

AGRUCHEM

INDUSTRIAL
PIPING SYSTEMS





The Plastics Experts.

AGRUCHEM industrial piping systems have proven their value for decades in industrial plants around the globe. The various systems are characterised by outstanding operational reliability, easy installation and extremely low maintenance overheads. Whether it is leakage-monitored double containment piping systems, abrasion-resistant multilayer systems, or the ECTFE system, which is even resistant to nitric acid, AGRU has the best solution for virtually any industrial application in its portfolio.

The AGRU success story has been unfolding now for around seven decades. Founded back in 1948 by Alois Gruber senior, nowadays the company is one of the world's most important single-source suppliers for piping systems, semi-finished products, concrete protection liners and lining systems made from engineering plastics. Our ability to supply everything from a single source sets us apart. We use only top-grade thermoplastic polymers as our raw materials. When it comes to application-technical consulting, we are your best partner in the field.



Quality

At AGRU, customer satisfaction comes first. Technical consultations, training courses, welding instruction and expert supervision on site are essential parts. The AGRU quality assurance system is compliant with ISO 9001:2015 and its environmental management system fulfils ISO 14001:2015. This in turn ensures that the products comply with international norms, as monitored and evaluated on an ongoing basis by independent testing agencies standards.

The start-to-finish attention to quality ensures that the products meet and beat the strictest technical specifications, providing safe operation within gas, water and waste-water infrastructures.

Reliable plant operations for decades

AGRUCHEM industrial piping systems include materials and pipe types for practically any industrial application. Excellent chemical resistance and an extremely wide temperature application range make our AGRUCHEM industrial piping systems the ideal solution for pipework in plant, equipment and tank construction, and also in the petrochemicals industry.

Fast and easy installation

Pipes, fittings and customized solutions perfectly harmonized

Our strength lies in more than 50 years of experience and offers you

- carefully thought-out systems optimised down to the finest detail
- unique application technology advice from experts
- easy planning, fast installation and effective logistics

Maintenance-free pipework

Welded joints and materials for high operational reliability

Efficient and reliable operation of your plant thanks to

- durable and robust system components
- corrosion-free and extremely resilient plastics
- tried-and-trusted AGRUCHEM industrial piping systems

Double operational safety

The compact Poly-Flo double containment piping system is highly reliable

A media pipe and a protective pipe extruded in a single production step offer

- absolute operational safety thanks to a double containment pipe
- easy installation thanks to time-saving simultaneous welding
- a space-saving design and leakage monitoring of the annular gap

High media resistance

Pipes and fittings made from PE 100-RC/PP/PVDF/ECTFE

A product range that leaves no wish unfulfilled, including

- customised PE and PP types for special fields of application
- electrically conductive, flame-retardant and chemically resilient materials
- maximum acid and lye resistance



AGRUCHEM industrial piping systems developed by experts



PP-H/PP-R industrial piping systems

Plastic pipes and fittings made of PP-H and PP-R have proved their value for decades in every area of industry. Above all, excellent temperature and corrosion resistance ensure durability. PP is characterised by its superior strength, stiffness, hardness and the temperature and chemical resistance these features ensure. PP can be used between -5 °C and +95 °C.

Electrically conductive: PE 100-el / PPS / PPS-el

In plastic piping system building, electrically conductive piping must be used in areas with a risk of explosion. Electrical conductivity can be achieved by adding carbon black. This ensures that the well-known advantages of polyolefins, such as chemical resistance and ease of processing and installation, are retained. However, the conductive carbon black does reduce the impact strength and creep strength.

Fluoroplastic systems

PVDF is a thermoplastic homopolymer with excellent media resistance, a high level of mechanical strength, and maximum purity without additives or stabilisers. 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. These plastics can be used between -30 °C and +140 °C. Aggressive media such as nitric acid, sulphuric acid, free chlorine and ozone can be transported safely. The excellent surface quality and abrasion resistance make them ideal materials for use in the petrochemicals industry, life sciences and the food industry.



Double containment piping systems

The reliable Poly-Flo double containment piping system made of PP or PE is extruded in a single production step. Thanks to its compact design with a small annular gap and low weight, the system can be quickly and reliably installed using simultaneous welding, even in cramped conditions.

AGRUAIR piping systems for compressed air

AGRUAIR is a compressed-air system for loads of up to 16 bar which is available in outer diameters from 20 mm to 110 mm. Made of PE 100 it is ideal for compressed-air applications. PE 100 remains permanently free of corrosion, is resistant to oils used in compressors, to stress cracks, and impacts, and can be used between - 40° and + 60° Celsius.

PP is ideal for pickling plants, the chemicals industry and also for extremely aggressive sewage, because chemicals at high temperatures are used in these areas.

PP-H/PP-R - industrial piping systems for high temperatures and chemicals



Special applications

PP plays an important role in reverse osmosis, which is used in desalination plants. Permanent freedom from corrosion and resistance to salts and minerals, as well as smooth inner surfaces, ensure decades of maintenance-free operation. As high operating pressures are typical in plants of this type, PP – with its high creep strength – is the most popular material.

Custom parts - tailor-made solutions

AGRU has been known for its unrivalled expertise in custom part manufacturing for decades. Segmented fittings made of PP were used in this project for an industrial ventilation system. PP impresses with its high temperature and chemical resistance here as well.



Product range AGRUCHEM

PP-H/PP-R industrial piping systems

Pipes

PP-H OD 20mm – 1400mm

PP-R OD 20mm – 800mm



MULTI Fittings

SDRs of 17 and 11

OD 20mm – 315mm



Long Spigot Fittings

SDRs of 17 and 11

OD 20mm - 315mm



Short Spigot Fittings

SDRs of 17 and 11

OD 20mm - 500mm



Segmented Fittings

SDRs of 17, 26, 33 and 41

OD 560mm – 1200mm



Socket Welding Fittings

SDR of 7.4

OD 20mm – 110mm



Electrofusion Welding Fittings

OD 20mm – 355mm



Valves

OD 20mm – 140mm



Backing ring

PP-GFK 20mm - 630mm



Desalination
Brochure



Fluoroplastic systems Safe transport of highly aggressive media



PVDF - highest product purity

Polyvinylidene fluoride (PVDF) is an ultra-high purity homopolymer without additives. This makes it physiologically safe and suitable for use in ultra-high purity applications. It also offers high mechanical strength and excellent chemical resistance. Just like ECTFE, PVDF is easy to handle and use. It can be used between -20 °C and +120 °C.



ECTFE - the premium class

Ethylene chlorotrifluoroethylene (ECTFE) is a thermoplastic copolymer with an alternating arrangement of ethylene and chlorotrifluoroethylene. For applications involving temperatures between -30 °C and +140 °C or aggressive chemicals (e.g. free chlorine in the medium and 98% sulphuric acid), ECTFE is the ideal solution. The ECTFE piping system is the ready-to-use, highly resistant piping system made by AGRU. For even tougher requirements, AGRU also supplies liner pipes made of FEP and PFA, which possess the highest chemical resistance.

Product range AGRUCHEM

ECTFE/PVDF industrial piping systems

Pipes

PVDF OD 16mm – 400mm
ECTFE OD 20mm – 200mm



MULTI fittings

PVDF OD 20mm – 225mm
ECTFE OD 20mm – 160mm



Fittings

PVDF OD 16mm – 315mm
ECTFE OD 63mm – 160mm



Fittings for socket welding

PVDF OD 20mm – 110mm



Valves

PVDF OD 20mm – 140mm
ECTFE OD 20mm – 63mm



HPF coupler

PVDF OD 20mm – 63mm



Union

PVDF OD 20mm – 90mm
ECTFE OD 20mm – 63mm



Backing ring

PP-GFK 20mm - 630mm



AGRUCHEM ECTFE
Brochure



Double containment piping systems for double safety



Double containment piping systems

Poly-Flo includes piping systems made of PE 100-RC or PP-R for the safe transport of hazardous media. They are easy to install using simultaneous or cascade welding, and both the media pipe and the protective pipe offer full pressure resistance.

Double containment piping systems are prefabricated as standard and can be connected using simultaneous butt welding, after spacers have been welded in, or using cascade welding.



Product range AGRUCHEM double containment piping systems

Poly-Flo pipe

PE 100-RC / PPR

SDR 17/11

Dim. 50/32, 90/63, 160/110

PE 100-RC / PPR on request

SDR 33/17

Dim. 160/110, 225/160

SDR 17/11

Dim. 225/160



Poly-Flo fittings

injection moulded

PP-R + PE 100-RC

SDR 17/11

Dim. 50/32, 90/63, 160/110



Poly-Flo fittings

segmented

PE 100-RC / PPR

SDR 17/11

Dim. 50/32, 90/63, 160/110

PE 100-RC / PPR on request

SDR 33/17

Dim. 160/110, 225/160

SDR 17/11

Dim. 225/160



Poly-Flo measuring fitting

turned

PE 100-RC / PPR

SDR 17/11

Dim. 50/32, 90/63, 160/110

PE 100-RC / PPR on request

SDR 33/17

Dim. 160/110, 225/160

SDR 17/11

Dim. 225/160



Double containment fitting

PP/PP, PE/PE

Simultaneous welding

from dim. 90/32 to 355/250



Double containment pipe

fitting

PE/PVDF

Cascade + E-fusion-welding

from dim. 90/32 to 280/160



Poly-Flo
Brochure



AGRUAIR Piping system for compressed air



AGRUAIR - efficient compressed-air transport

The material advantages that PE 100 is known for, such as toughness, flexibility and elongation at break, are ideal for the AGRUAIR compressed-air pipelines and ensure optimal flow conditions. Compressing air also always creates condensation, which causes corrosion or patina inside metal pipes. PE 100 remains completely maintenance and corrosion-free, and even the machine oil from the compressor cannot damage the material. AGRUAIR pipes are insensitive to vibrations as well. Thanks to their flexibility, low weight and very good welding properties, installation is easy and safe.



Maintenance-free pipework

AGRUAIR are set apart by the fact that they are completely maintenance-free. Thanks to the robustness and flexibility of the plastics, the pipes' smooth interior walls and the complete lack of corrosion, a system typically remains sealed and deposit-free for decades once welded. The plastics PE 100 can fulfil virtually any requirement in the wide temperature range from - 40° to + 60° Celsius. To regulate the bleeding of compressed air, AGRUAIR is equipped with a controllable plastic ball valve.

AGRUAIR product range

Pipes

AGRUAIR PE 100 blue

OD 20 mm – OD 110 mm



Elbow 90°

Transition elbows 45° and 90°

AGRUAIR PE 100 blue

OD 20 mm – OD 110 mm



Elbow 45°

AGRUAIR PE 100 blue

OD 20 mm – OD 110 mm



Reducer concentric

AGRUAIR PE 100 blue

OD 25/20 mm – OD 110/90 mm



Flange adaptors

AGRUAIR PE 100 blue

OD 20 mm – OD 110 mm



Tees normal/reduced

AGRUAIR PE 100 blue

OD 20 mm – OD 110 mm



Adaptor with metal thread

AGRUAIR PE 100 blue

OD 20 mm – OD 63 mm



Ball valve

AGRUAIR PE 100 blue

OD 20 mm – OD 63 mm



E-couplers

AGRUAIR PE 100 black

OD 20 mm – OD 110 mm





Electrically conductive customised materials Safe transport of substances with a risk of explosion



Operational safety is key

An electrostatic charge in the pipework must be prevented when flammable media is being poured in, emptied, stirred, mixed or sprayed. If the pipework is routed through an potentially explosive atmosphere, a single spark discharge can cause an explosion. ESD (electrostatic discharge) sensitive plastics offer additional safety by permanently dissipating electrostatic charges in a controlled manner. They are therefore used in areas where sparks from electrostatic charges need to be prevented due to explosion protection requirements, and are used for piping systems in areas with a potentially explosive atmosphere.



Easy installation

Both PPS-el and PE 100-el can be butt, socket or heating wire welded. In heated element butt welding, the pipe is able to conduct electricity beyond the joint layer without additional work. The electro-socket welding of electrically conductive pipes using electro-socket fittings made of non-conductive PE is only permissible with electro-socket fittings equipped with embedded heating wires, as low current flows can occur otherwise.

Product range AGRUCHEM

PPS-el / PE 100-el

ESD (ELECTROSTATIC DISCHARGE)

Pipes

PPS-el

OD 32mm – 400mm

PE 100-el

OD 32mm – 400mm



90° bend

PPS-el

OD 32mm – 315mm

PE 100-el

OD 125mm – 315mm



Tee

PPS-el

OD 32mm – 315mm

PE 100-el

OD 32mm – 315mm



Reducer concentric

PPS-el

OD 63/16mm –

315/225mm

PE 100-el

OD 63/16mm –

315/225mm



Stub flange

PPS-el

OD 32mm – 400mm

PE 100-el

OD 32mm – 400mm



Backing ring

PPS-el

OD 32mm – 315mm





References

The AGRUCHEM range of industrial piping systems includes electro-socket fittings, socket welding fittings and butt welding fittings for any application.



AGRUCHEM 90° MULTI bends are available in a variety of materials and complete the AGRU industrial piping system range.

Pipes made of PE offer a variety of industrial application options. Thanks to their high resistance to UV light, they can also be installed outdoors as well as indoors.





The AGRUCHEM Poly-Flo double containment piping system can be joined using time-saving simultaneous welding.



AGRUCHEM pipework made of electrically conductive PE is required in many industrial applications.



PP is also very suitable for reverse osmosis in seawater desalination.



The Plastics Experts.

Your distributor

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