

INSULON® SHEATHS FOR HYPODERMIC NEEDLES

INSULON®
TECHNOLOGY



Figure 1: Liquid nitrogen (-196°C) flows through an 18 gauge Insulon® sheath. Frost collects on the nitrogen supply line while the Insulon® sheath maintains a dry, touchable surface at 12°C.

Insulon® is a high-performance thermal barrier that effectively eliminates convective heat transfer in a wide range of thermal environments. Offering maximum insulation while consuming minimum design space, Insulon® provides optimal insulation for hypodermic needles used in cryo and steam ablation. The external surface of a 6 inch long, 18 gauge Insulon® Sheath carrying liquid nitrogen (-196°C) reaches steady state at 12°C (Fig. 1); a 14 gauge reaches steady state at 15°C (Fig. 3).

Cryo and steam ablation procedures can benefit from Insulon® in multiple ways. Insulon® can

help prevent condensation from collecting on the outer surface and can help minimize collateral tissue damage, including frostbite and burns.

Typically manufactured with 316 stainless steel, Inconel, and other alloys, Insulon® Sheaths can fit hypodermic needles as small as 22 gauge. Overall wall thickness can be as low as 0.30 mm. Both standard and custom sizes are available.

For more information, please call (516) 320-9995 or email us at inquiries@conceptgroupllc.com.



Figure 2: Comparing the size of an 18 gauge Insulon® Sheath to a U.S. dime.

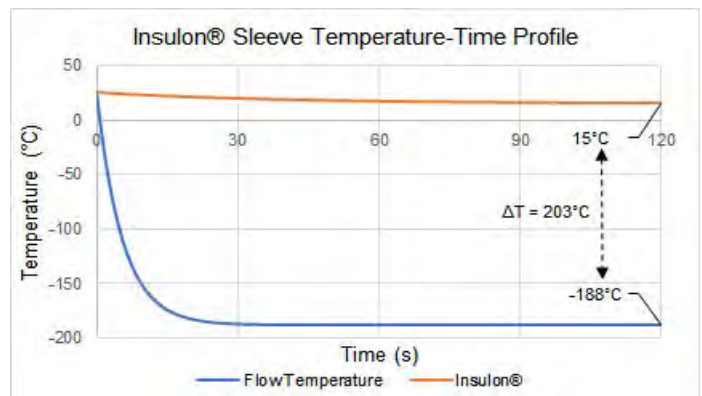


Figure 3: Temperature-time profile of a 6 inch long, 14 gauge Insulon® Sheath carrying liquid nitrogen. Skin temperature reaches steady state at 15°C.