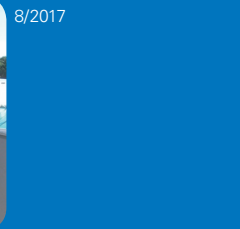
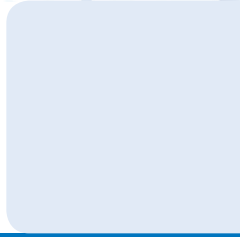
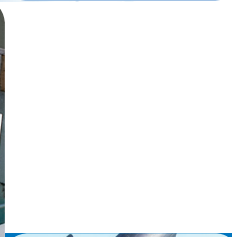
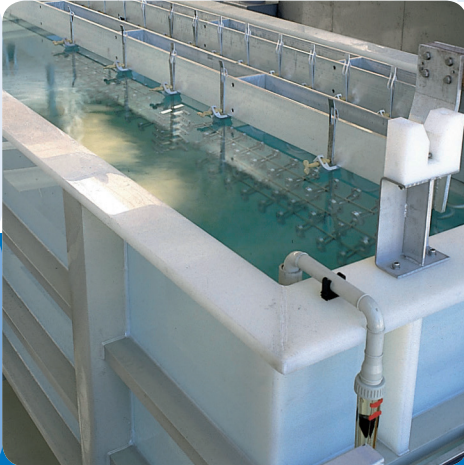
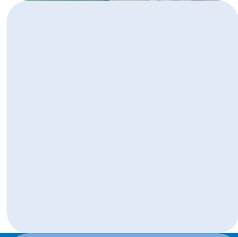
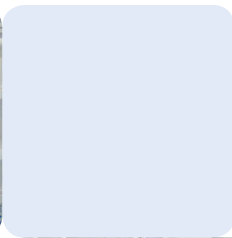
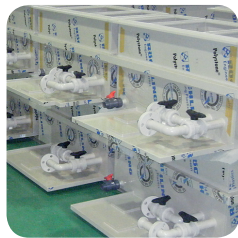




RÖCHLING

High Performance Plastics for the Chemical Processing Industry



Thermoplastics

High Performance Plastics for the Chemical Processing Industry

Thermoplastics have been integral to the chemical industry for many decades and are used in a variety of applications, including those requiring high chemical and corrosion resistance.

A short list of common applications for Röchling thermoplastic materials:

- Liquid storage tanks
- Galvanic tanks
- Steel-pickling tanks
- Water-treatment plants
- Exhaust-air cleaning systems

Thermoplastic and composite materials can be reinforced with glass fiber (FRP) and steel to give them added tensile strength and make them more easily machined into a variety of complex parts.

Products to meet your demands

Röchling Engineering Plastics has for decades offered a breadth of products with outstanding chemical resistance that can be easily processed, and that meet the current guidelines and standards for chemical tank and plant construction.

Röchling offers:

- Sheets
- Rods
- Tubes
- Welding rod
- U-shaped profiles
- Square profiles
- Custom profiles

Sizes



Sheets, Extruded

1/16" – 1-1/2" x 48" x 96"
1/16" – 1-1/2" x 48" x 120"
1/16" – 1-1/2" x 60" x 120"
Sheets up to 120" wide available upon request



Sheets, Pressed

1-1/4" – 4" x 48" x 96"
1-1/4" – 4" x 48" x 120"
1-1/4" – 4" x 96" x 240"
Sheets up to 8" thick available upon request



Rods

8mm (.31") – 300mm (13.78")



Welding Rods

1/8" (3mm)
5/32" (4mm)
3/16" (5mm) diameter

Material Description

Polystone® G (HDPE) defines dependability and versatility in a wide variety of industries

Polystone® G is a polyethylene with outstanding impact resistance and tensile strength making it the perfect choice for a wide range of applications.

Polystone® G Pipe Grade is a polyethylene with increased impact strength, UV stability, weldability to HDPE pipe and tracer elements. Typical applications include man hole covers, flanges, fittings and stub ends.

Polystone® G (HDPE) properties:

- Operating temperature up to 180°F (82°C)
- FDA and USDA complaint for use in food processing applications
- Resistant to most acids and solvents

Polystone® P (PP) takes corrosion resistance to a new level

Best known for its outstanding chemical resistance, this polypropylene is easily fabricated, welded and machined for applications such as:

- Structural tanks and linings
- Plating barrels
- Ducts and fume hoods
- Semiconductor processing equipment
- Pump and valve components
- Fire truck tanks

Polystone® P (PP) properties:

- Operating temperature up to 180°F (82°C), and up to 239°F (115°C) with heat stabilizers
- FDA and USDA accepted

Polystone® G Selection Table	Material Description	Standard Color
Natural	Standard high-density polyethylene, FDA/USDA compliant	Opaque White
Colors	Available in standard and custom colors	Assorted
Cut-Rite 51	Food preparation cutting boards, textured both sides (NSF listed)	Natural and assorted
Play-Tec	Designed for playground structures, textured both sides, U.V. stabilized	Assorted solid colors
Pipe Grade	Special grade for the HDPE pipe market, U.V. stabilized	Black

Polystone® P Selection Table	Material Description	Standard Color
Natural Homopolymer	Standard polypropylene, FDA/USDA compliant	Opaque White
Natural Copolymer	High impact strength, especially in cold temperature at low as -22°F	White
Colors	Available in Euro Gray	Gray-tan
White	Designed for the semiconductor industry, with protective masking	Bright White
Röchling Grey EHS	Operating temperature is increased up to 239°F	Grey-Tan
Flame Retardant	Manufactured from UL-94 V0 approved materials	White
Foamlite®	Extruded closed cell foamed material, textured scratch-resistant surface	Assorted

Polystone® Provides Versatility for Finishing Products

Polystone® G and Polystone® P can be machined using the same tools used for both wood and metal machining.

- Sawing with circular and band saws
- Milling
- Welding with matching Röchling welding rod
- Thermoforming

	Polystone® G (HDPE)	Polystone® P (Polypropylene)
Extrusion welding melt temperature:	395°F – 446°F	410°F – 464°F
Hot gas welding temperature:	608°F	590°F
Thermoforming temperature range:	285°F – 300°F	320°F – 350°F



Range of Products, Physical Properties and Specifications

Physical properties			Polystone®					
Property	Units	ASTM Test	G (HDPE)	G (Pipe Grade)	P (Polypropylene) Homopolymer	P (Polypropylene) Copolymer	P (Polypropylene) Röchling Grey Homopolymer	P (Polypropylene) Röchling Grey Copolymer
Density	gm/cm ³	D792	.95	.96	.91	.91	.91	.91
Tensile strength at yield 73°F	psi	D638	4000	3625	4700	3500	4700	3500
Notched IZOD impact strength	ft. lb./in.	D256	3.5	9.0	1.0	8.0	1.0	8.0
Hardness 73°F	Shore D	D785	65	66	72	69	72	69
Coefficient of linear thermal expansion	in./in.°F	D696	6 x 10 ⁻⁵	6 x 10 ⁻⁵	6 x 10 ⁻⁵	6 x 10 ⁻⁵	6 x 10 ⁻⁵	6 x 10 ⁻⁵
Continuous service temperature in air (max)	°F	–	180	180	180	180	239	230

Specifications and Approvals Polystone® G (HDPE)

ASTM	D-4976	Polyethylene plastics molding and extrusion materials
FDA	Natural Colors if requested	FDA Regulation Title 21 CFR 177.1520 Approved for direct contact with meat and poultry
NSF	Natural and colors	Cut-Rite 51 is listed to NSF Standard 51

Specifications and Approvals Polystone® P (Polypropylene)

ASTM	D-4101	Propylene plastics injection and extrusion materials
FDA	Natural Colors if requested	FDA Regulation Title 21 CFR 177.1520 Approved for direct contact with meat and poultry
UL Rating	UL-94 HB	Natural and colors
UL Rating	UL-94-V0	Polystone® P Flame Retardant is manufactured upon request
USP Class VI	Compliant	Polystone® P with USP Class VI is manufactured upon request

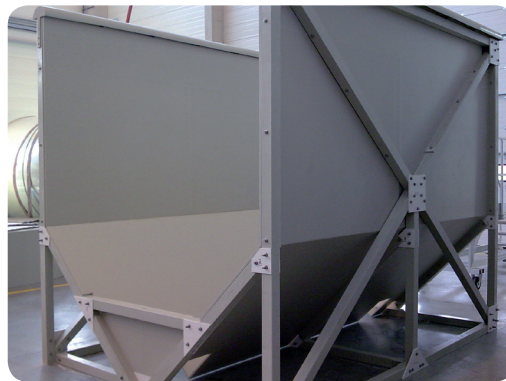
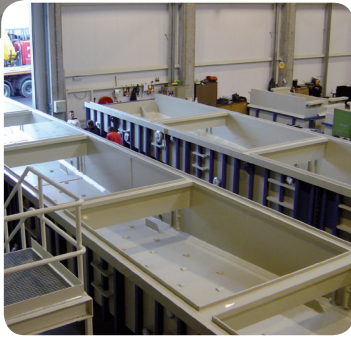
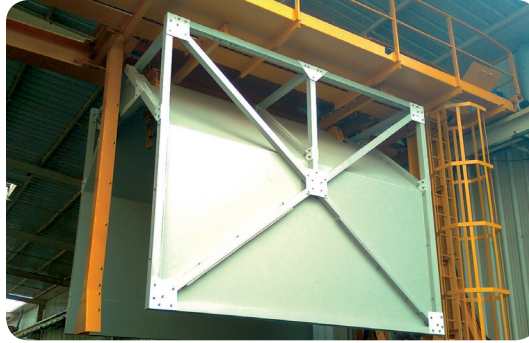
Full service for tank construction

Less weight with all of the strength: Foamlite®

Foamlite® is an innovative plastic sheet with a foam-like inner core which reduces the overall weight of the sheet by 30 percent. The closed-cell structure gives it high mechanical stability in addition to its excellent chemical resistance. Foamlite® is ideal for use in tank covers because it can be fabricated with an integrated 90 degree v-notch hinge and the materials high flexural fatigue strength allows for it to be bent up to 40,000 times without breaking.

In addition to being weldable for tank construction, Foamlite® can be drilled, sawed, cut and bolted using the same tools used for wood applications.

Foamlite® P grey
Mobile hub of a galvanic line (installed)



Foamlite® P grey
Mobile hub of a galvanic line prior to installation



Foamlite® P grey
Cover flaps over a galvanic tank

Get a better bond with Röchling welding rod

Don't compromise the integrity and look of your product by mixing and matching your sheets and welding rod. Röchling offers a full range of thermoplastic products that give you a better bond and optimal color match by using the same resin source. Ideal for tank, fume hood and wet bench construction, Röchling sheets and rods are manufactured to the highest production standards in the market, and we offer a variety of lengths and colors to meet your fabrication needs.



Welding Rod Specifications

- Standard diameters:
1/8" (3mm) round
5/32" (4mm) round
3/16" (5mm) round
Tolerance: +.005" / -.010"
- Available lengths:
30 lb spools
15 lb coils
- Color Choices:
Natural
White
Röchling Grey (heat stabilized)
Euro grey
Black



	Polystone® G HD black	Polystone® P homopolymer grey
		Size
● Round	RS/3	1/8" (3mm)
	RS/4	5/32" (4mm)
	RS/5	3/16" (5mm)

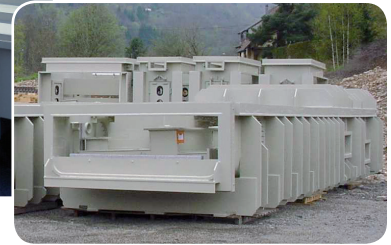
Areas of application

Steel pickling Plants

Over the last two decades, polypropylenes have become a more common solution for building steel pickling tanks, replacing the more traditional rubberized or brick-lined steel tanks. Röchling offers polypropylenes and welding rod that are more chemically resistant than these traditional materials, and they are easily welded for a long-lasting solution.



Polystone® P homopolymer grey
Steel pickling plant with a total length of 479 ft



Polystone® P homopolymer grey
Tanks for a steel pickling plant

Galvanic Plants

In the high-temperature and chemically corrosive atmosphere of a galvanizing tank, it is imperative that you use highly chemical resistant materials for tank construction. Röchling offers products specifically designed for this application, and your Röchling representative can work with you to choose the best material for the chemical and temperature conditions needed for this process.



Polystone® P homopolymer grey
Galvanic plant for the treatment of aluminum parts



Polystone® P homopolymer grey
Tank for a copper-coating plant

Water-treatment Plants

Purity is essential in the process of creating drinking water and Röchling offers a breadth of product solutions for water treatment facilities. From well construction and desalination plants to chemical water treatment and sewage purification tanks, Röchling has the right material solution with exceptional purity standards and the approvals needed to back up our product purity.



Polystone® P homopolymer grey
Water purification tower of a beer brewery

Liquid Storage Tanks

Resistance to chemical and thermal corrosion, and external elements like UV exposure are all influencing factors in the durability of chemical tanks. Röchling offers a wide range of products with the right specifications for most chemical tank applications. Our polyethylene products are ideal for round tank construction where the plastic must be heated and bent. It is also used for covers, bases and inside liners for composite tanks. Röchling polypropylene sheets are suited for square tank construction, and we offer welding rod to match the majority of our products to give you the best bond possible.

Adding carbon black to Polyethylene and Polypropylene increase the UV resistance of the material, further protecting storage tanks that will be outside and exposed to the elements.



Polystone® G black
Storage tanks for hydrochloric acid

Exhaust-air Cleaning Plants

The unique corrosion-resistant properties of some plastics make them an effective solution in exhaust air and air purifying applications. Contact your local Röchling representative for more information about which products to use in these highly-corrosive atmospheres.



Polystone® P homopolymer grey
Exhaust-air treatment for odor removal



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The information listed herein is stated to the best of our knowledge and is intended to provide a general guideline for Polystone® and its uses. The values given are based on laboratory testing backed with global industry experience. All properties in this brochure have performed equal or better in laboratory testing. However, the data should not be considered as guaranteed specific properties. Suggested applications are provided for information only and are not specific recommendations.

