



## Non-corrosive pressure compensated sampler (PCS) - 20K BHS for under saturated gas/volatile oil reservoirs

Expro's Petrotech PCS is a single-phase bottomhole sampling tool with a pressure compensation system to keep the sample in monophasic condition from the reservoir to the surface. The tool can be run on slick-line, electric-line or coiled tubing. Individual clocks of 10, 24, 54 and 90 hours duration enable each sample to be taken after a suitable delay interval.

### Technical Specification:

|                             |              |
|-----------------------------|--------------|
| Length                      | 13'8"/4.16 m |
| Weight                      | 84 lbs/38 kg |
| Working Pressure Sampler    | 20,000 psi   |
| Working Pressure N2 chamber | 25,000 psi   |
| Working Temperature         | 200°C        |
| Sample Capacity             | 560 cc       |
| Maximum OD                  | 1.75"/44 mm  |
| Material                    | Inconel      |
| Test pressure               | 37,500 psi   |
| Design code                 | ASME VIII    |
| Max Time Delay              | 90 hours     |
| Certified by                | DNV          |

### Applications:

Single-phase reservoir sampling has widely been accepted as the industry standard for reservoir PVT sampling. By keeping the sample in single-phase errors during reconditioning of the sample are avoided. For Gas-condensates it is particularly important to maintain the sample above the dew point pressure as asphaltene precipitation may be irreversible. The PCS tool is also ideal for sampling of formation water since the pH will remain constant as long as the dissolved gases are kept in solution.

High pressures of the N2 charge are essential in order to secure single phase at surface. The high pressure rating of the PCS tool is sufficient to achieve this for all reservoir conditions and reservoir fluids.

### Features:

#### Non-corrosive

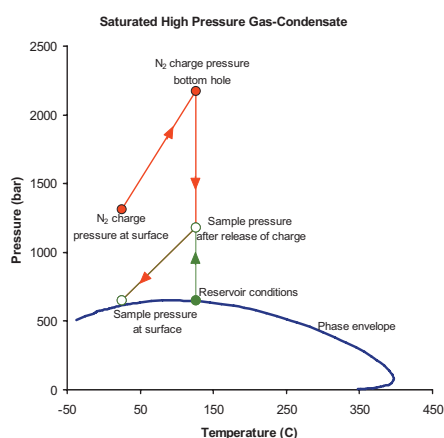
The PCS provides service in the most hostile well environments with extreme H2S levels.

#### Positive displacement operation

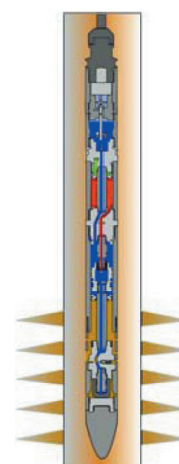
A slow positive displacement of the floating piston ensures no pressure differential across the sample entry ports.

#### Single-phase

The PCS tool will allow use of high N2 charge pressures and guarantee single-phase even for high shrinkage reservoir fluids.



Pressures in N2 charge and sample during PCS operation



- Nitrogen cushion
- Power fluid
- Back-up fluid
- Reservoir fluid

### Benefits:

#### Inert material

The non-reactive material makes the tool excellent for trace element sampling and sampling in highly corrosive hydrocarbon fluids containing CO2, H2S and brines. The material of the tool provides insignificant loss of H2S from the sample.

#### No phase change during retrieval

Unlike conventional bottom hole samplers the PCS will maintain the sample in single-phase from bottom hole to surface.

#### Fast sample transfer

With no requirement for re-establishing single-phase at surface sample transfer is performed rapidly and without jeopardising the integrity of the sample.