

AGRUCHEM

INDUSTRIAL
PIPING SYSTEMS
应用于工业领域
的管道系统





The Plastics Experts. 塑料制品专家

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. Be it 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.

在世界范围数十年的工业应用中，AGRUCHEM工业管道系统已经证明了它的价值。各种不同类型的系统都具有出色的可操作性，安装方便，并且日常维护费用低廉。无论是带有泄漏检测的双层管道系统，耐磨的多层系统还是可以抵抗硝酸的ECTFE系统，AGRУ拥有几乎匹配所有工业应用的最佳解决方案。

AGRУ的成功故事已经延续了大约70年。从1948年由Alois Gruber先生创立至今，已经成为了以工程塑料为原料的包括管道系统、半成品、混凝土保护衬垫和衬垫系统的全球性重要供应商之一。与众不同的是，我们有能力以单一原材料提供产品。我们只会选用最高规格的热塑性塑料作为原料。当您有涉及技术方面的问题时，我们是您在这个领域中最好的合作伙伴。



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 wastewater infrastructures.

品质

在AGRУ，客户的满意至上。技术咨询、技术培训、焊接指导以及专家现场指导是我们最基本的服务。AGRУ的质量保障体系符合ISO 9001:2015，环境管理体系符合ISO 14001:2015。由独立的测试机构标准监督与评估，这就进一步确保了我们的产品符合国际标准。

自始至终对质量的关注，使我们的产品质量达到甚至超越了最严格的质量标准，为气体、水、排污等基础设施建设提供了安全保障。

Reliable plant operations for decades

AGRUCHEM industrial piping systems include materials and pipe types for virtually 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 resistant materials
- maximum acid and lye resistance

数十年来可靠的工厂运作

AGRUCHEM工业管道系统囊括了几乎所有工业应用的材料和管道类型。在工厂、设备、储罐制造以及石油化工行业中，得益于原料极强的耐化学性能和极宽的温度适用范围，使得我们的工业管道系统成为了理想的管道工程解决方案。

安装快速便捷

管道、管件和为客户定制的解决方案完美统一

我们以50多年的丰富经验为您服务

- 经过深思熟虑的系统优化到了每一个细节
- 来自专家独到的技术应用建议
- 简单计划，快速安装，物流高效

免维护的管路工程

高运行可靠性的焊接接口与材料

您的工厂能够高效可靠地运行得益于

- 耐用而强韧的系统组件
- 耐腐蚀且有弹性的塑料
- 经过实践检验、可信赖的AGRUCHEM工业管道系统

双重操作安全性

可靠的拥有紧凑结构的Poly-Flo双层管道系统

输送介质管和保护管一次成型

- 得益于双重密封，操作变得绝对安全
- 得益于同步焊接，安装变得省时而且简便
- 有利于节省空间的设计并且在内外管的环状间隙加入了泄漏检测系统

高介质抗性

管道和管件由PE 100-RC/PP/PVDF/ECTFE 制成

产品范围包罗万象

- 为特殊应用定制的PE、PP产品类型
- 导电、阻燃、化学抗性材料
- 最强的耐酸碱性



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.

PP-H/PP-R 工业管道系统

在几十年间，由PP-H、PP-R制成的管道和管件已经在每个工业领域都证明了他们的价值。首先，极强的耐温耐化学性质，保证了系统的耐久度。其次，PP具有优越的强度、刚性和硬度等特点。PP能在-5°C至+95°C下使用。

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. Electrically conductive plastics modified by the addition of carbon black guarantee that the known benefits of polyolefins, such as chemical resistance and easy processing and installation, are retained. However, the conductive carbon black does reduce the impact strength and creep strength.

导电： PE 100-el / PPS / PPS-el

在塑料管道系统中，有爆炸危险的地方必须使用导电管道。添加了炭黑的导电塑料，已知的优点还是会继续的保留下来，例如：化学抗性和易加工安装的性质。然而，炭黑的加入，降低了抗冲击强度和耐蠕变性。

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.

氟塑料系统

PVDF是一种热塑性均聚物，拥有很强的耐介质性和高机械强度，并且不含添加剂和稳定剂，这使它拥有最高的纯度。ECTFE由三氟氯乙烯和乙烯共聚而成。这使它成为应对高温和强腐蚀性介质的理想材料。这种塑料可以在-30°C至+140°C下使用。像硝酸、硫酸、游离氯和臭氧这类的强腐蚀介质可以被安全地输送。由于出色的表面质量和耐磨性，使它成为石油化工、生命科学以及食品工业的理想材料。



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.

双层管道系统

具有高可靠性的Poly-Flo双层管道系统是以PP和PE为原料一次共挤而成的。归功于紧凑的设计，管道的环状间隙很小并且质量轻，即使在狭窄的区域，我们的管道系统也可以用同步焊接快速而可靠的连接。



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.

AGRUAIR 压缩空气管道系统

AGRUAIR是一种压缩空气系统，可用于负载高达16bar，外径从20mm到110mm。由PE 100制成，是压缩空气应用的理想选择。PE 100永久不受腐蚀，耐压缩机用油、应力裂纹和冲击，可在-40° 和+60° 摄氏度之间使用。

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.

针对酸洗厂、化工厂以及具有腐蚀性的污水管路中的高温化学物质，PP是一种理想的材料。

PP-H/PP-R - industrial piping systems for high temperatures and chemicals 针对高温和化学品的PP-H/PP-R工业管道系统



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.

特殊应用

在海水淡化装置中，PP在反渗透应用中扮演着重要的角色。永久的抗腐蚀，耐盐和耐矿物磨损，以及光滑的内表面，确保了数十年的免维护操作。较高的操作压力在工厂中是很典型的，PP因为其高蠕变强度，成为了最普遍的材料。



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.

定制配件—定制的解决方案

几十年里，AGRU以客户定制的专业性而闻名。在这个项目中，分段式的PP管件被用于工业通风系统。PP的耐高温耐化学性质在这里也让人印象深刻。

Product range AGRUCHEM

PP-H/PP-R industrial piping systems

产品范围 AGRUCHEM

PP-H/PP-R 工业管道系统

Pipes

管道

PP-H OD 20mm – 1400mm

PP-R OD 20mm – 800mm



Extended fittings

扩展管件

SDRs of 17 and 11

OD 20mm - 315mm



Segmented fittings

分段式配件

SDRs of 17, 26, 33 and 41

OD 560mm – 1200mm



Electrofusion welding fittings

电熔焊配件

OD 20mm – 355mm



MULTI fittings

加长管件

SDRs of 17 and 11

OD 20mm – 315mm



Short-spigot fittings

短口配件

SDRs of 17 and 11

OD 20mm - 500mm

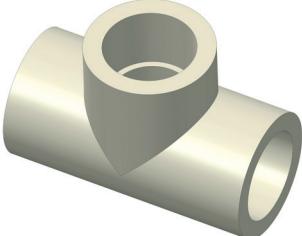


Socket welding fittings

承插焊配件

SDR of 7.4

OD 20mm – 110mm



Valves

阀门

OD 20mm – 140mm



Fluoroplastic systems Safe transport of highly aggressive media 氟塑料系统高腐蚀性介质的安全输送

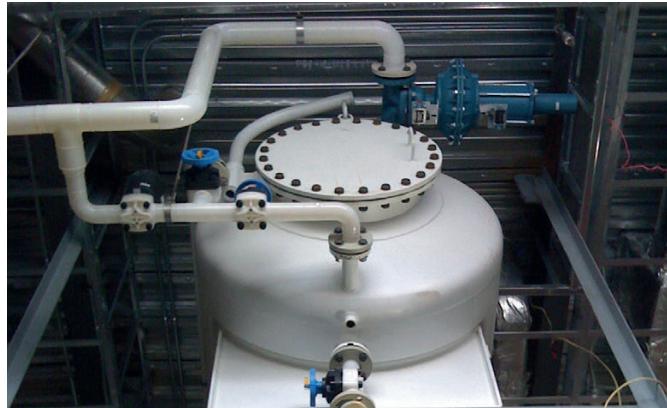


PVDF - highest product purity

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.

PVDF - 最高纯度产品

聚偏氟乙烯(PVDF)是一种无添加剂的超高纯均聚物。这使它达到生理安全以及符合超高纯应用。它同样具有高机械强度和极强的抗化学性。像ECTFE一样，PVDF同样易用易处理。它可以在-20°C至+120°C下使用。



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.

ECTFE - 更高等级

乙烯-三氟氯乙烯(ECTFE)是一种乙烯和三氟氯乙烯交替排列的热塑性共聚物。可用的工作温度-30°C至+140°C，在腐蚀性介质（如含有游离氯或98%浓硫酸）中也可使用。ECTFE管道系统是由AGRU公司生产的高抗性的管道系统。根据更强的耐化性需求，AGRU也提供FEP和PFA管道，这种管道拥有最强的耐化学性能。

Product range AGRUCHEM

ECTFE/PVDF industrial piping systems

产品范围 AGRUCHEM

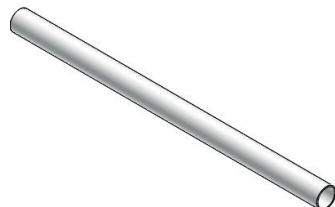
ECTFE/PVDF 工业管道系统

Pipes

管道

PVDF OD 16mm – 400mm

ECTFE OD 20mm – 200mm

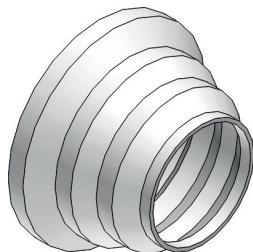


Fittings

管件

PVDF OD 16mm – 315mm

ECTFE OD 63mm – 160mm

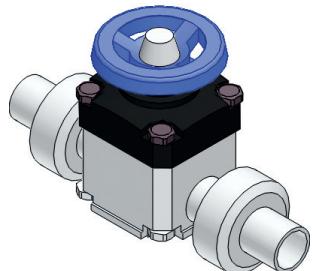


Valves

阀门

PVDF OD 20mm – 140mm

ECTFE OD 20mm – 63mm

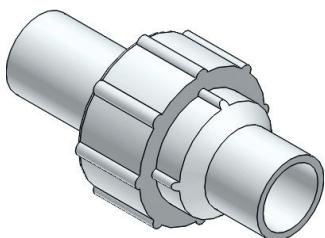


Union

由令

PVDF OD 20mm – 90mm

ECTFE OD 20mm – 63mm

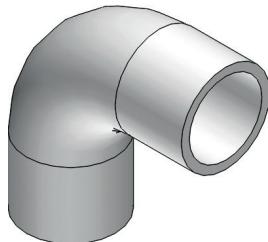


MULTI fittings

加长管件

PVDF OD 20mm – 225mm

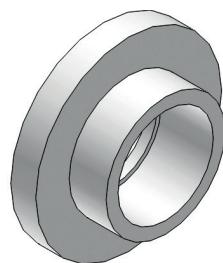
ECTFE OD 20mm – 160mm



Fittings for socket welding

承插焊管件

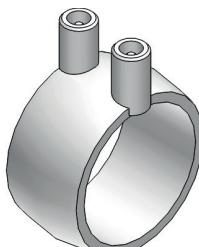
PVDF OD 20mm – 110mm



HPF coupler

HPF 平接头

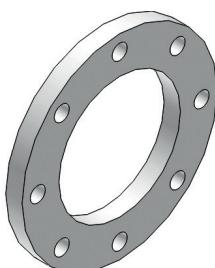
PVDF OD 20mm – 63mm



Backing ring

法兰环

OD 20mm – 630mm





Double containment piping systems for double safety double safety 双层管道系统 双重安全管道系统



Double containment piping systems

双层管道系统

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.



Poly-Flo 包含了一个由PE100-RC或PP-R制成的管道系统，它可以安全地传输危险性介质。它可以通过同步焊或者阶梯式焊接来方便的安装。介质管和保护管均可以承受较强的压力。

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.

标准的双安全壳管道系统是预制的，在垫片焊接后，可以使用对焊连接，或使用错列焊接。



Product range AGRUCHEM double containment piping systems

产品范围 AGRUCHEM 双层管道系统

Poly-Flo pipe

Poly-Flo 管道

PE 100-RC / PPR

SDR 17/11

Dim.尺寸 50/32, 90/63, 160/110

PE 100-RC / PPR

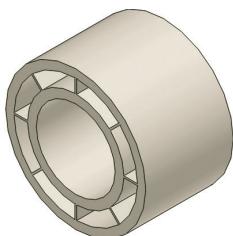
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SDR 33/17

Dim.尺寸 160/110, 225/160

SDR 17/11

Dim.尺寸 225/160



Poly-Flo fittings

Poly-Flo 管件

segmented(片段式)

PE 100-RC / PPR

SDR 17/11

Dim.尺寸 50/32, 90/63, 160/110

PE 100-RC / PPR

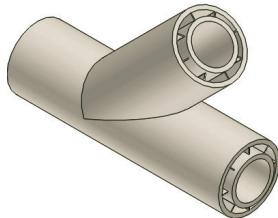
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SDR 33/17

Dim.尺寸 160/110, 225/160

SDR 17/11

Dim.尺寸 225/160



Double containment fitting

双层管件

PP/PP, PE/PE

Simultaneous welding

同步焊

from dim. 90/32 to 355/250

尺寸 从90/32 到 355/250



Poly-Flo fittings

Poly-Flo 管件

injection moulded

注塑成型

PP-R + PE 100-RC

SDR 17/11

Dim.尺寸 50/32, 90/63, 160/110



Poly-Flo measuring fitting

Poly-Flo 测量管件

turned(螺旋式)

PE 100-RC / PPR

SDR 17/11

Dim.尺寸 50/32, 90/63, 160/110

PE 100-RC / PPR

on request(可按要求)

SDR 33/17

Dim.尺寸 160/110, 225/160

SDR 17/11

Dim.尺寸 225/160



Double containment pipe fitting

双层管件

PE/PVDF, PP/PVDF

Cascade + e-socket welding

错列焊 + 电熔焊

from dim. 90/32 to 280/160

尺寸 从90/32 到 280/160





AGRUAIR Piping system for compressed air 压缩空气管道系统



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.

AGRUAIR 高效压缩空气运输

PE 100以韧性、柔韧性和断裂伸长率等材料优势而闻名，是AGRUAIR压缩空气管道的理想选择，可确保最佳的流动条件。压缩空气也总是产生冷凝，从而导致金属管道内部出现氧化或生锈。PE 100保持完全维护和无腐蚀，即使压缩机的机油也不会损坏材料。AGRUAIR管道对振动也不敏感。由于其灵活性、低重量和非常好的焊接性能，安装简单且安全。

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.

免维护管道

AGRUAIR的独特之处在于它们完全免维护。由于塑料的坚固性和灵活性、管道内壁光滑，完全没有腐蚀，系统通常在焊接后的几十年内保持密封和无沉积。塑料PE 100几乎可以满足从-40°到+60° 摄氏度的广泛温度范围内的任何要求。为了调节压缩空气的排放，AGRUAIR配备了可控塑料球阀。

AGRUAIR product range

AGRUAIR 产品范围

Pipes

管道

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 110 mm



Elbow 45°

45° 弯头

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 110 mm



Flange adaptors

法兰适配器

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 110 mm



Adaptor with metal thread

带金属螺纹的适配器

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 63 mm



E-couplers

电子耦合器

AGRUAIR PE 100 black(黑色)

OD 20 mm – OD 110 mm



Elbow 90°

90° 弯头

Transition elbows 45° and 90°

45°和90°过渡弯头

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 110 mm



Reducer concentric

同心异径

AGRUAIR PE 100 blue(蓝色)

OD 25/20 mm – OD 110/90 mm



Tees normal/reduced

三通 正常/异径

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 110 mm



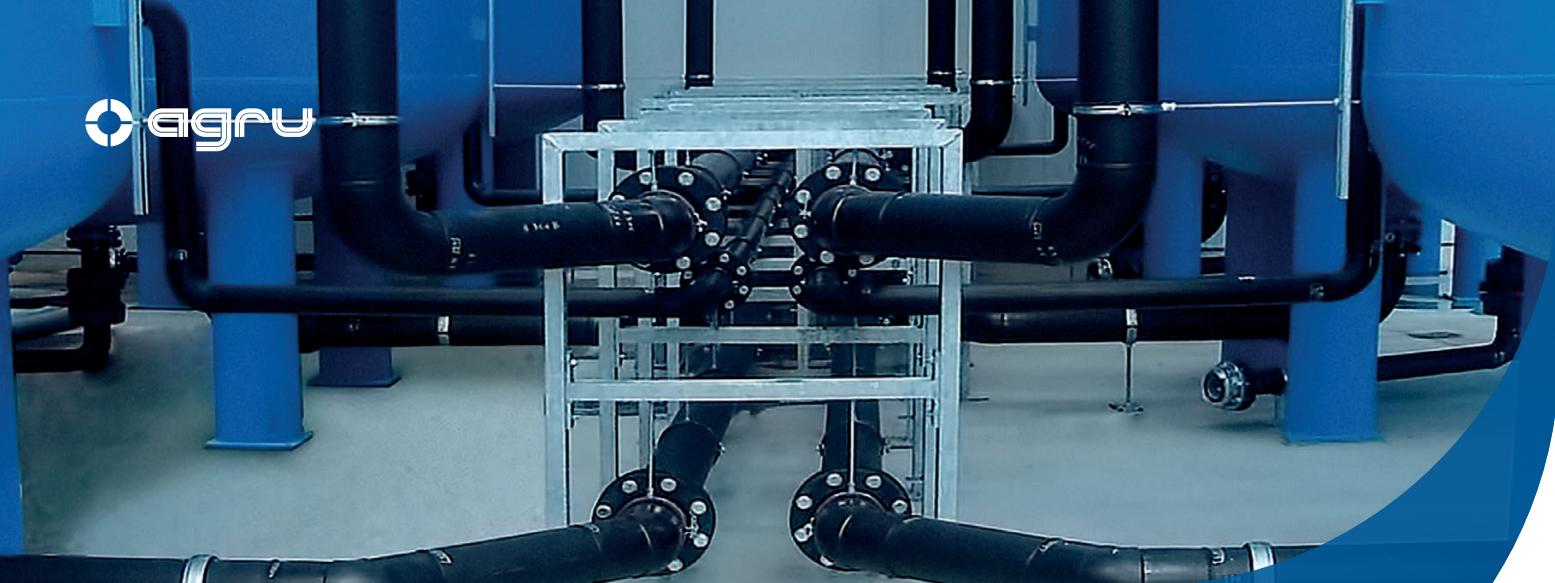
Ball valve

球阀

AGRUAIR PE 100 blue(蓝色)

OD 20 mm – OD 63 mm





Electrically conductive customised materials Safe transport of substances with a risk of explosion 定制的导电材料用于有爆炸风险介质的输送



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.

职业安全是关键

当易燃介质被倒入、排空、搅拌、混合或喷淋时，管道中的静电是一定要被避免的。如果管道是从一个有潜在爆炸风险的气氛中穿过，一个电火花就有可能引发爆炸。ESD(静电释放)塑料提供了额外的安全性，通过一种可控的方法永久消除静电。他们因此被用在有防爆需求的区域内，这些区域静电火花是需要避免的。在有潜在爆炸风险气氛的区域中同样被用到。

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.

安装方便

无论是 PPS-el 还是 PE 100-el 均可以通过对焊、承插焊或者电热丝焊接进行连接。在对焊加热元件中，该管道能够在不附加工作的情况下，在连接层之外导电。导电管道的电熔焊只允许使用绝缘PE制成的内嵌有加热丝的插头，否则将会产生低压电流。

Product range AGRUCHEM PPS-el / PE 100-el

ESD (ELECTROSTATIC DISCHARGE)

产品范围 AGRUCHEM PPS-el / PE 100-el

ESD (静电释放)

Pipes

管道

PPS-el

OD 32mm – 400mm

PE 100-el

OD 32mm – 400mm



Tee

三通

PPS-el

OD 32mm – 315mm

PE 100-el

OD 32mm – 315mm



Stub flange

法兰头

PPS-el

OD 32mm – 400mm

PE 100-el

OD 32mm – 400mm



90° bend

90° 弯头

PPS-el

OD 32mm – 315mm

PE 100-el

OD 125mm – 315mm



Reducer concentric

同心异径

PPS-el

OD 63/16mm –

315/225mm

PE 100-el

OD 63/16mm –

315/225mm



Backing ring

法兰环

PPS-el

OD 32mm – 315mm





References 应用实例

The AGRUCHEM range of industrial piping systems includes electro-socket fittings, socket welding fittings and butt welding fittings for any application.
AGRUCHEM的工业管道系统包括各种应用的电熔焊管件、
承插焊管件、对焊管件。



AGRUCHEM 90° MULTI bends are available in a variety of materials and complete the AGRU industrial piping system range.
AGRUCHEM 90° 加长弯头包括了各种材质，
这使得AGRU工业管道系统更加完善。

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.

由PE制成的管道提供多种工业应用选择。由于他们对紫外线的高抗性，他们可以在室外和室内安装。





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

AGRUCHEM Poly-Flo双层管道系统可以使用同步焊接，节约时间。



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

在许多工业应用中都需要用导电聚乙烯做的AGRUCHEM管道。



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

在海水淡化领域，PP同样非常适合应用在反渗透中。



The Plastics Experts.

艾格鲁管道科技（江苏）有限公司
江苏省常熟市碧溪街道乐成路6号

T. +86 (0) 512 80600294
F. +86 (0) 512 82111180
sales@agru.cn



艾格鲁
微信公众号

www.agru.cn
www.agru.at

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