The Established Market Leader

Portex® Arterial Blood Sampling Kits

Smiths Medical has long been the market leader in arterial blood sampling with Portex® Arterial Blood Sampling Kits including: Pro-Vent® Plus Syringes, Pulsator® Plus Syringes and Line Draw Syringes. Our market leadership dates back to the 1970’s when, as Concord Laboratories, we introduced the first sterile, pre-packaged blood gas kit.

Over the last 30 years, Portex® Arterial Blood Sampling Kits have remained the first choice of clinicians for their innovation, quality, chemistry, reliability, accurate clinical results, configuration flexibility and attention to healthcare worker safety. The development of quality products such as Filter-Pro® devices in 1992 and Pro-Vent® Plus kits in 1995; and the introduction of electrolyte-balanced dry lithium heparin in 1995 to the development of a new low potency heparin formulation in 2003, Smiths Medical has consistently proven why it is the right choice.

History of Portex® Arterial Blood Sampling — The Leader in Syringe, Heparin and Safety Development

- **1979** Concord Labs introduces the first plastic pulsating syringe
- **1984** Concord Labs introduces the Anaerobic Pulsator® syringe with electrolyte-balanced liquid heparin
- **1986** Concord Labs introduces the Pulsator® syringe with dry lithium heparin
- **1989** Concord Portex® introduces vented syringes with dry lithium heparin
- **1990** Introduction of the first Portex® Arterial Blood Sampling Kit with a Needle-Pro® needle protection device

The hinged design allows the needle to be safely locked into place by pressing the needle into the Needle-Pro® sheath.

All Portex® arterial blood sampling syringes feature advanced formula heparin for higher performance, and are available with the Filter-Pro® device and/or Needle-Pro® needle protection devices to safeguard clinicians from bloodborne pathogens.
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The Portex® Heparin Story

Superior Heparin Formulas—Catalysts for the Highest Level of Performance

Our Exclusive Heparin Chemistry

Heparin is an important and key element of any arterial blood sampling syringe. We have dedicated many years of research to developing a heparin chemistry that makes multiple testing with smaller samples not only feasible, but also more accurate.

Our formulas combine the necessary anticoagulant effect with heparin (provides minimal interference) for more accurate, more extensive testing from a single sample. Portex® heparin formulas are also electrode-friendly so you get higher performance reducing negative impact on analyzers.

Portex® Arterial Blood Sampling syringes are compatible with all commercial blood gas analyzers on the market. From the smallest hand-held point-of-care analyzer to the largest whole blood analyzer in the lab, Smiths Medical has you covered.

We are proud to offer three different types of heparin with our arterial blood sampling kits, providing you with options in selecting a kit that meets your specific clinical needs:

- Electrolyte-balanced dry lithium heparin
- Electrolyte-balanced liquid sodium heparin
- Low potency dry lithium heparin

More Tests, More Indications, Precise Measurements—All From a Single Sample

In addition to blood gases, our chemistry also allows for as many as eleven (11) distinct parameters that can be routinely tested with a single and much smaller arterial whole blood or serum sample:

- Blood gases: pH, pCO₂, pO₂
- CO-Oximetry: tHb, O₂Sat, COHb, MetHb
- Electrolytes: ionized calcium, ionized and total magnesium, sodium, potassium, chloride
- Metabolites: glucose, lactate

The chart above illustrates the accuracy of the Portex® arterial blood sampling heparin for determination of ionized calcium using balanced lithium or non-balanced low unit (lithium) heparin as compared to a non-heparinized control syringe.

Our advanced formula dry lithium heparin provides the necessary anticoagulant effect (approximately 23.5 I.U. per ml) for more accurate measurements of vital respiratory, electrolytic and metabolic parameters. By prebinding the active sites of the heparin molecule, we ensure that more blood parameters are accessible for measurement.

Portex® advanced formula dry lithium heparin reduces clotting and dilution problems for blood samples as small as 0.80 ml for a 3 ml syringe and 0.25 ml for a 1ml syringe. Our specially formulated electrolyte-balanced liquid sodium heparin offsets both binding and dilution factors by chemically pre-adjusting key electrolytes to normal blood levels, providing consistent and accurate results.
Portex® Low Heparin Formula

Our new Portex® low potency dry lithium heparin complements our advanced formula dry lithium heparin. This heparin formula is available in selected Pro-Vent® Plus, Pulsator® Plus and Line Draw kits. The low heparin concentration (approximately 7 I.U. per ml) allows the clinician to obtain very small blood samples and still maintain the full range of blood gas, electrolyte, and metabolite test results with reduced heparin interference. All eleven (11) indications remain accurate even with very small blood samples. This is most important in patients with low blood volumes such as critically ill neonates.
Our formulas combine the necessary anticoagulant effect with heparin (provides minimal interference) for more accurate analyzer readings.
Pro-Vent® Plus Arterial Blood Sampling Kits

Safe and Efficient with Advanced Formula Heparin

Pro-Vent® Plus Arterial Blood Sampling Kits are available with either 1 ml or 3 ml syringes and with either advanced formula dry lithium heparin or low heparin formula. Each specially formulated heparin allows for, consistent and accurate analyzer readings, while reducing the potential for clots.

The Pro-Vent® Plus Advantages

Pro-Vent® Plus Arterial Blood Sampling syringes are top performers in their class because they offer a myriad of benefits for clinicians, patients, and hospitals:

- Large venting filter media allows for quick filling
- Rapid filling of syringe minimizes patient discomfort
- Fully depressed syringe plunger position provides ease of aspiration in code situations
- Positive stop on 3 ml syringe eliminates plunger disengagement
- Filter-Pro® and Needle-Pro® safety devices reduce health care worker exposure to bloodborne pathogens
- All Pro-Vent® Plus kits with pre-attached needles are packaged in sterile pouches for use in a sterile field
- A broad choice of configurations
Our specially designed non-vented syringes respond only to arterial pressure.
Pulsator® Plus Dry Heparin Arterial Blood Sampling Kits

Pulsator® Plus Syringes with Dry Lithium Advanced Formula Heparin

Pulsator® Plus syringes fill quickly and respond to arterial pressure, reducing the chance of a venous fill and provide ease of aspiration.

The Pulsator® Plus with Dry Lithium Heparin Advantages

- Advanced formula dry lithium heparin provides consistent and accurate readings
- Syringe design reduces the incidence of a venous fill; excellent choice for student training
- Pulsating effect allows for precise positioning in arterial lumen
- Syringe can be easily aspirated during a low blood pressure or code situation
- Packaged in sterile pouches
- All configurations include Filter-Pro® air bubble removal device
- Available with 3 ml syringes with preattached needle, and Needle-Pro® device

Pulsator® Plus NeedlePro® needle protection and FilterPro® device
Portex® Line Draw Plus aspirating syringes allow for blood sampling directly from an arterial line.
Portex® Line Draw Plus

A Complete Range of Line Draw Syringes

Portex® Line Draw Plus aspirating syringes allow for blood sampling directly from an arterial line. Syringes are available with advanced formula dry lithium heparin, low heparin, or electrolyte-balanced liquid sodium heparin. All Portex® Line Draw kits include the Filter-Pro® air bubble removal device.

**Portex® Line Draw Plus Aspirating Syringes in Dry Heparin Formulation**

- Advanced formula dry lithium heparin allows for consistent and accurate readings
- Available with either 1 ml Luer slip, 3 ml Luer lock, or 3 ml Luer slip syringes

**Portex® Line Draw Plus Aspirating Syringes with Low Heparin Formulation**

- Allows the full range of blood gas, electrolyte, and metabolite test results from very small blood samples without heparin interference
- Available with either 1 ml Luer slip, 3 ml Luer lock, or 3 ml Luer slip syringes

Portex® Line Draw kits are available with the Filter-Pro® air bubble removal device to allow ease of expelling air bubbles without aerosolizing the sample.

Portex® Line Draw Plus syringes are available in Luer slip or Luer lock configurations for easy connection to the stopcock.
The Smiths Medical Safety Story

Smiths Medical Commitment to Safety

Smiths Medical is committed to providing healthcare workers with a full line of advanced safety products which can be used in a variety of clinical applications where needlestick injuries are a potential risk for healthcare workers.

Portex® Arterial Blood Sampling Kits — Your Safe Choice for Patients and Healthcare Workers

More than 1,000 infections caused by 20 different pathogens are estimated to be transmitted through sharps or needlestick injuries annually. The greatest threats to clinicians are Hepatitis B (HBV), Hepatitis C (HCV), and HIV. Portex® Arterial Blood Sampling Kits were the first to include safety devices, recognizing the major threat of bloodborne pathogens exposure to clinicians in the workplace.

References

Filter-Pro® Air Bubble Removal Device

- The Filter-Pro® air bubble removal device allows the clinician to expel air bubbles from a blood sample safely, without exposure to blood or bloodborne pathogens
- Eliminates the potentially hazardous practice of aerosolizing air bubbles into gauze pads
- Included in all Portex® Arterial Blood Sampling Kits
- Doubles as a tip cap for safe transport to the lab

Needle-Pro® Needle Protection Device

- The safety feature is an integral part of the device
- Needle-Pro® devices engage the needle with a simple one-handed technique, freeing your other hand to attend to the site and patient
- Needlestick exposure time is reduced to seconds
## ORDERING INFORMATION

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<th>Product Code</th>
<th>Description</th>
<th>Needle</th>
<th>Safety Device</th>
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<th>Heparin</th>
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*Polybag Sterility

Only syringe fluid path and needle (if provided), are sterile and therefore are not suitable for use in sterile field.
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