PIPING SYSTEMS FOR WATER & WASTEWATER TREATMENT APPLICATIONS

WATER & WASTEWATER TREATMENT SOLUTIONS

- Process Piping
- Double Containment Piping
- Ventilation Ductwork
- Valves, Automation and Instrumentation
- Electrical Systems

IPEX
by aliaxis

We build tough products for tough environments®

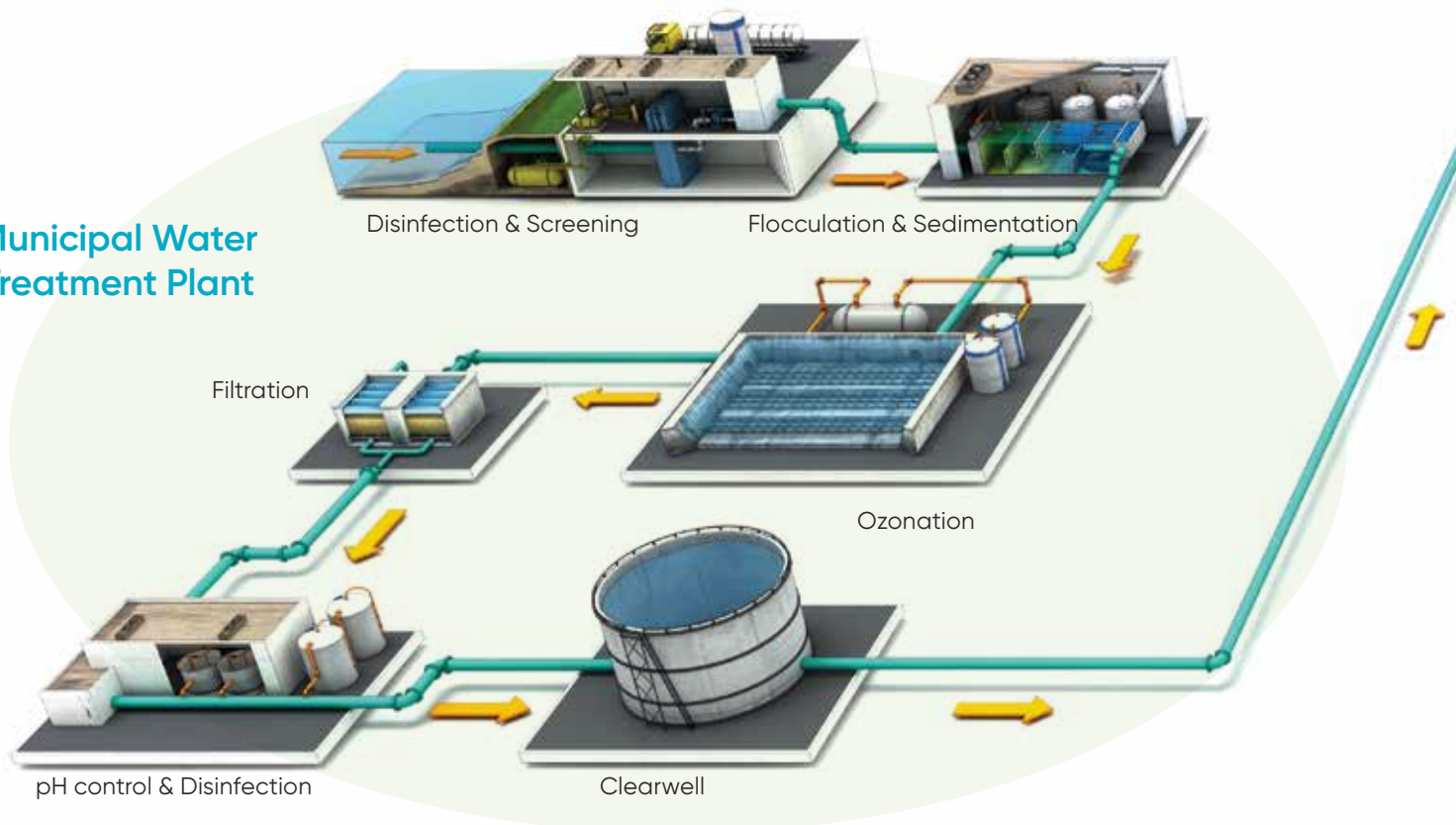
IPEX Integrated Solutions for Water & Wastewater Treatment Plants

As one of the world's leading suppliers of industrial piping products; IPEX offers a comprehensive range of integrated solutions to meet the needs of water and wastewater facilities.

Superior to the competition, the IPEX system consisting of Pipe, Valves, and Fittings (PVF) ensures uniform performance throughout treatment facilities.

- Corrosion resistant properties ensure long-term performance coupled with low maintenance costs
- Lightweight thermoplastics are cost effective and easy to install
- Ease of installation for refurbishments and repair of systems makes IPEX the supplier of choice amongst facilities maintenance personnel
- IPEX products are available through an extensive network of local distributors
- Local sales representation provides support where and when you need it
- Onsite training, prior to installation, ensures systems are installed without issue
- Responsive product support is provided by our team of applications engineers, technical sales representatives, material scientists and chemists
- Strong resistance to UV degradation
- IPEX offers solutions to easily accommodate Xirtec® expansion and contraction in your system
- IPEX Schedule 40 and Schedule 80 CPVC pipe are manufactured using Corzan® CPVC compounds which are specially formulated for the chemical processing industry
- Xirtec® CPVC made with Corzan® CPVC is suitable for the Low Calcium, Magnesium, Silicon, Nickel, Lead, and Tin requirements of membrane cells
- Xirtec® CPVC made with Corzan® CPVC is an excellent choice for Liner Material in Dual Laminate Construction. Providing consistent chemical resistance at elevated temperatures
- Xirtec® CPVC pipe can be welded to meet special fabrication requirements of the industry

Municipal Water Treatment Plant



CORROSIVE & HIGH HUMIDITY VENTILATION DUCTWORK

IPEX's PVC and CPVC Ventilation ductwork are ideally suited for both high humidity and corrosive applications in Water and Wastewater Treatment Plants. These ducts can be used as a cost effective alternative to Stainless Steel.

Some typical applications include:

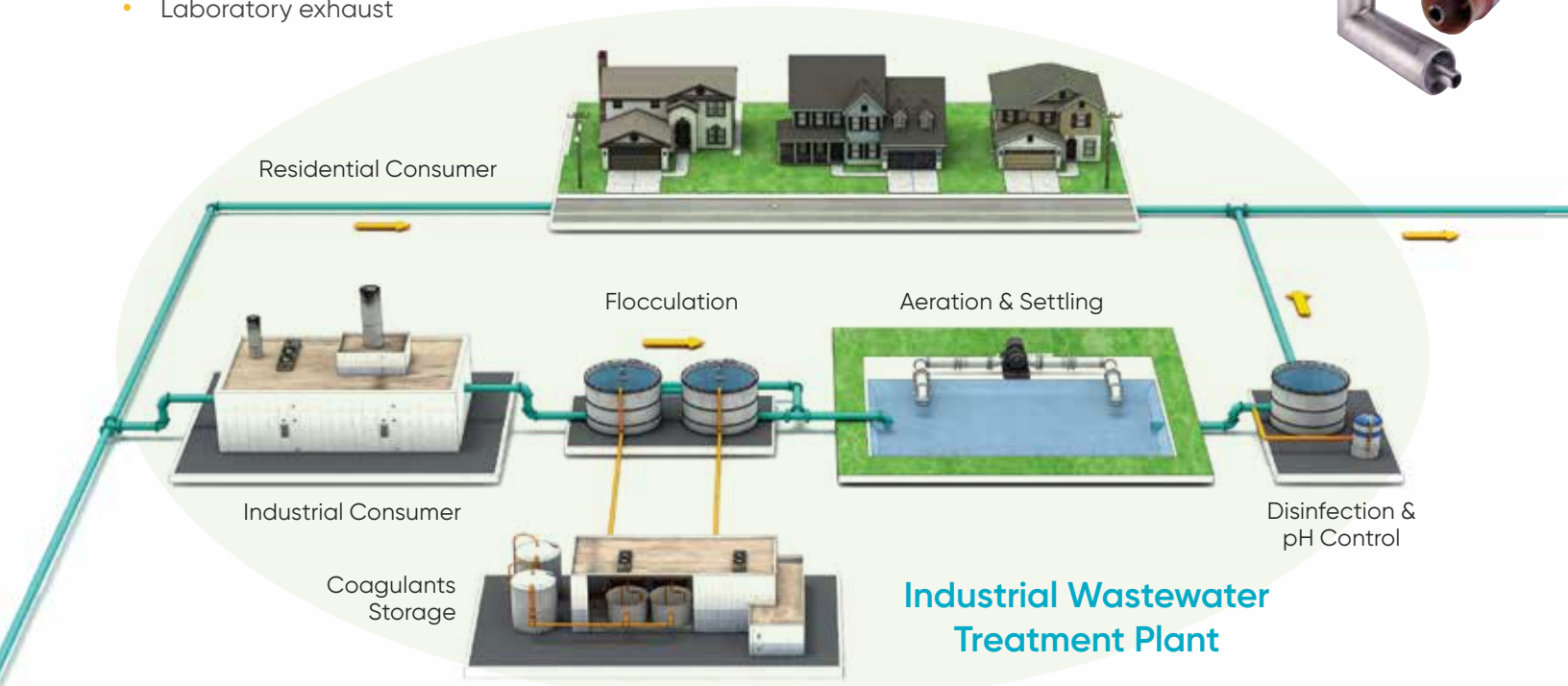
- Headwork building ventilation
- Flocculation and sedimentation ventilation
- Laboratory exhaust

EMERGENCY FUEL SUPPLY

CustomGuard® Centra-Guard™

CustomGuard® double containment piping systems are the ideal solution for the conveyance of petroleum products. Our systems satisfy the federal requirement 40 CFR 280 for underground storage tanks*. This regulation requires all underground storage tanks and the associated underground piping to be double contained. Installing a double containment system will help to minimize down-time, mitigate risks and reduce replacement and maintenance costs.

* Please check with your local regional authority for specific requirements



Industrial Wastewater Treatment Plant

AERATION & CO_2 INJECTION

Xirtec® PVC Xirtec® CPVC Duraplus™

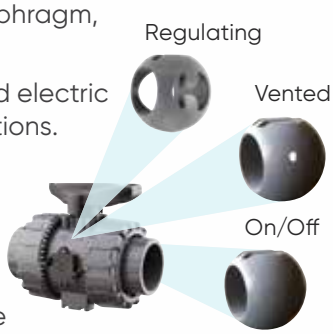
Throughout North America, our highly engineered products are widely used within the aeration and CO_2 injection process. Suitable products include Xirtec® PVC, Xirtec® CPVC (warmer climate), and Duraplus™ Industrial ABS (colder climates).

- Xirtec PVC & Xirtec CPVC offer an economical alternative to traditional materials used in the aeration and CO_2 injection piping process.
- Duraplus™ Industrial ABS offers additional impact strength and ductility even in cold weather environments.

VALVES, ACTUATORS & INSTRUMENTATION

IPEX offers one of the most comprehensive ranges of high quality, high performance thermoplastic valves, actuators and instrumentation available today. Whether you require a valve for isolation, an actuator for control, or instrumentation to measure, IPEX has a solution to meet your needs.

- Valve types include ball, butterfly, diaphragm, check, and specialty.
- Actuator types include pneumatic and electric for use in indoor and outdoor applications.
- Instrumentation includes monitors for Flow, Batch, Conductivity and PH.
- Material options such as PVC, CPVC, PP, PVDF, and ABS make our corrosion-resistant valves ideal for use in a wide variety of WTP and WWTP applications.



WATER, SLUDGE & CHEMICAL DISTRIBUTION

Xirtec® PVC Xirtec® CPVC Duraplus™ enpure™

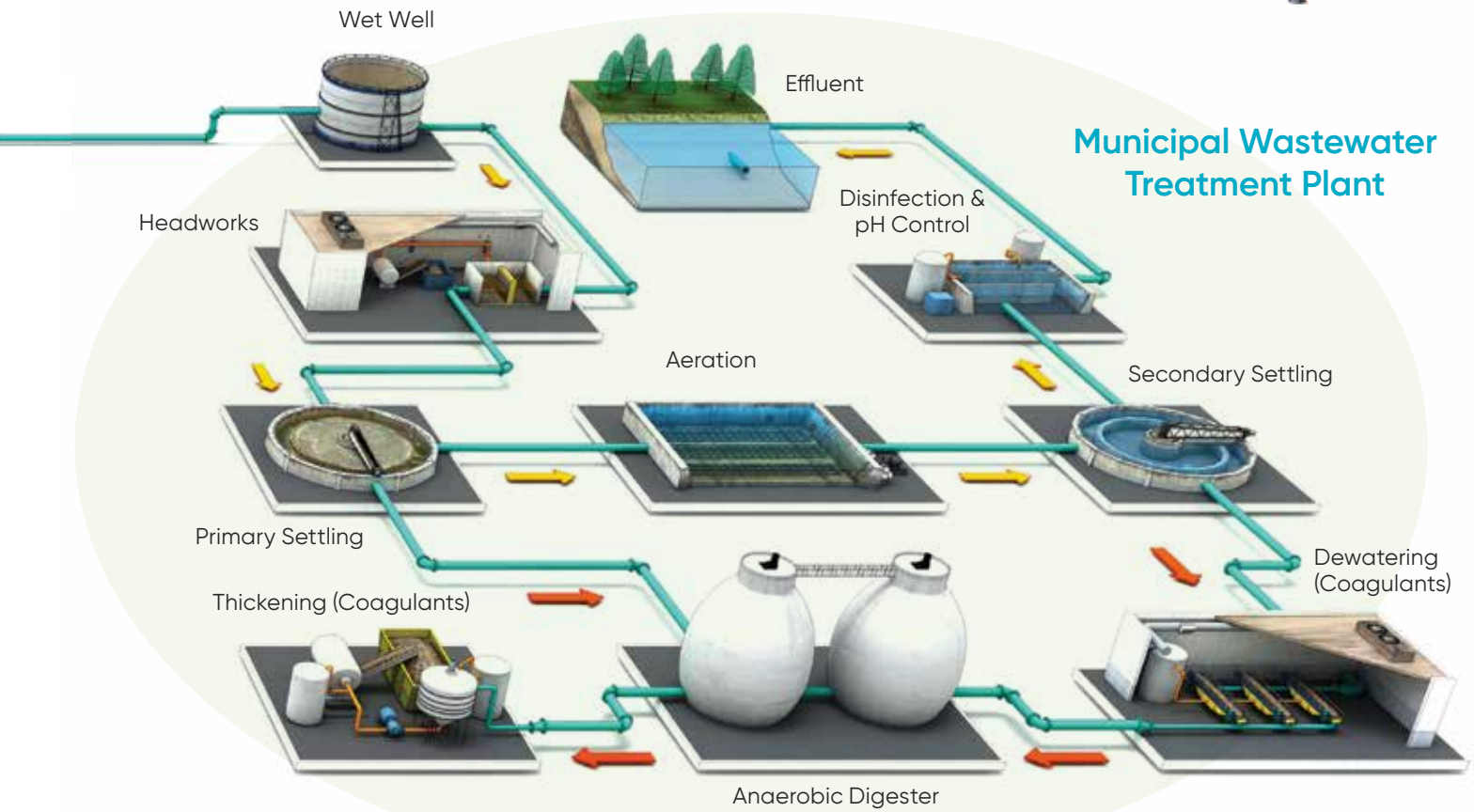
Our superior plastic piping systems offer resistance to a broad spectrum of chemicals. Our products have been successfully used to transport:

- Coagulants, flocculants and precipitants
- pH control
- Disinfectants and oxidants
- Water (raw, potable, RO, DI)
- Sludge

CHEMICAL DISTRIBUTION ADDED PROTECTION

Guardian™ CustomGuard® Centra-Guard™

Double Containment piping has an inner and an outer barrier with an interstitial space that is monitored for leaks. Almost all of the chemicals used in treatment plants are classified by the EPA as hazardous and should be double contained.



TREATED EFFLUENT DISCHARGE

Xirtec® PVC IPEX CENTURION®

IPEX PVC (up to 60" diameter) is the ideal solution for transporting treated water from the WWTP to the appropriate discharge point.

ELECTRICAL & AUTOMATION SYSTEMS

Scepter® Scepter® JBox™ Sceptalight™

Electrical and automation systems are subjected to harsh corrosive and humid environments. IPEX offers a wide range of lighting, conduit, fittings and junction boxes made from industrial grade PVC.

Common Chemicals in Water & Wastewater Treatment Plants

Temperature are in Fahrenheit
Swelling / Weight loss / Elongation at break

$R^{MAX\ RATED\ TEMP}$ – Resistant
< 3% / < 0.5% / No Change

C – Limited Resistance
< 8% / < 5% / decreased by < 50%

N – Not Resistant
> 8% / > 5% / decreased by > 50%

A – Case by Case

	Chemical	Formula	Concentration	PVC	CPVC	ABS	PP-n	EPDM	FPM†	PTFE
Coagulants, Flocculants & Precipitants	**Aluminum Sulfate (Alum)**	$Al_2(SO_4)\cdot 18H_2O$	Saturated	R^{140}	R^{140}	R^{160}	R^{104}	R^{140}	R^{140}	R^{248}
	Aluminum Chloride	$AlCl_3$	Saturated	R^{140}	R^{140}	R^{160}	R^{104}	R^{140}	R^{176}	R^{248}
	Calcium Hydroxide (Lime)	$Ca(OH)_2$	Aqueous	R^{140}	R^{104}	R^{68}	R^{104}	R^{176}	R^{176}	R^{248}
	Ferric Chloride	$FeCl_3$	Saturated	R^{140}	R^{176}	R^{104}	R^{104}	R^{176}	R^{176}	R^{248}
	Ferric Sulfate	$Fe_2(SO_4)_3$	Saturated	R^{140}	R^{140}	R^{68}	R^{104}	R^{104}	R^{176}	R^{248}
	Ferrous Sulfate (Copperas)	FeSO4·7H2O	Saturated	R^{140}	R^{140}	R^{140}	R^{104}	R^{176}	R^{176}	R^{248}
	Polymer (PVC is typically used in this application)			A	A	A	A	A	A	A
	Sodium Aluminate	$Na_2Al_2O_4$	Saturated	R^{140}	R^{200}	R^{180}	R^{70}	R^{140}	R^{140}	R^{350}
pH Control	**Calcium Carbonate**	$CaCO_3$	Aqueous	R^{140}	R^{176}	R^{104}	R^{104}	R^{104}	R^{104}	R^{248}
	Calcium Oxide	CaO	Saturated	R^{140}	R^{176}	R^{140}	R^{104}	R^{176}	R^{176}	R^{350}
	Carbon Dioxide	CO_2	100%	R^{140}	R^{200}	R^{140}	R^{104}	R^{176}	R^{176}	R^{248}
	Magnesium Hydroxide	$Mg(OH)_2$	Saturated	R^{140}	R^{104}	R^{140}	R^{104}	R^{176}	R^{212}	R^{248}
	Magnesium Oxide	MgO	Saturated	R^{140}	R^{200}	R^{160}	R^{104}	R^{70}	R^{70}	R^{70}
	Sodium Bicarbonate	$NaHCO_3$	Saturated	R^{140}	R^{140}	R^{140}	R^{104}	R^{176}	R^{212}	R^{248}
	Sodium Carbonate (Soda Ash)	$NaCO_3$	Aqueous	R^{140}	R^{176}	R^{140}	R^{104}	R^{176}	R^{176}	R^{248}
	Sodium Hydroxide (Caustic Soda)	NaOH	<50%	R^{104}	A	N	R^{104}	R^{140}	N	R^{248}
			>50%	R^{104}	A	N	C^{104}	R^{140}	N	R^{248}
	Carbonic Acid	H_2CO_3	Saturated	R^{104}	R^{176}	R^{104}	R^{104}	R^{176}	R^{176}	R^{248}
	Hydrochloric Acid	HCl	<25%	R^{140}	R^{176}	R^{68}	R^{104}	R^{68}	R^{176}	R^{248}
			<30%	R^{140}	R^{176}	N	R^{104}	N	R^{140}	R^{248}
			<37%	R^{140}	R^{140}	N	R^{104}	N	R^{104}	R^{248}
			>37%	R^{104}	R^{68}	N	N	N	R^{68}	R^{248}
	Sulfuric Acid *Double Containment piping is recommended when the fluid temperature exceeds the maximum rated temperature.	H_2SO_4	<50%	R^{140}	R^{176}	R^{68}	C^{104}	C^{68}	R^{212}	R^{248}
			<70%	C^{140}	R^{176}	N	C^{104}	N	R^{176}	R^{212}
			<78%*	C^{104}	R^{104}	N	C^{104}	N	R^{176}	R^{212}
			<93%*	C^{104}	R^{104}	N	N	N	R^{176}	R^{212}
			<96%*	C^{104}	R^{104}	N	N	N	C^{140}	R^{212}
			96% - 98%*,**	C^{68}	R^{104}	N	N	N	N	R^{176}
	Sodium Hexametaphosphate	$[NaPO_3]_6$	Saturated	R^{140}	R^{180}	-	R^{104}	R^{180}	R^{122}	R^{122}
Disinfectants, Odor Control & Color Removal	**Aqua Ammonia††**	NH_3	Saturated	R^{140}	N	N	R^{104}	R^{140}	N	R^{248}
	Liquid Ammonium Sulfate (LAS)	$(NH_4)_2SO_4$	Saturated	R^{140}	R^{200}	R^{140}	R^{176}	R^{176}	R^{176}	R^{248}
	Calcium Hypochlorite	$CA(OCl)_2$	Saturated	C^{104}	R^{104}	R^{70}	R^{104}	R^{104}	R^{122}	R^{212}
	Chlorine Dioxide	ClO_2	14 g/L	R^{104}	R^{68}	–	N	N	C^{68}	R^{248}
	Hypochlorous Acid	HClO	10%	R^{140}	C^{176}	–	R^{68}	R^{68}	R^{140}	R^{248}
	Hydrogen Peroxide††	H_2O_2	<5%	R^{140}	R^{104}	–	C^{68}	R^{68}	R^{140}	R^{248}
			>5%	R^{104}	C^{68}	–	–	–	R^{68}	R^{248}
	Ozone (Aqueous)	O_3	0.5mg/L in H_2O	R^{68}	R^{68}	N	N	R^{104}	R^{104}	R^{176}
	Peracetic Acid	CH_3CO_3H	<10%	R^{104}	R^{180}	N	C^{68}	C^{68}	C^{68}	R^{248}
			>15%	C^{104}	N	N	C^{68}	C^{68}	C^{68}	R^{248}
	Potassium Permanganate	$KMnO_4$	Aqueous	C^{104}	R^{104}	N	C^{104}	R^{140}	R^{140}	R^{248}
	Sulfur Dioxide	SO_2	Aqueous	R^{104}	R^{68}	-	R^{104}	R^{104}	R^{140}	R^{68}
	Sodium Hypochlorite††	NaOCl	12.5%	R^{104}	R^{200}	N	N	C^{104}	R^{104}	R^{140}
			15%†	R^{68}	R^{200}	N	N	C^{104}	R^{104}	R^{140}
	Sodium Sulfite	Na_2SO_3	Saturated	R^{68}	R^{176}	R^{140}	R^{104}	R^{140}	R^{140}	R^{248}
	Sodium Bisulfite	$NaHSO_3$	Saturated	R^{140}	R^{140}	R^{122}	R^{104}	R^{176}	R^{212}	R^{248}
	Sodium Metabisulfite	$Na_2S_2O_5$	Saturated	R^{68}	–	R^{140}	R^{104}	R^{68}	R^{68}	R^{122}
	Sodium Permanganate	$NaMnO_4$	20%	C^{68}	–	–	–	R^{68}	R^{140}	R^{140}

RATINGS

Chemical compatibility ratings are specific to our products suppliers. The absence of any class indication for any given materials, signifies the absence of data for such material(s) with respect to the specific chemical(s), temperature(s) and concentration(s).

Note: Chemical resistance data is determined in a laboratory setting and cannot account for all possible variables of an installed application. It is up to the design engineer or final user to use this information as guidance for a specific application design. If a material is chemically resistant to the concentrated form of a specific chemical, it should be resistant to the diluted form of that same chemical. Ratings outside of the temperature and pressure range may be possible, please contact IPEX for more information.

** PTFE Diaphragm valve with spigot or flanged ends are available
† IPEX's unique and specifically engineered formula
†† Vented ball valve required

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IPEX by aliaxis

SALES AND CUSTOMER SERVICE

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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 world's 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
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Electrofusion systems for gas and water
- Irrigation systems
- PVC, CPVC, PP, PVDF, PE, and ABS pipe and fittings

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Xirtec® CPVC piping systems are made with Corzan® CPVC compounds.
Corzan® is a registered trademark of the Lubrizol Corporation.

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

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