

# AGRU - The Plastic Experts

## RELIABLE PIPEWORK FOR DECADES

Piping systems for computer chips: AGRU PURAD PVDF-UHP pipes and fittings.



*PURAD fluoropolymer piping systems offer chemical resistance and high purity*

*PURAD piping components are manufactured by AGRU Kunststofftechnik GmbH in Austria in ISO class 5 cleanrooms. They are used for high-tech applications in the semiconductor industry, for TFT and OLED manufacturing, and in the life sciences, food and photovoltaic industries. The PURAD brand name stands for absolute purity, uncompromising quality, outstanding customer benefits, and high operational reliability.*

IPS Flow Systems have been and continue to be at the forefront of our industry for over 30 years with relationships grown and strengthened in tandem with the unrelenting support of our key manufacturing partners. Whilst servicing the island of Ireland from our head office in the North East of England for many years, we further magnified our intent to better serve our clients in Ireland and reaffirm our commitment to market, by opening our Dublin branch in 2016. Operating from Rathcoole, Co. Dublin, on the fringe of all major routes, we have grown and continue to command a presence in Ireland, with the customer as our number one priority.

Requirements differ from application to application, so PURAD products are manufactured from different thermoplastic polymers selected for their specific advantages. PVDF-UHP is ideal for the transport of ultra-pure-refined

media. PVDF is a thermoplastic homo-polymer with excellent media resistance, a high level of mechanical strength, and maximum purity without additives or stabilisers. This makes it physiologically safe and suitable for use in ultra-high-purity applications. It also offers high mechanical strength and excellent chemical resistance, working well at temperatures between -20°C and +120°C. The extruded stock with diameters between 20mm and 315mm is produced on multiple extrusion lines housed on the ground-floor level of the new facility. Surface roughness, diameter, section thickness, length and cleanness are monitored continuously in a battery of precisely defined quality tests. A sophisticated cleanness concept in AGRU's cleanroom plant ensures that all pipes, fittings, valves, seals and flanges are produced to an ultra-high standard of cleanness and are hermetically packaged and double-sealed ready for dispatch from the facility.

For applications involving temperatures between -30°C and +140°C or very aggressive chemicals, ECTFE is the right choice. ECTFE consists of an alternating arrangement of ethylene and chlorotrifluoroethylene. This makes it the ideal material for applications involving high temperatures and extremely aggressive media. When transporting aggressive media like concentrated sulphuric acid (H<sub>2</sub>SO<sub>4</sub>), nitric acid (HNO<sub>3</sub>) or oxidising agents such as hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and sodium hypochlorite (NaClO) as well as concentrated alkalis, ECTFE is the only resistant plastic with an excellent price-performance ratio. Even when these media are transported under high pressure or at high temperatures, the AGRU ECTFE piping system remains permeation-resistant and leak-proof. The excellent surface quality and abrasion resistance make fluoropolymers the ideal materials for use in the petrochemicals industry, life sciences and the food industry.

### PURAD Welding technology

AGRU offers different welding methods. The innovative and patented PVDF E-coupler welding technology as well as contact-free and beadless welding methods are well suited for all PURAD products. AGRU welding machines are perfectly adapted to industrial requirements and deliver optimal quality and performance.

Electrofusion socket welding is available for PVDF UHP piping system components. It provides short welding times and easy handling. An advantage is the welding with no inner bead thanks to the special design of the compact E-coupler and patented welding process.

Contact-free IR welding ensures automatic, contact-free welding with highest purity & reproducibility. The bead is reduced to a minimum and up to 70% shorter welding times in comparison to conventional heated element butt-welding is achieved. The machines form the brand new SP-series perform welding process and documentation fully automatically for all AGRU piping systems with outside diameters between 20mm and 315mm.

Beadless welding features absolutely smooth surfaces and prevents accumulation of deposits for highest purity. This technique is particularly well suited for sanitisable piping systems in the life science industry. All AGRU welding machines are easy to use with touchscreen operation, automatic welding processes for 100% reproducibility and are suitable for the materials PVDF-UHP, PVDF, PP-R, PP-H, PP-Pure, Polypure, ECTFE, Poly-Flo and PE 100-RC.

## WELDING

### INFRARED WELDING MACHINES FROM AGRU

- ERGONOMIC / SAFE
- OPTIMISED FOR CLEAN ROOMS
- SUITABLE FOR ALL AGRU PIPING SYSTEMS
- COMPUTER-CONTROLLED WELDING PROCESSES
- SIMPLE DIMENSION CHANGE WITHOUT TOOLS
- INTELLIGENT SENSORS FOR IDEAL RESULTS
- AUTOMATIC WELDING
- MAXIMUM PERFORMANCE



## PURAD

### HIGH PURITY PIPING SYSTEMS

- EXCELLENT CHEMICAL RESISTANCE  
Withstands aggressive media and extreme temperatures
- WEATHERING & CORROSION RESISTANCE  
Lining as corrosion-protection for steel, FRP and concrete tanks
- SUCCESSFULLY USED FOR MANY YEARS  
Safe handling of 98 % sulphuric acid at up to 70 °C for 15 years
- FAST AND COST SAVING INSTALLATION  
Infrared welding technology for joining of pipes and fittings available
- EXPERTISE IN PLASTICS PROCESSING  
Decades of experience and R&D



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