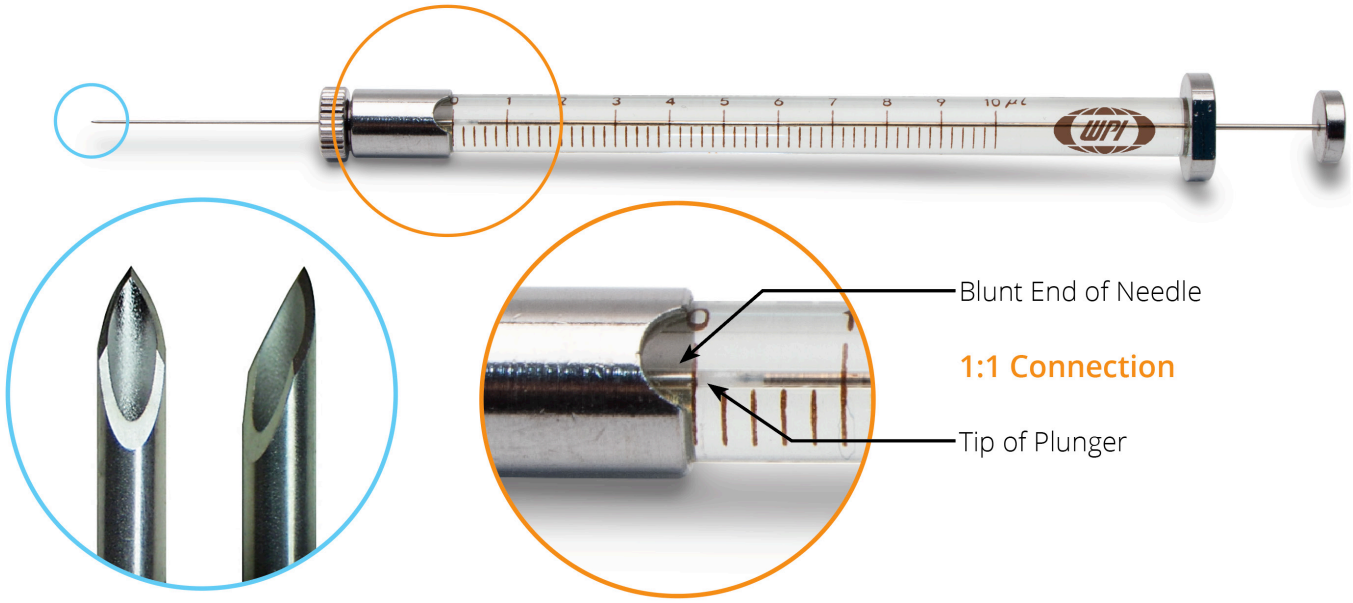
Gas-Tight Injection System

Developed For Ultra-Precise, Low Volume Fluid Transfer

www.wpi-europe.com

GAS TIGHT INJECTIONS

WPI's NanoFil™ is a specially designed, gas-tight microliter syringe developed specifically for ultra-precise, low-volume fluid transfer that boasts consistency in its performance, with zero dead volume. Microliter-level injections with NanoFil™ provide incredible accuracy with results you can trust.



APPLICATIONS

- Biologically compatible injection syringe
- Animal research, viral targeting like Retinal
- Pigment Epithelial (RPE)/Intra Ocular (IO), Brain, Muscle, or Spine
- Capillary electrophoresis

WHY CHOOSE NANOFIL?

Benefits

- Zero dead volume microinjection syringe
- Strong gas-tight seal providing both repeatability and superior application outcomes
- NanoFil™ needle sizes offered from 26G, down to 36G
- Two needle types available–blunt and beveled
- Versatile for life science research applications requiring precise *in vivo* targeting, low-volume fluid transfer
- Compatible with WPI's UMP3 microinjection system

Gas-Tight Control & Zero Dead Volume

Gas-tight control is particularly critical for applications requiring utmost accuracy and precision during low-volume fluid handling. Having a quality gas-tight design ensures a vacuum-like seal between the syringe and needle, supplying the necessary force to advance small samples forward during delivery, and upwards during withdraw. NanoFil's virtual zero dead-volume comes from its thoughtfully designed coupling mechanism, where all WPI NanoFil™ needles insert directly into the syringe barrel, creating a 1:1 connection with the syringe's plunger. Priming your syringe is made effortless with unparalleled control, supported by a sure-seal, gas-tight system.

Now available in 5, 10, 25, 50 & 100 µL volumes!

Functionality, Versatility with Interchangeable Needle Design

WPI's NanoFil™ promotes a range of applications, supported by our universal NanoFil™ needles, where all gauges are fully interchangeable and compatible with all NanoFil™ syringes. **Every** needle includes a two-part design, where each base is 26G, fitted with its smaller counterpart ranging from 33-36G, and every NanoFil™ needle fits every NanoFil™ syringe. No more fitted hub, Luer-lock, or cemented needles are needed with NanoFil™ syringes.

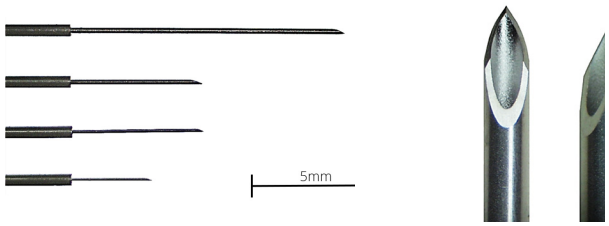
NanoFil™ Intraocular (IO) and Retinal Pigment Epithelium (RPE) kits diversify the integration for fine-tuned fluid transfer into sensitive tissue, mitigating user error. NanoFil™ syringes easily attach to WPI's UMP3 syringe pump paired to a stereotaxic or manipulator-fixed setups for enhanced control..

Smallest Available Needle Sizes for Sensitive Applications (26-36G)

WPI's interchangeable NanoFil™ needles are available with either blunt or beveled tip designs. The blunt tip is used for injection into soft tissue, when a uniform solution distribution is needed, and when front-filling requires complete uptake of the aliquoted sample at an even plane. The beveled style NanoFil™ needles are recommended for use in applications involving penetration through tougher tissue, or when the risk of mechanical damage to tissue is high. The tri-bevel tip design permits seamless, smooth insertion into an area without 'grabbing' the surrounding media. WPI's NanoFil™ needles are offered in sizes ranging from 26G to 36G (OD: 460 µm - 120 µm). Currently, WPI is the only available carrier offering needle sizing up to 36G.

Unique Tri-Beveled Needle Designed for Minimal Trauma

WPI's beveled NanoFil™ needles boast a unique 25° tri-surface bevel design, as oppose to a standard 10° single-surface bevel design offered by competitors. WPI's tri-tip bevel offers an ultra sharp, less invasive penetration versus the standard 10°. The standard 10° bevel design comes to a blade-like tip. When every edge is uniform in this design, there is much more resistance encountered as the needle is introduced to media and advanced. As WPI's design features two extra beveled surfaces, you can expect more from your targeting results and any confounds a standard needle may introduce.



NANOFIL FAMILY OF PRODUCTS

100 µL NanoFil™ Syringe

The 100 µL NanoFil™ syringe offers the highest volume capacity in the NanoFil™ family, making it ideal for larger-volume injections or multi-site dosing protocols. It delivers the same gas-tight, zero-dead-volume performance as smaller formats, ensuring reliable, repeatable delivery for both research injections and analytical workflows.

10 µL NanoFil™ Syringe

The 10 µL NanoFil™ syringe is a proven standard for precision microinjection, offering an ideal balance between fine control and practical working volume. Its gas-tight, zero-dead-volume design ensures reproducible delivery of valuable samples, making it well suited for brain, spinal, retinal, and viral injections where accuracy and consistency are essential.

50 µL NanoFil™ Syringe

The 50 µL NanoFil™ syringe bridges ultra-low-volume microinjection and higher-volume delivery needs. With smooth plunger response and consistent gas-tight performance, it supports applications that require increased fill volume, such as tissue injections, microfluidic loading, or repeated dosing, while preserving precise control.

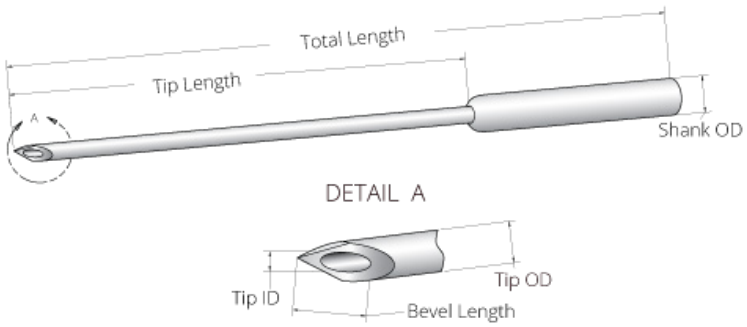
5 µL NanoFil™ Syringe

The 5 µL NanoFil™ syringe is optimized for ultra-low-volume injections where maximum precision and control are required. Its shortened barrel, approximately half the length of the 10 µL syringe, improves stability and handling during delicate procedures in confined spaces or for handheld injections. This format is ideal for highly localized delivery, minimizing dead volume and sample loss in the most demanding microinjection applications.

25 µL NanoFil™ Syringe

The 25 µL NanoFil™ syringe extends NanoFil™ precision into moderate-volume applications, providing additional capacity without compromising control. It is well suited for repeated low-volume injections, pharmacological delivery, or workflows that require multiple injections from a single fill while maintaining accurate dosing.

NANOFIL™ NEEDLE COMPARISON TABLE



Tip Order Number	Tip O.D. (µm)	Tip I.D. (µm)	Tip Length (mm)	Total Length (mm)	Shank O.D. (µm)	Bevel Length (µm)	Tip Material
NF33BV	210	115	10	40	460	≈348	Stainless Steel
NF34BV	185	85	5	35	460	≈290	Stainless Steel
NF35BV	135	55	5	35	460	≈204	Stainless Steel
NF36BV	120	35	3	33	460	≈156	Stainless Steel
NFQ34-5	160	100	55	75	460		Quartz
NF33BL	210	115	10	40	460	≈0	Stainless Steel
NF34BL	185	85	5	35	460	≈0	Stainless Steel
NF35BL	135	55	5	35	460	≈0	Stainless Steel
NF36BL	120	35	3	33	460	≈0	Stainless Steel
Silflex		100		35			
NF26BV	460	140		40	460		Stainless Steel

NANOFIL™ SYRINGE SPECIFICATION TABLE

Syringe Order Code	Volume	Syringe Type	Syringe Body	Autoclavable/ Gas Sterilizable	Plunger Stroke Length	Plunger Cap Dimensions	Syringe Barrel I.D. / O.D.*	Qty	MICRO4 / MICRO2T Syringe Type Selection
NANOFIL	10µL	Gastight	Borosilicate glass, Stainless Steel, PTFE	Yes 10°C/50°F to 80°C/176°F, 1000psig max pressure	60mm	O.D.*: 7.90mm (0.311in) Depth: 2.80mm (0.110in)	0.46mm (0.018in) / 6.40mm (0.252in)	1 EA	L (MICRO4) 5 (MICRO2T)
NANOFIL-100	100µL						0.46mm (0.018in) / 6.40mm (0.252in)	1 EA	

*I.D. = Inner diameter, O.D. = Outer diameter

TURN YOUR NANOFIL INTO A PRECISION DELIVERY SYSTEM

WPI's UMP3 Microinjection Syringe Pump pairs seamlessly with our line of NanoFil™ syringes, giving you exceptional control over low-volume injections. Its high-precision drive mechanism delivers smooth, consistent motion, enabling accurate microliter and even sub-microliter volumes for delicate sample delivery or extraction. With the UMP3 driving your NanoFil™ setup, you can work confidently knowing your system provides the accuracy and reproducibility required for today's most demanding small-volume applications.