

# PURAD®

Pharmaceutical and  
Bio-Pharmaceutical  
High Purity  
Piping Systems

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**agru**  
TECHNOLOGY  
IN PLASTICS



# PURAD®: PURE AND SIMPLE

Biotechnology is changing the pharmaceutical marketplace.

Ground-breaking technology provides new methods for producing pharmaceutical products. These innovations require the need for cleaner, better, faster-built, and longer running operations without the need of system shutdowns. The use of thermoplastic materials in production systems is the latest advance in reducing costs, with the added benefits of improving operational efficiencies and system purity. AGRU is pioneering the way for the industry to take advantage of the benefits of these materials.

## A Strategic Approach to High Purity Systems

AGRU HP thermoplastic piping systems provide superior quality, unpigmented, natural polypropylene (PolyPure), and PVDF-HP products for many applications in research and development as well as manufacturing. PolyPure and PVDF-HP pipe, fittings, valves and instrumentation are well suited for high purity water systems. For water systems in the pharmaceutical and biotechnology (AP and WFI), PVDF may readily be substituted for 316L stainless steel. Since it may be steam sterilized, PVDF is also a good choice for solution preparations and transfers. For Purified Water, cost-effective, natural PolyPure is the material of choice. Both piping systems have undergone extensive testing for extractable levels, and the FDA has approved the raw materials for food and pharmaceutical applications.

## Planned Quality Control from Manufacturing to System Validation

AGRU uses a regulatory approach in both the manufacturing and technical support of its High Purity products (PURAD® products). All components are produced and packaged in clean room environments. A rigorous quality control program ensures that the customer shall receive products as specified and packaged so that they are 100% contamination free. Our systems are designed around the stringent requirements defined by FDA guidelines and listed in all current codes.

AGRU produces a quality assurance certificate for each batch of components, which we will furnish to you upon request.



Welding Systems offer smooth internal surfaces for maximum purity performance. No internal beads during welding provide a system which is ideally suited to demanding Pure water and WFI applications.

The documentation is in a format that readily translates to protocols for Installation Qualification (IQ) and Operational Qualification (OQ). Even if the client uses a different protocol format, the information is easily inserted. For greater convenience, an electronic version will be available.

All AGRU products come with installation, engineering and validation support. The key to validation is documentation: AGRU supplies all the information required by the regulatory agencies for pharmaceutical and biopharmaceutical applications.

The PURAD® system allows for an active and seamless transition. Sanitary Transition fittings mate to metal systems allowing P



### **Elimination of Historic System Worries**

Here are just a few of the notable advantages of employing our thermoplastic piping systems: material and installation costs are lower than with conventional metal systems; chemical resistance is extremely high; rouging and associated metal contamination problems are nonexistent; and borescoping and passivation are not required. In addition, we manufacture all materials with smooth surfaces to meet or exceed the standard for Mechanical and Electropolished Stainless Steel. These smooth surfaces are unfavorable for the proliferation of microorganisms.

### **Comprehensive Product Offering**

PVDF-HP is available in a complete offering of 20 up to 315 mm. PolyPure may be obtained in sizes of 20 up to 110 mm. PolyPure and PVDF-HP fittings and valves are also available in zero dead leg configurations.

In addition to piping, fittings and valves a Vortex Flow Meter is ideal for pharmaceutical operations. The instrument has no moving parts and is crevice free. It may be steam-sterilized and can be installed in Purified Water, Water For Injection, and Solution Preparation Systems.



AGRU offers the AGRUAIR piping system for pharmaceutical compressed air applications and special gasses systems. If you require sanitary piping and distribution of air, nitrogen, carbon dioxide and other inert gases, AGRUAIR offers a more cost-effective system in comparison to Stainless Steel piping systems.

### **Practical Joining Technology Appropriate for each Application**

For each type of installation AGRU will provide the appropriate type of joining equipment. Joining technology is available in beadless joining, automated IR, butt fusion, and socket fusion. The HPF system is the only method on the market that provides practical fusion with a smooth inner surface. Welds can be done quickly in almost any location. HPF equipment is completely portable making installations, tie-ins, and additions easier to conduct than ever before.



The HPF Welding System is unique in its ability to conduct ultra pure welds in tight locations, such as in pipe racks and under sub-floors.

### **Products for each Application**

- For a Purified Water System, Polypure and PVDF-HP are recommended.
- For a Water for Injection System, PVDF is the best choice because of its high temp and pressure capability.
- For Compressed Air and Special Gases, AGRUAIR is the recommendation.

For all systems please contact our technical team for engineering assistance and technical specifications.



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