

**Xirtec<sup>®</sup>140**  
PVC PROCESS PIPING SYSTEM

**CORZAN<sup>®</sup>**  
CPVC PROCESS PIPING SYSTEM



INDUSTRIAL SYSTEMS



## VINYL PROCESS PIPING SYSTEMS

Complete systems of pipe, valves and fittings designed, manufactured and backed by one company.

  
**IPEX**  
Committed to Excellence

We build tough products for tough environments<sup>®</sup>

# The IPEX System Advantage

Introducing IPEX vinyl process piping systems.

A complete line of pipe, fittings, flanges, strainers and valves to meet all your process system requirements.

IPEX developed the Xirtec®140 (PVC) and Corzan® (CPVC) systems to meet industry demands for a complete Pipe, Valves and Fittings (PVF) package that is designed, produced and backed by a single manufacturer. These systems are engineered and manufactured to IPEX's strict quality, performance and dimensional standards, and therefore eliminate the problems inherent in purchasing and installing piping system components manufactured by several different companies.

IPEX high-performance vinyl systems are designed to meet the temperature, pressure and size requirements of piping systems used in chemical processes and other industrial applications.

They feature outstanding resistance to photodegradation, creep stress and immunity to oxidation, and are

exceptionally suited for use with a wide range of acids, alcohols, salts and halogens. The perfect extended service, low maintenance alternative to common and exotic metal systems.



Xirtec140 & Corzan — the perfect extended service, low maintenance alternative to common and exotic metal systems.

Xirtec140 pipe and fittings and Corzan pipe are available in Schedule 40 and 80, IPS. Corzan fittings are available in Schedule 80. All pipe and fittings are also available in cast iron sizes.

## Designed, Manufactured and Backed by IPEX

For more than 50 years, IPEX has been manufacturing thermoplastic pipe, valves and fittings — complete system solutions to meet the challenges of industry and construction. We formulate many of our own compounds, maintain strict quality control, and market and distribute our products throughout North America. IPEX manufactures systems from a broad range of materials including PVC, CPVC, PP, ABS, PVDF, PEX, PE and composite materials. Our total systems approach means you can be confident that all the material you need is designed, manufactured and backed by the same company. One source to stand behind you and your complete system.

# Process Piping Applications

IPEX supplies PVC and CPVC systems for a broad range of industrial applications.

- Plant chemical distribution lines
- Water & wastewater
- Acid systems for refineries, pickling lines and plating shops
- Chlorine injection, chlorine dioxide, and chloralkali plant piping
- Steel wire plants
- Battery manufacturing
- Bleach lines in textile and paper mills
- Alum and caustic handling systems
- Circuit board manufacturing
- Semiconductor
- Pharmaceutical
- Cooling water and cooling tower systems
- Tailing and slurry lines
- Washwater recovery systems
- Plant water supply
- Brine and seawater systems
- Fish farming
- Waterworks
- Aquariums and swimming pools
- Irrigation systems in golf courses, greenhouses, etc.



## Xirtec<sup>140</sup> PVC (Polyvinyl Chloride) Systems

PVC is the most frequently specified of all thermoplastic piping materials and has been used successfully for over 60 years. PVC is characterized by distinctive physical properties, and is resistant to corrosion and chemical attack by acids, alkalies, salt solutions and many other chemicals. Of the various types and grades of PVC used in plastic piping, Xirtec140 uses Type 1, Grade 1 PVC (Cell Classification 12454) conforming to ASTM D1784. The maximum service temperature for Xirtec140 is 140°F in pressure applications with occasional exposure to boiling water (212°F) in drainage applications. With a design stress of 2,000 psi @ 73°F, PVC used in Xirtec has one of the highest long-term strengths of all major thermoplastic material used for piping. Xirtec piping is joined by solvent cementing, threading, flanging, grooving, gasketed joints, or mechanical joints.

## CORZAN<sup>®</sup> CPVC (Chlorinated PVC) Systems

CPVC (Cell Classification 24448 for 1/2" to 8" and 23447 for 10" to 16") conforming to ASTM D1784 has physical properties at 73°F similar to those of PVC; its chemical resistance is similar to or generally better than that of PVC. With a design stress of 2,000 psi and maximum service temperature of 200°F under pressure with occasional exposure to boiling water (212°F) in drainage applications. Corzan has proved to be an excellent piping system for hot corrosive liquids, hot and cold water distribution and similar applications above the temperature range of Xirtec140. Corzan piping is joined by solvent cementing, threading, flanging or grooved joints.

# The IPEX Advantage

IPEX systems offer the unique combination of light weight, flexibility, durability and exceptional corrosion resistance.



## Lower Installation Costs, Easy Handling

In addition to a lower material cost, Xirtec & Corzan pipe can significantly reduce labor and transportation costs on a typical installation. The reason? They are lightweight, easily handled, stored, cut and joined. And, heavy equipment used to install metallic and other piping systems are not required, thereby reducing project costs.



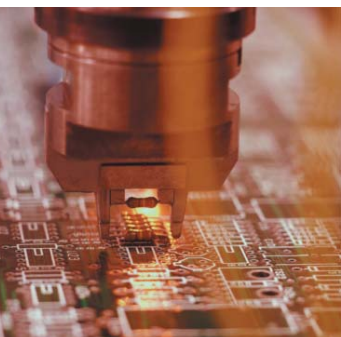
## Extended Life

Xirtec PVC and Corzan CPVC are fundamentally ageless and impervious to normal weather conditions. These piping components in uninterrupted service and in a variety of demanding industrial applications have operated successfully for over 40 years. Once properly selected for the application and correctly installed, IPEX vinyl systems provide years of maintenance-free service. They will not rust, pit, scale or corrode on either interior or exterior surfaces. Unlike other types of piping, Xirtec and Corzan systems are not adversely affected by environmental conditions.



## Superior Underground Performance

Xirtec and Corzan CPVC are immune to damage from naturally corrosive soil conditions as well as electrochemical and galvanic corrosion. This is particularly advantageous in underground installations where galvanic reaction often causes damage to metal piping products. Non-corroding properties ensure improved flow, lower maintenance costs and longer performance life.



## Exceptional Chemical Resistance

The IPEX vinyl systems, including pipe, valves and fittings, provide outstanding resistance to a wide range of chemicals such as most acids, alcohols, alkalis, salt solutions, halogens and more. However, chemical resistance is a function of concentration, pressure and temperature. For specific applications, see the IPEX Chemical Resistance Guide.



## Improved Flow

Xirtec and Corzan have a substantially lower Roughness Factor than metal and other materials, and since they do not rust, pit, scale or corrode, the interior walls remain smooth in virtually any service. This high carrying capacity may permit the use of flatter grades or smaller diameter pipe.



## Potable Water Approved

Xirtec140 polyvinyl chloride (PVC) and Corzan chlorinated polyvinyl chloride (CPVC) are suitable for use with potable water as listed with the National Sanitation Foundation (NSF) and CSA International. Both systems meet or exceed all applicable standards.

## Exceptional Temperature Range

IPEX vinyl systems are designed to meet a broad range of service temperatures. Xirtec has a recommended maximum service temperature of 140°F in pressure, with occasional exposure to boiling water (212°F) in drainage; Corzan has a maximum service temperature of 200°F.

## Lower Thermal Conductivity

With a low thermal conductivity factor, IPEX vinyl systems have less heat loss or gain, thus sustaining service temperature more efficiently than metal piping. As a result, pipe insulation is often not required.

## Environmentally Responsible

With energy conservation a prime concern, you can rely on the fact that IPEX's manufacturing process for Xirtec and Corzan piping materials requires less than half the energy needed to produce the equivalent size of carbon steel or steel alloy materials.

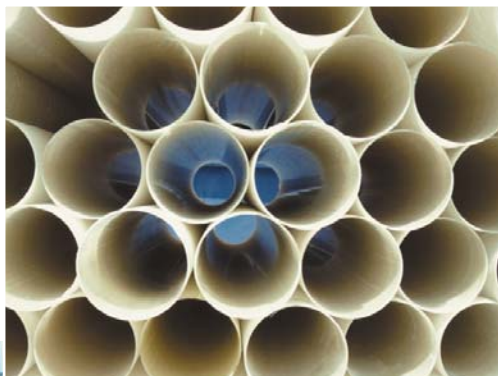
## Unmatched Reliability

At IPEX, we take pride in manufacturing the widest range of thermoplastic piping systems available, supplemented by experienced personnel in design, drafting, mold building, quality control, distribution and marketing. All piping systems are produced to the strictest internal quality control specifications and subjected to independent regulatory standards.

# Pipe

IPEX features one of the most comprehensive ranges of thermoplastic pipe for today's industrial applications. Available in Schedule 40 and 80 with sizes ranging from 1/4" to 24", as well as SDR in sizes ranging from 1/2" to 48", IPEX vinyl pressure pipe exceeds the most stringent and demanding standards set by key standards organizations including ASTM, AWWA, CSA and NSF, to name a few.

But *unlike* almost all other pipe manufacturers in the world, IPEX's commitment to quality doesn't stop at the end of the manufacturing process or at our pipe yard. Xirtec and Corzan pipe are part of complete PVF systems. Dimensional matching, compatibility of compounds, chemical, physical and thermal properties and system accountability make IPEX pipe a key component of the high-performance Xirtec and Corzan systems.



## PVC

Schedule 40 from 1/2" to 24";  
Schedule 80 from 1/4" to 24" and  
SDR (standard dimensional ratio) from 1/2" to 48"

## CPVC

Schedule 40 and 80, 1/2" to 16"

## Xirtec<sup>140</sup>

All Xirtec<sup>140</sup> PVC Schedule 40 and 80 pipe shall meet ASTM D1785 and shall be third party certified to CSA B137.3 or NSF 14.

## CORZAN<sup>®</sup>

All Corzan CPVC Schedule 40 and 80 pipe shall meet ASTM F441.



See Volume I:  
Vinyl Process Piping  
Systems for more details.

Diameter (in.)	O.D. (in.)	IPEX SCHEDULE 40 PVC/CPVC			IPEX SCHEDULE 80 PVC/CPVC		
		Wall Thickness (in.)	I.D. (in.)	*Max. Pressure 73°F (psi)	Wall Thickness (in.)	I.D. (in.)	*Max. Pressure 73°F (psi)
1/4	.540	—	—	—	.119	.302	1,130
3/8	.675	—	—	—	.126	.423	920
1/2	.840	.109	.602	600	.147	.526	850
3/4	1.050	.113	.804	480	.154	.722	690
1	1.315	.133	1.029	450	.179	.936	630
1-1/4	1.660	.141	1.360	370	.191	1.255	520
1-1/2	1.900	.145	1.590	330	.200	1.476	470
2	2.375	.154	2.047	280	.218	1.913	400
2-1/2	2.875	.203	2.445	300	.276	2.290	420
3	3.500	.216	3.042	260	.300	2.864	370
4	4.500	.237	3.998	220	.337	3.786	320
6	6.625	.280	6.031	180	.432	5.709	280
8	8.625	.322	7.941	160	.500	7.565	250
10	10.750	.365	9.976	140	.593	9.493	230
12	12.750	.406	11.888	130	.687	11.294	230
14	14.000	.438	13.072	130	.750	12.412	220
16	16.000	.500	14.936	130	.843	14.224	220
18	18.000	.562	16.809	130	.937	16.014	220
20	20.000	.593	18.743	120	1.031	17.814	220
24	24.000	.687	22.544	120	1.218	21.418	210

\* Pipe pressure ratings must be devalued for higher temperatures.

# Thermoplastic Valves

IPEX offers one of the most comprehensive ranges of high quality, high performance thermoplastic valves and actuation products available today. With more than 50 years of design and manufacturing experience, our lightweight, long life, maintenance free valves will save you time and money. Our high-tech automated manufacturing and testing facility ensures unparalleled reliability for each and every valve.

IPEX quality engineered products include many unique characteristics ranging from important safety features, to simple ergonomic and aesthetic benefits. Material options such as PVC, CPVC, PP, PVDF, and ABS make our corrosion resistant valves ideal for use in a wide variety of applications. Quarter turn pneumatic and electric actuation, pneumatically actuated diaphragm valves, and many options and accessories allow for fully automated control. Whether a valve is required for isolation, diversion, control, or throttling, IPEX has a solution to meet your needs.



IPEX thermoplastic valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards. Our network of manufacturing and customer service facilities across North America ensures fast, reliable service, and expert technical support.

## What type of valve should I use?



	Ball Valves	Butterfly Valves	Diaphragm Valves	Check & Vent Valves	Specialty Valves
On/Off Service	✓	✓			
High Capacity	✓	✓			
Throttling	✓*	✓	✓		
Quick & Frequent Cycling	✓				✓
Slurries/Dirty Fluids		✓	✓		
Filtering					✓
Back Flow Prevention				✓	
Air & Gas Release				✓	
Electro-Mechanical Control					✓
Actuation	✓	✓	✓		

\* VKR only

# Fittings

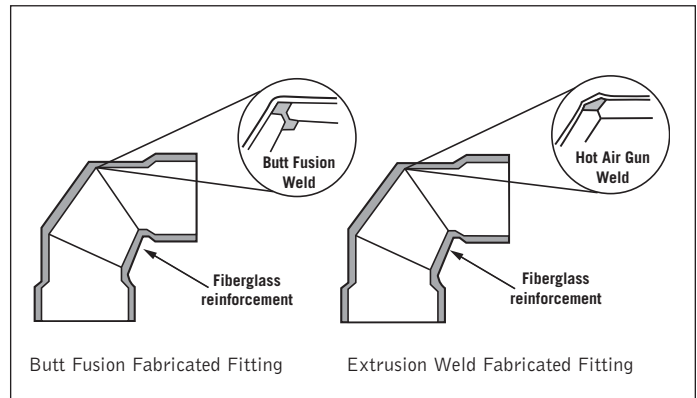
## Injection Molded Fittings

Injection molded Schedule 40/80 fittings range from 1/4" through 12" for various pressure applications. Molded fittings are usually preferred by engineers, contractors and end users because they are seamless (better flow), offer a tighter radius (requires less space) and are dimensionally identical (easier installation). In addition, molded fittings are cosmetically better than fabricated fittings, which may be an important consideration for exposed pipelines (e.g. aquariums, water works, etc.). Constant advances in injection molding technology has allowed manufacturers to increase their range of molded fittings. However, very few manufacturers in the world are currently capable of molding both Sch 40 and 80 PVC and CPVC fittings in 10" and 12" sizes. The availability through IPEX of such fittings clearly makes our molded fitting line one of the most complete and technologically advanced line in the industry.

IPEX Xirtec and Corzan CPVC injection molded fittings are manufactured in accordance with various ASTM standards and are certified by NSF and conform to CSA B137.3.

## Fabricated Fittings

Thanks to the standard FRP overwrap, IPEX fabricated fittings are also high integrity products designed and engineered to meet the same demanding process pipe requirements of our molded fittings. Fittings in large pipe sizes (10" to 24") are made from segments of Xirtec (PVC) or Corzan (CPVC) pipe welded together or butt fused before being reinforced with fiberglass. Custom configurations or standard designs such as tees and elbows are manufactured by these techniques. These fittings, together with IPEX thermoplastic pipe, valves and molded fittings form the complete and unified IPEX vinyl systems.



**Note:** Other fabrication methods may be used depending on application and service conditions.



## Xirtec<sup>140</sup> Schedule 40/80 Industrial Fittings

Xirtec140 Schedule 40 fittings shall conform to ASTM D2466, Xirtec140 Schedule 80 socket fittings to ASTM D2467 and ASTM D2464 for threaded Xirtec140 Schedule 80 fittings.

All fabricated Xirtec PVC fittings shall be manufactured with Fiberglass Reinforced Plastic (FRP). Xirtec140 PVC fittings shall be molded or fabricated from PVC (Polyvinyl Chloride) compatible with the Xirtec140 pipe material.

## CORZAN<sup>®</sup> Schedule 80 Corzan Industrial Fittings

IPEX Schedule 80 socket fittings shall conform to ASTM F439 and Schedule 80 threaded fittings to ASTM F437.

All IPEX fabricated CPVC fittings shall be manufactured with Fiberglass Reinforced Plastic (FRP). IPEX CPVC fittings shall be molded or fabricated from Corzan CPVC (Chlorinated Polyvinyl Chloride) compatible with Corzan pipe material.

### PVC

Schedule 40 and 80  
(1/4" to 12" molded; 10" to 24" fabricated)

### CPVC

Schedule 80  
(1/4" to 12" molded; 10" to 16" fabricated)



## SALES AND CUSTOMER SERVICE

Canadian Customers call  
**Toll free: (866) 473-9462**  
**www.ipexinc.com**

Technical Support  
**Toll free: (800) 490-0077**

### About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- PVC, CPVC, PP, ABS, PEX, FR-PVDF and PE pipe and fittings (1/4" to 48")
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- PE Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems

Products manufactured by IPEX Inc. and distributed in the United States by IPEX USA LLC.

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Corzan® is a registered trademark of Noveon IP Holdings Corp.

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A policy of ongoing product improvement is maintained. This may result in modifications of features and/or specifications without notice.

