

Discrete Interval Sampler

Model 425

The Solinst Model 425 Discrete Interval Sampler (DIS) is a stainless steel sampler, with LDPE tubing mounted on the convenient Solinst reel. The reel has a pressure attachment for a high pressure hand pump, and a pressure/vent switch which is used to apply and release the pressure on the sampler. A sample release device is included with each Discrete Interval Sampler.

Operation

The sampler is pressurized before being lowered into the well to prevent water flowing into the sampler. Once the desired depth is reached, the pressure is released and hydrostatic pressure fills the sampler with water directly from the sampling zone. A floating checkball inside the 1.66"ø (42 mm) and 1"ø (25 mm) samplers prevents water from entering the tubing, thus avoiding the need to decontaminate the tubing.

When the sampler is filled, it can be repressurized and raised to the surface. The sample is decanted using the sample release device, which regulates flow and minimizes degassing of the sample. The sampler is easily disassembled for decontamination.

Biodegradable disposable PVC bailers and stainless steel Point Source Bailers are also available from Solinst (see Model 428 BioBailer & 429 Point Source Bailer Data Sheets).

Discrete Interval No-Purge Sampling

Discrete interval sampling is ideal for obtaining truly representative water samples and for obtaining samples of product (LNAPL and DNAPL). The DIS is ideal for groundwater sampling from below an oil/product layer on the surface of the water, as it allows a sample to be obtained which is untouched by the oil.

Discrete Interval Sampling is also used to profile open bodies of water, open boreholes and screened wells, and to collect samples from distinct levels or points of inflow. Mixing of water from different levels in the well is minimized.

The Model 425 Discrete Interval sampler is also recognized as a no-purge sampler. No-purge, also known as zero-purge or passive sampling methods, have gained acceptance by many regulatory agencies worldwide for obtaining high quality groundwater samples.

These sampling methods are based on the principle that groundwater which flows into a well, maintains equilibrium with the adjacent water bearing unit. Sampling at the discrete interval should result in representative samples, without the need for purging.



1.66"ø Discrete Interval Sampler with High Pressure Hand Pump



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Applications

- Obtaining a representative groundwater sample from below oil/product layers
- Discrete interval sampling in lakes, rivers and wells
- Chemical profiling of wells
- Sampling at points of inflow to well
- LNAPL and DNAPL sampling

Advantages

- High quality samples
- Sample has not been pumped through tubing
- No mixing of water from different levels
- Minimal disturbance of the water
- Easy disassembly for decontamination
- Avoids purging and disposal of purge water
- Less cost and time to retrieve samples
- Easy operation and transportation



Oil/Water Interface Meter



Tag Line / Suspension Cable

LNAPL and DNAPL Sampling

The Solinst Model 122 Interface Meter quickly and easily detects water as well as floating or sinking product layers (LNAPL or DNAPL).

Infra-red refraction is used to detect liquids and conductivity to distinguish water. A steady light and tone indicates product. Water is indicated by intermittent signals.

Once an LNAPL or DNAPL layer is detected, a sample can be taken using the Model 425 Discrete Interval Sampler at the depth indicated on the Interface Meter flat tape (marked every 1/100 ft. or mm).

VOC Sampling

Discrete interval samplers are excellent for VOC sampling since there is no mixing with water from different levels in the well. The sample has minimal contact with air, and does not travel through a long length of tubing, risking loss of volatile organics.

Suspension Cable

A cable connector is included at the top of the sampler for easy connection to a suspension cable. The Solinst Model 103 Tag Line is ideal. It uses polyethylene coated, permanently laser marked stainless steel, mounted on a reel. It comes with a clip for easy attachment/disattachment.

Materials

Samplers are constructed of stainless steel with Viton® o-rings, Teflon® and polypropylene check balls.

Tubing most commonly used is low density polyethylene (LDPE), however, Teflon or Teflon-lined polyethylene tubing is also available.

Depth Capability

The Solinst Discrete Interval Sampler can sample to depths of 500 ft. (150 m) below water level, regardless of total depth from surface.

| Recommended Operating Pressure | | | |
|--------------------------------|----------------|--------------------------|----------------|
| Submerged Depth (feet) | Pressure (psi) | Submerged Depth (meters) | Pressure (kPa) |
| 25 | 20 | 8 | 148 |
| 50 | 30 | 15 | 217 |
| 100 | 50 | 30 | 364 |
| 200 | 95 | 60 | 660 |
| 300 | 140 | 90 | 952 |
| 500 | 225 | 150 | 1540 |

Operating Pressure = (Submerged Depth in feet x 0.43) + 10 psi
(Submerged Depth in meters x 9.8) + 70 psi

| Discrete Interval Sampler Capacity | | | |
|------------------------------------|----------|-------------------|----------|
| English Units | | Metric Units | |
| Size | Capacity | Size | Capacity |
| 1" x 2' | 6 oz | 25.4 mm x 610 mm | 190 ml |
| 1.66" x 2' | 18 oz | 42 mm x 610 mm | 475 ml |
| 2" x 2' | 27 oz | 50.8 mm x 610 mm | 800 ml |
| 1" x 4' | 12 oz | 25.4 mm x 1220 mm | 365 ml |
| 1.66" x 4' | 32 oz | 42 mm x 1220 mm | 1000 ml |
| 2" x 4' | 61 oz | 50.8 mm x 1220 mm | 1800 ml |

Other diameters and lengths available, on request.

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