and reliable measurement of sodium ion at the scene using ion selective membrane.

K+



Only compact meter for a quick and reliable measurement of potassium ion at the scene using ion selective membrane.

NO3-



Only compact meter for a quick and reliable measurement of nitrate ion at the scene. Special application packages for crop (B-741) and soil (B-742) are also available.

Ca2+



Only compact meter for a quick and reliable measurement of ionized calcium at the scene using ion selective membrane.



<http://www.horiba.com/laquatwin>

IMS

HORIBA Group is operating Integrated Management System (IMS)
ISO9001 JOA-0298 / ISO14001 JOA-E-90039 / ISO13485
JOA-MD0010 / OHSAS18001 JOA-OH0068

