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### **Polycrystalline IR-Fiber handling instruction**

Polycrystalline IR-fiber is made of AgCl-AgBr solid solution.  
PIR-fiber is sensitive to external conditions and require special handling.

- The storage room and working place should be free of metal dust and SO<sub>2</sub>- containing reactants.
- Prevent any contact of the fiber with metals to avoid a chemical reaction which will damage both the fiber and the metal surface! Following materials including some metals won't cause any damages:
  - polymers, dielectrics
  - Au, Ag, Ti, Nb, Ta, Pt
- Do not expose the fiber to visible and especially to UV-irradiation including luminescent light, due to irreversible silver colloids formation and increasing optical losses. Store the fiber in dry and dark conditions. We recommend to put the fiber in black loose polymer tube.
- Protect fiber tips with non-transparent caps against UV- and visible light, against any contamination and mechanical damage. Remove the caps only for necessary operations.
- Prevent multiple bending of the fiber with a radius less than  $R=150\varnothing$  ( $\varnothing$  is the fiber diameter) otherwise the plastic deformation will be induced. Plastic deformation of the fiber occurs at small radius bending and results in the transmission drop.
- If some contamination is on the fiber surface then wipe it carefully with isopropanol or acetone.
- Working temperature for the bare fiber is -273 +140°C. Ask for special instructions to work with PIR fiber at cryo conditions.
- art photonics GmbH is not responsible for any losses or damages caused by the contact with metal parts.
- See also our Handling Instruction for Polycrystalline fiber cables