

IMPROVING YOUR LAB WATER SYSTEM

Water purification is a costly business. You want to provide your lab with the highest quality of water at least amount of cost. Use the correct quality of water for the correct application.

The National Committee for Clinical Laboratory Standards (NCCLS) has specified three types of water quality:

- Type I is suitable for analytical testing requiring minimal interference and maximum precision and accuracy
- Type II is suitable for analytical tests where some bacteria can be tolerated
- Type III is suitable for general washing and as feed water for producing higher grade water

Common lab applications that use different types of lab water

- HPLC
- PTFE
- Healthcare and pharmaceutical
- GC-MS
- DNA/RNA

There are several water treatment processes

- Distillation
- Deionization
- Reverse osmosis
- Activated carbon filtration
- Ultrafiltration
- Ultraviolet oxidation
- Electrodialysis (EDI)

Generally, you will want to use a central water purification system such a reverse osmosis for your general lab requirements and a point of use purification system your ultra-pure water requirements.

Most labs will have variable water requirements as your business grows. Water quality and quantity that is satisfactory today may not meet your requirements in a few years. You want a flexible and modular design that can grow with you and your lab facility.

The right design that meets your needs today and is flexible enough to grow with you is the most important consideration. The next equally important consideration is the regular, preventive maintenance of the system. Most systems will alert users of when the useful life of each component is near depletion. Water quality should be manually checked on a scheduled basis. The last consideration is to make sure the purified water is dynamic. You want the water to circulate when not being consumed. Sitting water almost guarantees what is purified will become contaminated.