



## Which Type Of Tubing Is Best For You?

*Flexible, Strong, Chemical Resistant, Inexpensive, Compatible Fittings*

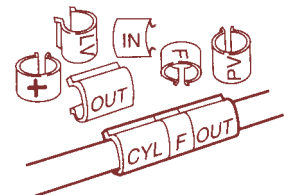
Flexibility, strength, chemical resistance, cost, fitting compatibility; these are a few of the things you'll want to evaluate when selecting the type of thermoplastic tubing you use. The three most common and widely used types of thermoplastic tubing are Nylon, Polyethylene and Polyurethane. Each type will have specific benefits and disadvantages over the other two types. An example of this is Polyurethane tubing, which is the most flexible; but the softer durometer versions (below 90) will limit your push-in fitting options to only those that can retain it. There isn't one type of tubing that is best; so the best choice depends on how it will be used. It is important to understand how durometer relates to tubing.

**DUROMETER** - is the hardness of the tubing wall. A lower durometer -softer wall- does not mean more flexible. A softer, lower durometer 85 polyurethane tube will actually pinch or kink easier than a 95 durometer polyurethane. The flexibility of the 85 and 95 will be nearly identical. Then why use softer wall tubing? Barb fittings require the wall be soft enough to allow the tube to expand over the barbs and allow the barbs to penetrate the wall for retention. You won't be happy using barb fittings with harder wall tubing, or have much success with the tube staying on the fitting.

**FLEXIBILITY** - is determined by the composition of tubing. If you need the most flexible tubing then use Polyurethane.

We have compiled some data from tubing manufactures, located on the back page, which will help with some of the application differences between the three types of tubing. Once you have selected the appropriate type of tubing for your application, there are several things that can simplify your tubing experience:

- Use a tubing cutter to provide a clean, square cut. For as many pocket, utility and other type of knives we see used for cutting tubing, you'd think the tubing cutter was an expensive item.
- Many colors are available. Use colored tubing to simplify assembly, troubleshooting and component replacement.
- Adhesive labels and clips are available to aid with tubing identification.
- Want your tubing customized with your part number, company name, or other information? This is easy to provide.



**TUBING AND PUSH-IN FITTING COMPATIBILITY** - There are two types of tube retention methods used in push-in type fittings. Usually the retention method is not a consideration when selecting a brand of push-in fittings, unless you use polyurethane tubing softer than 90 durometer.

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If you use polyurethane tubing softer than a 90 durometer and want to have reliable connections, than you'll need to find a manufacturer that uses a tubing retention method which is commonly referred to as a grab ring design. A cross section of both types will look very similar, but the grab ring design will allow the teeth to penetrate the tubing a little further, thus allowing retention of the soft tubing.

There are not many manufactures that use the grab ring design, so if you use the softer polyurethane tubings, below 90 durometer, your choices for push-in fittings will be significantly reduced.

We stock both types and will provide samples free of charge for evaluation.

Tubing Guide 1= Best / 3=Worst	POLYURETHANE		
	POLYETHYLENE		
	NYLON		
● Durometer	95		85-98*
● Flexibility	3	2	1
● Push-in Fitting Compatibility	All	All	+
● Barb Fitting Compatibility	No	No	Yes
● Operating PSI 1/4" x .062 wall	500	200	100
● Temperature Range, °F	-60/200	-100/175	-40/180
● Kink Resistance	3	2	1
● Chemical Resistance	1	2	3
● Overall Durability	1	2	3
● Outdoor Use	Limited	No	No
● Cost	3	1	2
<p>*Typical range used for pneumatic applications.</p> <p>+Many push-in fittings will not reliably work on lower than 90 durometer Polyurethane tubing.</p> <p>The chart is only a general guideline only. Not all ratings apply 100% of time in all conditions. We will provide fitting and tubing samples free of charge for your application evaluation.</p>			