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DATA SHEET

WATER SAMPLING BOTTLES

Dedicated to optimise the sampling of water for microbiology analyses, LP bottles are designed and manufactured to assure functionality, safety and user-friendliness.

LP Water Sampling Bottles are available in: 125 ml, 250 ml, 500 ml 1000 ml

Key features, common to all models:

- Manufactured using virgin raw material (PETG, PP, HDPE)
- Strong and virtually unbreakable.
- Lightweight, well balanced and easy to handle. Their square shape and rounded edges assure the best transport and storage optimization, while minimizing their packaging volume. All bottle versions are also available single packed.
- Types of opening: narrow neck and wide neck
- Moulded graduation, for easy control of the the volume of the liquid content.
- Closure: all bottles are closed with a leakproof screw cap with a special inert inner gasket, and with a tamper evident seal.

- Caps: all made in HDPE
- All caps have vertical ribs for ease of use and opening, even when wearing gloves
- Traceability: The product label on each box includes the lot number and expiration date. Each bottle has a label for recording the main sample identification data. In addition on each label the following information is indicated:
  - Lot Number
  - Expiry Date
  - A unique number, in clear and in barcode form.

All of the above allow full traceability of each individual sample.

- Sterilization: with ionizing radiation, according to ISO 11137 – SAL 10^{-6}.
- Shelf life: see product tables.
- The manufacturing and packaging processes are checked in accordance with applicable norms and LP quality criteria
- Na Thiosulfate content (unless otherwise specified) : 20 mg / l

WIDE NECK BOTTLES in PETG – PP – amber PP

Models with 50 mm nominal opening, facilitate the filling, minimize the risk of contamination during sampling (in accordance with the recommendations of the ISO 19458:2006 - sampling techniques):

Nominal Capacity (ml)		**125**	**250**	**500**	**1000**
Brim Capacity (ml)		205	330	590	1150
Graduation (ml)		25 – 125 (150)	50 - 250	100 - 500	200 - 1000
Body Transversal section (mm)		55 x 55	60 x 60	70 x 70	90 x 90
Bottle Height w/o cap (mm)		88	110	143	170
Bottle Height with cap (mm)		93	115	145	175
Cap Diameter (mm)		50			
Shelf life (months) from	With Na Thiosulfate	24			
date of production	w/o Na Thiosulfate	60			
Case quantity		350 / 320*	216	120	72

**single wrapped version*

Square bottles in PETG

Glass-like clarity for complete sample inspection during filling and pouring.

Code	Capacity (ml)	Single pack	Thiosulfate
292158	250	no	yes
292258	250	no	no
292358	250	yes	yes
292458	250	yes	no
295158	500	no	yes
295258	500	no	no
295358	500	yes	yes
295458	500	yes	no
291158	1000	no	yes
291258	1000	no	no
291358	1000	yes	yes
291458	1000	yes	no

Transparency: glass like
Cap colour: natural white

Field of application:
- environmental sampling
- microbiology
- industry

Square bottles in PP

Code	Capacity (ml)	Single pack	Thiosulfate
299148	125	no	yes
299248	125	no	no
299348	125	yes	yes
299448	125	yes	no
292148	250	no	yes
292248	250	no	no
292348	250	yes	yes
292448	250	yes	no
295148	500	no	yes
295248	500	no	no
295348	500	yes	yes
295448	500	yes	no
291148	1000	no	yes
291248	1000	no	no
291348	1000	yes	yes
291448	1000	yes	no

Transparency: translucent
Cap colour: natural white

Field of application:
- environmental sampling
- microbiology
- industry

Square amber bottles in PP

To be used in those in cases, for example with drinking water, where it is appropriate to protect from light the potentially photosensitive elements eventually contained in the sample.

Code	Capacity (ml)	Single pack	Thiosulfate
292648	**250**	no	yes
292748	**250**	no	no
292848	**250**	yes	yes
292948	**250**	yes	no
295648	**500**	no	yes
295748	**500**	no	no
295848	**500**	yes	yes
295948	**500**	yes	no
291648	**1000**	no	yes
291748	**1000**	no	no
291848	**1000**	yes	yes
291948	**1000**	yes	no

Transparency: no

Cap colour: natural white

Field of application:

- environmental sampling
- microbiology
- industry

NARROW NECK BOTTLES in HDPE

The nominal diameter of the neck (31 mm), simplifies both pouring precision and opening.
Body colour: matt, semi-translucent.

Nominal Capacity (ml)		**125**	**250**	**500**	**1000**
Brim Capacity (ml)		214	290	550	1090
Graduation (ml)		25-125 (150)	50 - 250	100 - 500	100 - 1000
Body Transversal section (mm)		56 x 56	56 x 56	70 x 70	92 x 92
Bottle Height w/o cap (mm)		99	122	151	170
Bottle Height with cap (mm)		102	125	154	173
Cap Diameter (mm)		35			
Shelf life (months)	With Na Thiosulfate	24			
from date of production	w/o Na Thiosulfate	60			
Case quantity		350	280 / 270*	120	72

**single wrapped version*

Narrow neck bottles

Code	Capacity (ml)	Single pack	Thiosulfate	Cap color
299168	125	no	yes	red
299268	125	no	no	blue
299368	125	yes	yes	red
299468	125	yes	no	blue
292168	250	no	yes	red
292268	250	no	no	blue
292368	250	yes	yes	red
292468	250	yes	no	blue
295168	500	no	yes	red
295268	500	no	no	blue
295368	500	yes	yes	red
295468	500	yes	no	blue
291168	1000	no	yes	red
291268	1000	no	no	blue
291368	1000	yes	yes	red
291468	1000	yes	no	blue

Transparency: translucent

Field of application:
- environmental sampling
- microbiology
- industry

SODIUM THIOSULFATE BUFFERING

- Chlorides: with chlorinated water samples, buffering of free or residual chlorine is suggested, to inhibit its bactericide action during transportation and storing. All LP bottles are available pre-dosed with Sodium Thiosulfate (see “Suggestions”) in conformity with:

  - ISO 19458:2006 (same as French Standard NFT 90-40): 20 mg/l or
  - International Standard ISO 5667-3: 80 mg/l

  (Bottles filled to nominal capacity)
  In case of highly chlorinated water, by customer request, bottles with a higher quantity of Na Thiosulfate can be made available.
  Note: in these cases the standard buffer amount is 100 mg/l, which can be increased up to 120 mg/l (typically used for swimming pool water sampling) with no influence on sample’s quality (see “Suggestions”). Sodium Thiosulfate has no influence on the sample, that is why it is possible to use bottles containing Sodium Thiosulfate with non chlorinated samples.
- Sterility and individual wrapping: LP Water Sampling Bottles, with and without Na Thiosulfate, are all irradiated to a SAL (sterility assurance level) of 10^{-6}. The sterilization is guaranteed until the seal is broken and the cap is opened. For those applications where it is important to avoid any possible contamination induced by the bottle itself (i.e. sampling by immersion), sterility is necessary for the external surface of the bottle as well as the internal one. For this requirement, all LP Water Sampling Bottles can be supplied individually wrapped (flow pack).
- Guarantee: screw caps have a tamper evident safety seal. If the cap seal is unbroken closure and inner sterility are guaranteed.

SUGGESTIONS FOR THE BEST USE

1. Microbiological analysis of water samples must always be performed within the shortest possible time after sampling. If the sample has aged too long, many factors can influence its bacterial contents, all of them related to the quality of the water: presence of toxic or nutritive substances for bacterial flora, saltiness, pH and so on.
   As a general guideline, LP ITALIANA suggests to transport and store samples at a temperature of (+4 to +10°C) and to analyse them within 24 hours.
2. Buffering ratio
   As a bactericide, sporicide, fungicide and virocide, a sodium salt (hypochlorite NaClO and/or chlorite $NaClO_2$) is usually dissolved in water or, more frequently, one mixture of the two. It is not possible to know neither the composition of the mixture, nor the amount of each dissolved salt, therefore it is not possible to supply any indication of how much free chlorine is to be buffered by a predetermined amount of sodium thiosulfate (Na2S2O3).
   Furthermore, depending on inactivation dynamics, it is hard to predict which amount of Sodium Thiosulfate is required to inactivate even a known amount of free residual chlorine.
   We suggest to consider the following indications:

   Buffering ratio between thiosulfate and hypoclorite → 1 Mole: 1 Mole
   Buffering ratio between thiosulfate and Chlorite → 4 Moles: 1 Mole

In order to know the actual ratio in weight, such relationships must be related to the respective molecular weights, but quantitative indications are not set here because they could be not pertinent or misleading to each single case. We limit ourselves only to give evidence that in one limit case (all chlorite) the amount of Thiosulfate required is approximately quadruple than the one required for the opposite case ("all hypochlorite"). We suggest considering that 18 mg Sodium Thiosulfate will inactivate at least 2 mg/l and up to 5 mg/l of free chlorine residual, which is sufficient for the majority of samples.

ENVIRONMENTAL INFORMATION:

LP Water Sampling Bottles are manufactured using only materials respecting the environment and are fully recyclable.

These materials can also be delivered to a controlled landfill, in accordance applicable national standards and local waste disposal laws.

All dimensions and volumes indicated are nominal. Technical specifications are subject to change without prior notice.