Table 1
Some commonly used materials in wire chamber systems (see glossary for some abbreviations used)

| Material | Common or trade name | "Rating" | Comments |
|---|---|---|---|
| *Gas tubing, plumbing, bubblers* | | | |
| Stainless steel | | very good | electropolished SS is best |
| Copper, hydrogen fired | | very good | |
| Copper, refrigeration | | perhaps OK | some Cu tubing is drawn using lubricating oil: bad |
| Aluminum | | depends on gas | Al is very active chemically, but forms a protective oxide. Not a very good cathode material |
| Polyethylene | Poly-flo | good | |
| Polyamide 11 | Nylon, Rilsan 11 | very good | works with DME |
| Polyvinyl chloride (with plasticizer added) | PVC, Tygon | very bad | outgases phthalates, halogenated hydrocarbons – causes aging |
| Polytetrafluoroethylene | PTFE Teflon | good if "baked out" | electron capture in DME ("unbaked" FEP) |
| Perfluoroethylene propylene | FEP Teflon | | |
| Perfluoroalkoxy | PFA Teflon | | |
| Trichloroethylene, and Trichlorotrifluoroethane | chlorinated cleaning solvents | bad if any residue remains | can outgas: chlorine probably causes fast aging |
| Silicone grease | | bad | silicone often found on anode |
| Silicone oil (in bubbler) | | bad [a] | moderate to severe aging |
| High-boiling polycyclic petroleum fraction (in bubbler) | mineral oil | OK [a] | |
| Water (in bubbler) | | OK | beneficial in small concentrations "additive" (deionized water best) |
| Refined petroleum oil (in bubbler) | mechanical pump oil | OK [a] | |
| *Chamber materials* (see also materials above used for plumbing): | | | |
| Fiberglass/epoxy | G10 | probably OK | must have *clean surface*: mold-release agent (silicones) may be on surface (very bad) |
| Methyl methacrylate | Lucite, Plexiglas | OK | |
| Glass | – | OK | |
| Polymethacrylimide | Polyfoam | OK | |
| Polyethylene terephthalate | Mylar | OK | |
| (?) | Rohacell | probably OK | |
| Alumina ($Al_2O_3$) | ceramic | OK | $Al_2O_3$ can accumulate charge |
| Glass ceramic ($SiO_2$, $Al_2O_3$, MgO, $K_2O$, $B_2O_3$, F) | Macor | probably OK | bad results reported with DME |
| Epoxies | Torr-Seal | OK | good results with all of these, but the "5-minute" can be hygroscopic (surface moisture) |
| | "5-minute" | OK | |
| | Epon/Versamid | OK | |
| Polyurethane | | probably bad | report of bad effects from soft urethane adhesive |
| Silicone polymers | RTV: 1 part | bad | acetic acid smell: causes aging |
| | RTV: 2 part | ? | probably OK – little data |
| Polyoxymethylene | Delrin, Hostaform | OK (?) | |
| Polyphenylene oxide | Noryl | OK (?) | |
| Fluorinated copolymer | Viton | good, usually | bad results reported using DME |
| Polychlorotrifluoro-ethylene | Kel-F | good | |