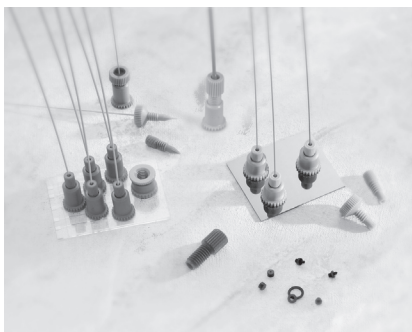


## INSTRUCTIONS FOR USE

# NanoPort™ Assemblies



NanoPort Assemblies are designed to provide consistent fluid connections for Lab-on-a-Chip devices. These patent-pending products bond easily to silicon, quartz and glass chip surfaces with the provided Preformed Adhesive Rings or with our special NanoPort Adhesive. Once attached, NanoPort connections withstand pressures to 1,500 psi (103 bar and will handle 1.5 – 6.0 in.-lbs. (0.17 N-m - 0.68 N-m) of torque, depending on the substrate.

All NanoPort components are made of inert, biocompatible PEEK™ polymer and perfluoroelastomer, and the design of these products eliminates the risk of adhesive contamination of the fluid path. NanoPort connections add no additional volume to a fluid path, eliminating the dead volume traditionally associated with chip-based fluid connections.



Upchurch Scientific®  
Part of the IDEX Health & Science Group  
Oak Harbor, WA  
Tel 800.426.0191 or 360.679.2528  
Fax 800.359.3460 or 360.679.3630  
Email info.upchurch@idexcorp.com  
Internet www.idex-hs.com

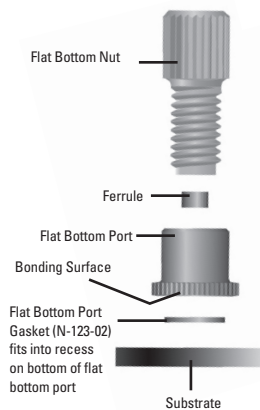
### Instructions For NanoPort Bonding

#### Adhesive Ring

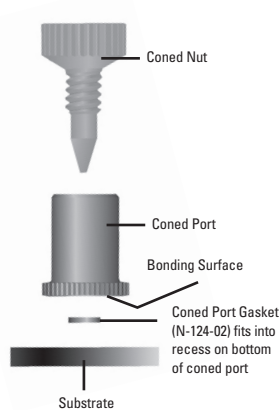
1. Prepare the bonding surfaces of both the Port and the substrate by cleaning with isopropyl alcohol.
2. Invert the NanoPort Flat Bottom or Coned Port.
3. Insert the gasket seal into the recess in the bottom of the Port.
4. Center and place the adhesive ring on your substrate surrounding the access hole. Then place the NanoPort over the adhesive ring. Note: On the flat-bottom versions of the NanoPorts, the adhesive ring may contact the outer edge of the Flat Bottom Port Gasket (see diagram, below). This is by design, as it can help hold the gasket in place while securing the NanoPort on the substrate.
5. **Clamp the Port to the substrate.** Place clamped Ports in oven at a temperature of 330-350° F / 165-177° C for one hour to develop a complete bond between the Port and the substrate.

**Important Note:** Unused epoxy adhesive rings should be stored in a refrigerated environment (35-40° F / 1.7-4.4° C) to ensure maximum usable lifetime. Failure to do so may result in reduced epoxy lifetime and/or poor adhesive bonding characteristics.

#### Flat Bottom Port Version



#### Coned Port Version



### 2-Part Epoxy Adhesive Gel-Room Temperature Cure

1. Prepare the bonding surfaces of both the Port and the substrate by cleaning with isopropyl alcohol.
2. Invert the NanoPort Flat Bottom or Coned Port.
3. Insert the gasket seal into the recess in the bottom of the Port.
4. Follow instructions on the back of the 2-Part Epoxy Adhesive Gel package to mix and prepare adhesive.
5. Advance mixed epoxy onto a clean disposable surface such as a polyethylene film. The working time (application time) will be extended if the epoxy is spread out rather than having all of the gel in a dense pool.
6. Apply the epoxy gel to the bottom of the Port, allowing the gel to come in contact with the outside surface of the Gasket, but not the face of the gasket. This will help keep the Gasket in place and prevent epoxy from coming in contact with the fluid stream.
7. Locate the Port on the substrate.
8. **Clamp the Port to the substrate.** Allow bond to cure for 24 hours at room temperature before removing clamp. The port will also cure at 120°F (49°C) for one hour.

#### Additional Bonding Tips

1. If NanoPort is to be attached to a polymer substrate, lightly abrading the area that will come into adhesive contact can improve bond quality.
2. If Port alignment is critical, a short piece of tubing of the same diameter as the access Port, together with appropriate nut and/or ferrule, can be used to align Ports during adhesive curing.