AQUARIUM PIPING SYSTEMS

Xirtec® PVC

Duratec® AIRLINE SYSTEM

Duraplus™ ABS INDUSTRIAL SYSTEM

Duraplus™ air-line

AQUARIUM FEATURE PIPING SYSTEMS

WATER & AIR PIPING SYSTEMS

- Xirtec PVC Piping System
- Thermoplastic Valves
- Duraplus Airline Piping System
- Duratec Airline Piping System
- Duraplus Industrial Piping System

IPEX by aliaxis

We build tough products for tough environments®

IPEX – Your Corrosion-Proof Solution

IPEX offers a complete line of thermoplastic products for aquarium applications. Pipes, valves, fittings and accessories from a trusted and reliable single-source.

- Corrosion Resistance
- Outstanding Chemical Resistance (salt water, filtration media)
- Low Installation and Maintenance Costs
- Inert Material (will not contaminate water or harm aquatic life)

Having been successfully used in aquariums world wide for many years, IPEX has the right system for every size aquarium project. Available in 1/2" through 48" sizes and various pressure ratings.

Water Distribution and Collection – Pipe, Valves & Fittings

PVC Systems – 1/2" to 48"

Xirtec PVC is fundamentally ageless and possess outstanding resistance to a wide range of chemicals, including filtration media, salt solutions and animal bi-products. It will not rust, pit, scale, corrode or allow microbial growth on either the interior or exterior surfaces even in submerged water applications. These non-corroding properties ensure improved flow, lower maintenance costs, no particulate contamination and longer performance life of the system. PVC is an inert material and is commonly used for potable water distribution. This ensures that there will be no harmful material leaching into the process water that may harm its inhabitants.

PVC is lightweight, easily handled, stored , cut and joined utilizing a convenient solvent cement weld method, mechanical joints such as flanges, or a gasket push-fitting bell and spigot joint for pipe diameters above 24".

PVC Systems – 1/2" to 48"

Product Description	Configuration/Measurement	Size Range
Xirtec PVC Pipe	Schedule 40 & 80	1/2" to 24"
Xirtec PVC Fittings	Schedule 40 & 80	1/2" to 24"
PVC Pipe	SDR	1/2" to 48"

Duraplus™ ABS Industrial Systems – 1/2" to 8"

Duraplus ABS Industrial Piping Systems offer a complete range of pressure pipe, valves and fittings that are ideal for the demanding low temperature applications required in an aquarium environment. With the ability to operate in temperatures as low as -40°F while still maintaining its superior impact resistance and ductility, it is the most suitable material to maintain arctic habitat conditions. Whether that is to filter and maintain polar bear and penguin waters or in the chilled water and cooling tower systems, the versatility of Duraplus ABS is unmatched.

Like all thermoplastics, it will not rust, pit, scale, corrode or permit microbial growth on the interior or exterior surfaces allowing for improved flow characteristics over a longer life time compared to traditional materials. Additional benefits include its low installation costs as well as chemical and UV resistance. The most trusted system that aquariums demand, Duraplus ABS Industrial is a solvent cement system available from 1/2" to 8", suitable for pressures up to 230 psi at 73°F.

Duraplus™ ABS Industrial Systems

Product Description	Size Range
Duraplus ABS Pipe & Fittings	1/2" to 8"

Air Supply Piping Systems

Duraplus™ AirLine ABS Piping System – 1/2" to 4"

Efficient and effective aquarium aeration is an important consideration ABS is a ductile, lightweight, electrically non-conductive material that utilizes a solvent cement weld method for installation is ideal for compressed air distribution. ABS features a smooth bore that is resistant to corrosion, pitting, or scale build up, ensuring efficient, clean air distribution for aquarium aeration and pneumatic equipment supply throughout the life of the system. The outstanding ductility, impact resistance, and low temperature property retention ensure that the system will function properly in a variety of aquatic conditions. Duraplus Air-Line also provides the strength and flexibility needed for submerged water applications where movement, vibration and corrosion may be an issue.

Duraplus™ Airline ABS Piping System – 1/2" to 4"

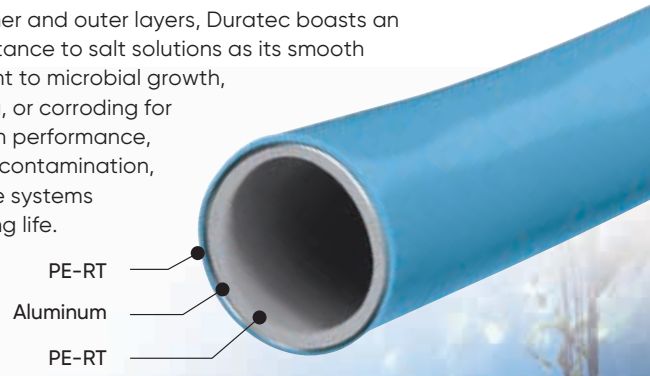
Product Description	Configuration/Measurement	Size Range
Duraplus Airline ABS Pipe	Metric	1/2" to 4"
Duraplus Airline ABS Fittings	Metric	1/2" to 4"

Duratec® AirLine – Pipe, Fittings & Valves 1/2" to 1"

Duratec Airline is an innovative compressed air and inert gas piping product that uniquely combines all of the benefits of plastic and metal in one pipe. Constructed of an inner and outer layer of PE-RT (Polyethylene of Raised Temperature) permanently bonded to an aluminum core, Duratec not only extends the life of the system, but significantly reduces leakages, labor, installation and operating costs.

Duratec flexible compressed air pipe can be easily bent by hand and comes in convenient 100ft or 300ft coils. This allows for installations with minimum joints, which will not only reduce costs but increase efficiency. Duratec utilizes mechanical joint, nickel plated fittings, or optional SS fittings, that are corrosion resistant and easy to install.

With PE-RT inner and outer layers, Duratec boasts an excellent resistance to salt solutions as its smooth bore is resistant to microbial growth, pitting, scaling, or corroding for optimal system performance, without risk of contamination, throughout the systems entire operating life.



Duratec® Airline – 1/2" to 1"

Product Description	Configuration/Measurement	Size Range
Duratec Airline Pipe	PE-RT–AL–PE-RT	1/2" to 1"
Duratec Airline Fittings	Nickle Plated Brass & SS	1/2" to 1"

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 ball valve for on/off service, a butterfly valve for isolation, an actuator for control or instrumentation to measure flow conditions, IPEX has a tailored solution to meet your needs.

TKD 3-Way Ball Valve
Sizes: 1/2" – 2"

VXE Ball Valve
Sizes: 1/2" – 6"

VKD Ball Valve
Sizes: 3/8" – 4"

FK Butterfly Valve
Sizes: 1 1/2" – 16"

FX Butterfly Valve
Sizes: 1 1/2" – 12"

Corriosion Resistant Pnuematic and Electric Actuators
1/2" – 16"

SSE Spring Assisted Ball Check Valve
Sizes: 1/2" – 4"

SXE Ball Check Valve
Sizes: 1/2" – 4"

VA Air Release Valve
Sizes: 3/4", 1-1/4" & 2"

DK Manual Diaphragm Valve
Sizes: 1/2" – 2 1/2"

DK Pneumatic Diaphragm Valve
Sizes: 1/2" – 2 1/2"

RV Sediment Strainer
Sizes: 1/2" – 4"

Note: For further information pertaining to a specfific valve including available materials, pressure ratings and chemical compatibility, please contact an IPEX representative.

Common Chemicals in Aquarium Applications

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 Name	Formula	Concentration	PVC	ABS	EPDM	FPM†	PTFE
Acetic Acid	$C_2H_4O_2$	≤10%	R^{140}	R^{68}	R^{104}	C^{140}	R^{246}
		10-50%	R^{140}	N	R^{68}	N	R^{246}
		50-80%	R^{68}	N	R^{68}	N	R^{246}
		>80%	R^{68}	N	R^{68}	N	R^{246}
Aluminum Sulfate	$Al_2(SO_4)\cdot 18H_2O$	Saturated	R^{140}	R^{160}	R^{140}	R^{140}	R^{248}
Ammonium Chloride	NH_4Cl	Aqueous	R^{140}	R^{140}	R^{140}	R^{212}	R^{248}
Ammonium Molybdate Tetrahydrate	$(NH4)_6Mo_7O_{24} \cdot 4H_2O$	Aqueous	A	R^{122}	R^{68}	N	R^{122}
Ascorbic Acid (Vitamin C)	$C_6H_8O_6$	Aqueous	R^{68}	N	R^{68}	R^{68}	R^{122}
Boric Acid	H_3BO_3	Saturated	R^{104}	R^{140}	R^{140}	R^{176}	R^{248}
Calcium Carbonate	$CaCO_3$	Aqueous	R^{140}	R^{104}	R^{104}	R^{104}	R^{248}
Calcium Chloride	$CaCl_2$	Aqueous	R^{140}	R^{140}	R^{140}	R^{176}	R^{248}
Calcium Hydroxide (Lime)	$Ca(OH)_2$	Aqueous	R^{140}	R^{68}	R^{176}	R^{176}	R^{248}
Citric Acid	$C_6H_8O_7$	Aqueous	R^{140}	N	R^{140}	R^{176}	R^{212}
Disodium Phosphate (Heptahydrate)	$Na_2HPO_4(H_2O)_7$	Aqueous	R^{140}	R^{68}	R^{212}	R^{212}	R^{212}
Ethyl Alcohol (Ethanol)	CH_3CH_2OH	<5%	R^{104}	N	R^{140}	R^{176}	R^{248}
		<96%	R^{104}	N	R^{140}	R^{176}	R^{248}
Formaldehyde	HCHO	<37%	R^{104}	R^{68}	R^{140}	R176	R^{248}
Glycerin	$C_3H_5(OH)_3$	Saturated	R^{140}	R^{140}	R^{176}	R^{176}	R^{248}
Hydrochloric Acid	HCl	<25%	R^{140}	R^{68}	R^{68}	R^{176}	R^{248}
		<30%	R^{140}	N	N	R^{140}	R^{248}
		<37%	R^{140}	N	N	R^{104}	R^{248}
		>37%	R^{104}	N	N	R^{68}	R^{248}
Isopropyl Alcohol	C_3H_8O	Saturated	R^{68}	R^{68}	R^{104}	R^{140}	R^{248}
Lithium Chloride	LiCl	Aqueous	R^{140}	R^{104}	R^{140}	R^{140}	R^{248}
Magnesium Chloride	$MgCl_2$	Aqueous	R^{140}	R^{140}	R^{176}	R^{176}	R^{248}
Magnesium Sulfate	$MgSO_4$	Aqueous	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}
Ozone	O_3	0.5 mg/L in H_2O	R^{68}	N	R^{104}	R^{104}	R^{176}
Potassium Bromide	KBr	Saturated	R^{104}	R^{140}	R^{212}	R^{212}	R^{248}
Potassium Chloride	KCl	Saturated	R^{140}	R^{140}	R^{212}	R^{212}	R^{248}
Potassium Hydroxide	KOH	<50%	R^{140}	R^{68}	R^{140}	N	R^{248}
Potassium Iodide	KI	Saturated	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}
Sodium Bicarbonate	$NaHCO_3$	Saturated	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}
Sodium Carbonate	$NaCO_3$	Aqueous	R^{140}	R^{140}	R^{176}	R^{176}	R^{248}
Natural Seawater	–	100%	R^{140}	R^{122}	R^{176}	R^{212}	R^{248}
Sodium Chloride (Salt)	NaCl	Aqueous	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}
Sodium Hydroxide (Caustic Soda)	NaOH	<50%	R^{104}	N	R^{140}	N	R^{248}
		>50%	R^{104}	N	R^{140}	N	R^{248}
Sodium Hypochlorite †† (Bleach)	NaOCl	<12.5%	R^{104}	N	C^{104}	R^{104}	R^{140}
		<15%	R^{68}	N	C^{104}	R^{104}	R^{140}
Sodium Nitrate	$NaNO_3$	Aqueous	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}
Sodium Nitrite	$NaNO_2$	Aqueous	R^{104}	R^{140}	R^{176}	R^{212}	R^{248}
Sodium Sulfate	Na_2SO_4	Aqueous	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}
Sodium Tetraborate	$Na_2B_4O_7 \cdot 10H_2O$	Aqueous	R^{104}	R^{140}	R^{140}	R^{176}	R^{248}
Sodium Thiosulfate	$Na_2S_2O_3$	Aqueous	R^{104}	R^{140}	R^{140}	R^{140}	R^{248}
Sulfuric Acid * Double Containment piping is recommended when the fluid temperature exceeds the maximum rated temperature.	H_2SO_4	<50%	R^{140}	N	C^{68}	R^{212}	R^{248}
		<70%	C^{140}	N	N	R^{176}	R^{212}
		<78%*	C^{104}	N	N	R^{176}	R^{212}
		<93%*	C^{104}	N	M	R^{176}	R^{212}
		<96%*	C^{104}	N	N	C^{140}	R^{212}
		96% – 98%*	C^{68}	N	N	N	R^{176}
Zinc Sulfate	$ZnSO_4 \cdot 7H_2O$	Aqueous	R^{140}	R^{140}	R^{176}	R^{212}	R^{248}

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.

† IPEX's unique and specifically engineered formula
†† Vented ball valve required

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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 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 earned 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
- PE Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems
- PVC, CPVC, PP, PVDF, PE, ABS, and PEX pipe and fittings

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