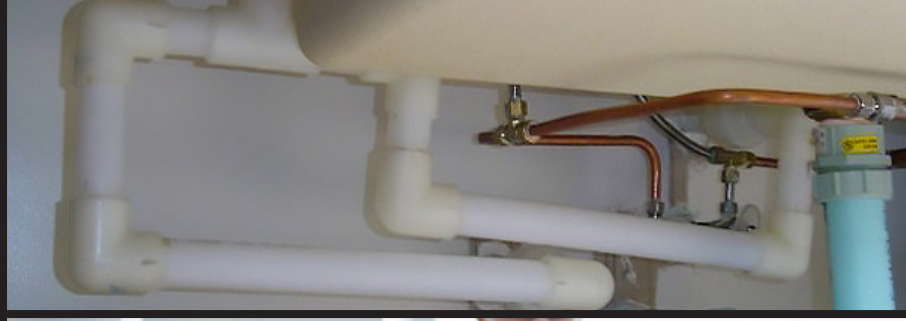
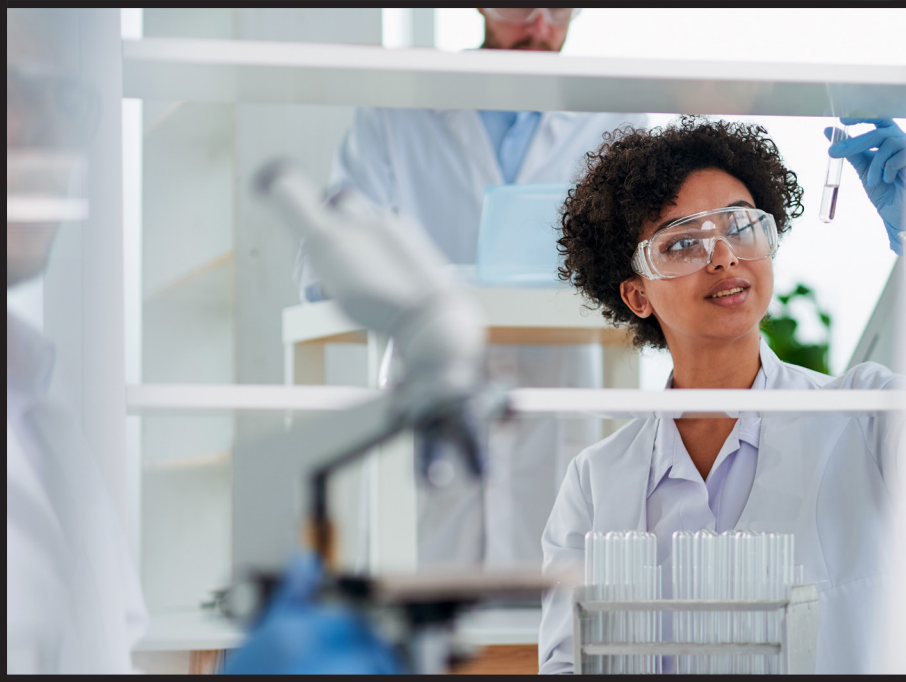
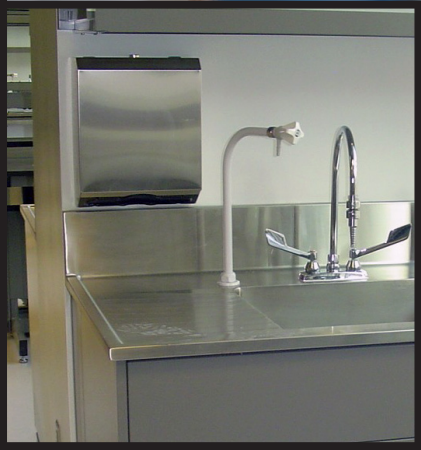
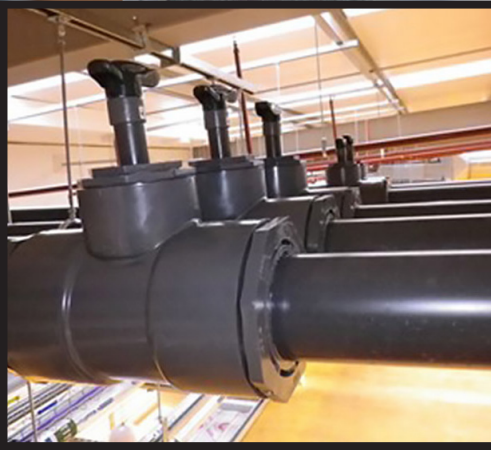
PIPING SYSTEMS FOR HEALTH CARE & LABORATORY APPLICATIONS









PIPING SYSTEMS FOR HEALTHCARE & PHARMACEUTICAL APPLICATIONS

IPEX
by aliaxis

- High Purity Piping Systems
- Custom Double Containment Solutions
- Plenum Rated & Corrosion Resistant Lab Waste
- Corrosion Resistant DWV
- Potable Water Piping
- Grease Interceptors

We build tough products for tough environments®

IPEX Integrated Solutions
for Healthcare & Laboratories

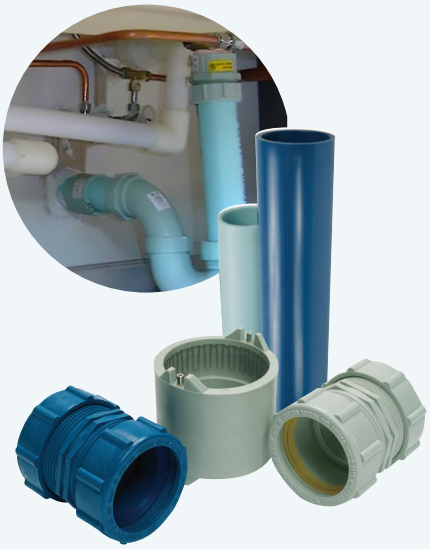
As a prominent provider of thermoplastic piping solutions, IPEX presents an extensive array of integrated offerings tailored to address the demands of healthcare and laboratory environments. Surpassing applicable standards, the IPEX system, encompassing Piping, Valves, and Fittings (PVF), guarantees consistent and optimal performance across healthcare facilities.

- An array of products to cover most healthcare and laboratory piping needs
- IPEX meets or exceeds industry standards, ensuring regulatory adherence
- Decades of application experience
- Engineered to withstand critical processes and chemicals, including aggressive cleaning and sanitizing agents
- Minimized downtime and maintenance.
- Low thermal conductivity and smooth inner walls allow for cost and energy effective design
- Longevity and reliability in critical settings
- IPEX products are available through an extensive network of local distributors
- Local 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, material scientists, technical sales representatives, and chemists.

What We Offer

Acid Waste Systems

LABLINE® PLENUMLINE™ ENFIELD™



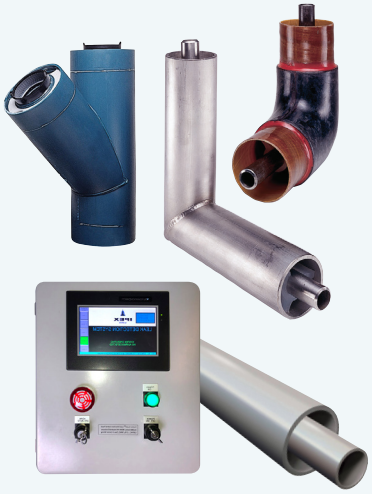
IPEX's acid waste systems, Labline®, Plenumline™, and Enfield™, play essential roles in laboratories within healthcare settings.

Labline and Enfield (FRPP and NFRPP) offer unparalleled chemical resistance, allowing them to convey most forms of corrosive waste from a laboratory setting. No need to flush after each use or worry about laboratory re-purposing. Plenumline Flame retardant PVDF solutions offer added chemical and temperature resistance, as well as a full E84 plenum rating. Enfield's robust electrofusion joining system offers unparalleled reliability with over 30 years of tired and proven installations. Plenumline and Labline offer a semi-permanent mechanical joint for even faster installation. Plenumline pipe and fittings have a flame spread index (FSI) of 5 and a smoke development (SDI) of 35 as tested in accordance with ASTM E84 (UL 723) and the material is UL listed.

All three systems can be used together with easy transition to optimize system reliability, efficiency and cost.

Double Containment Piping Systems

CustomGuard® Drain-Guard™ Encase™ Centra-Guard™



IPEX's innovative double contained solutions cater perfectly to the high risk demands of healthcare. CustomGuard™ systems can be custom-made in a variety of materials including any combination of thermoplastics, thermosets, and metals. These include containing copper and stainless steel pipes for water distribution over critical areas.

Additionally, the double-contained drainage system, DrainGuard™, excels at efficiently managing DWV and storm water effluent over critical areas where leaks could compromise records, health, or even life.

Our Encase system harnesses the reliability of our Enfield Acid Waste system and its electrofusion joints and offers it in a double-contained system, yielding a fail-safe system with excellent resistance to chemical waste, solvents, cleaning agents, and strong acids, often found in laboratory environments.

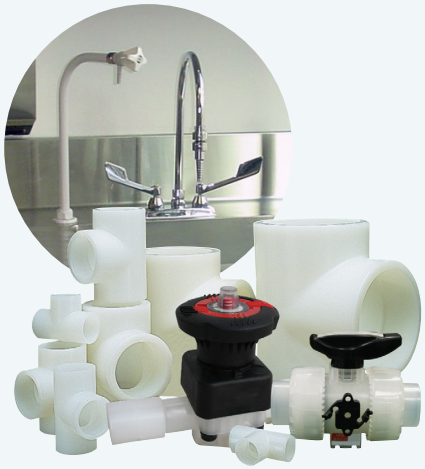
IPEX also offers a failsafe and simple to use electronic leak detection system called Centra-Guard. This ensures any leaks are identified immediately.

These advanced solutions offer fail safe, leak free systems, that reflect IPEX's commitment to delivering tailored, high-performance products that meet the industry's exacting standards.

High Purity System

enpure™

Enpure ensures the secure transport of high-purity water essential for laboratory processes. Utilizing virgin polypropylene (PP) material devoid of any additives or regrind, Enpure upholds the stringent cleanliness and integrity requirements of the industry. Enpure provides the reliability and purity necessary for healthcare laboratory water operations.

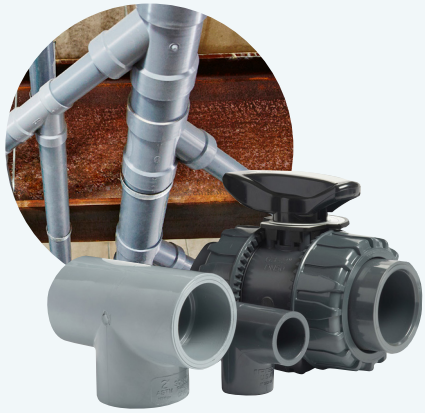


Potable Water & DWV Systems

Xirtec® CPVC

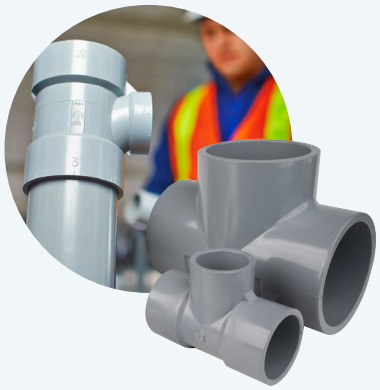
IPEX has a full offering of Xirtec® CPVC for hot and cold potable water distribution as well as PVC DWV for sanitary and stormwater drainage.

Xirtec CPVC is made using Corzan® CPVC compound which offers superior impact, temperature and chemical resistance as opposed to generic CPVC systems. This high impact grade of CPVC allows for a more robust system with increased reliability that also meets plenum requirements when tested in general accordance with ASTM E84. CPVC offers a smooth wall, corrosion resistant, piping system that prevents scaling and pitting, minimizing biofilm build up. CPVC also allows for high velocity, high temperature sanitation processes and is compatible with common chlorine based chemical sanitation solutions.



PVC DWV Systems

PVC DWV offers corrosion resistance not attainable by more traditional materials and can withstand the corrosive wastes that often make their way down the drain in a healthcare facility. These noncorroding properties ensure a smooth inner wall is maintained through the systems life to ensure improved flow and prevent opportunities for buildup where pathogens can grow.

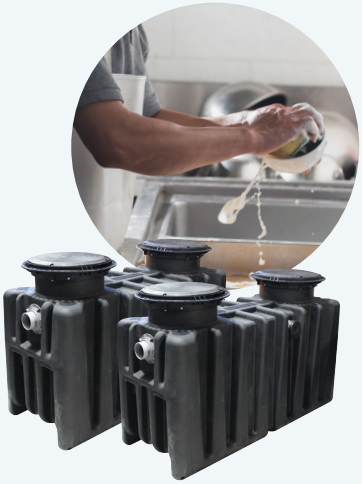


Grease Management Systems

endura

IPEX's grease interceptor line, Endura® is an indispensable solution tailored for hospital cafeterias. Designed to effectively capture and manage grease, oils, and fats from kitchen wastewater.

In hospital cafeterias, where food safety and sanitation are paramount, Endura plays a pivotal role in preventing grease buildup that could lead to clogs and environmental contamination. By effectively separating grease, maintaining efficient drainage and minimizing the risk of blockages, the Endura grease interceptor line contributes to jurisdictional requirements and the smooth and safe operation of healthcare facility kitchens, ensuring a clean and sanitary environment for staff and patients alike.



Traditional Systems VS IPEX's Engineered System

Drain, Waste, and Venting (DWV) in Healthcare

Cast Iron, Copper		PVC
Long life span when used appropriately. Susceptible to pitting and scaling, as well as corrosion due to acidic waste or aggressive cleaners.	**Lifespan**	Long lifespan when used appropriately. Corrosion resistant even to acids and cleaners. Will not pit or scale. Smooth inner wall promotes self cleaning.
Heavier and less flexible compared to thermoplastics	**Weight**	Lightweight and easy to handle, install, and maintain
Special considerations for fire stopping where T ratings are required by code as metal will conduct heat through a fire stop wall	**Fire Stopping**	PVC specific fire stops required
High crush strength however, material is relatively brittle	**Strength**	Flexibility provides ductility and strength. Pipe can bend and deflect to safely absorb stress. Can be damaged from severe negligence.
Heavy and brittle pipe and fittings can hinder installation. System requires proper joint restraint.	**Installation**	Lightweight and easy to move helps with ease of installation. Quick and easy one step solvent cement process. Flexibility of the pipe allows for deflection and adjustment.
Scaling and pitting allows for build up of byproducts in sensitive environments. Not compatible with harsh sanitation chemicals. Gasket joints may be compromised due to chemical compatibility or poor restraint allowing leaks.	**Environmental Concerns**	Smooth wall promotes self cleaning. Compatible with sanitation chemicals and occasional hot water flushes. Permanent cement joints reduce the risk of contamination due to leaks.

Lab & Acid Waste in Healthcare

Glass		PP, PVDF
High chemical resistance and inertness.	**Chemical Resistance**	PP offers excellent chemical resistance. PVDF offers even greater resistance to chemicals, even at elevated temperatures
Heavy and brittle pipe adds to installation efforts and the possibility of breakage.	**Weight & Lifespan**	Light weight and impact resistant material with excellent chemical and corrosion resistance allow for long lifespan
Pipe is strong but brittle. Can be damaged during installation, transport, or service	**Strength**	Ductility and impact strength provide strength and durability during installation and service.
Mechanical joint method allow for versatility but adds additional chemical resistance and long term reliability concerns	**Installation**	Proven and permanent socket fusion or semi permanent mechanical joint connection allows for versatility and reliability
Often used in specialized laboratory settings where high temperatures are required	**Typical Uses**	Widely used in laboratory, pharmaceutical, and healthcare settings. Offered in PP and PVDF to suite a wide variety of chemicals and temperatures.
Glass pipe has excellent resistance to heat and is non combustible	**Thermal Properties**	PP can be used up to 180°F constant and 212°F intermittent. FRPP is self extinguishing and carries a V2 burning class. PVDF can be used up to 285°F and is listed to ASTM E84 for plenums

High Purity Fluid Conveyance

Stainless Steel		PP
Good corrosion resistance, but less effective than PP. Can react with high purity water and introduce contamination.	**Purity**	Inert PP material minimizes leaching contaminants even at 18.2Mohm water levels. Smooth interior finish resists build up and will not pit or corrode minimizing areas for bacterial growth.
Heavy and rigid nature can complicate installation	**Weight & Lifespan**	Lightweight and easily installed, reducing installation challenges
Limited resistance to strong sanitation chemicals. Great resistance to high temperatures and UV.	**Sanitation**	Good resistance to chlorine based chemicals and short term exposure to high temperatures. Limited compatibly to UV
Suitable for high-pressure and high-temperature requirements	**Temperature & Pressure Requirement**	Ideal for a wide range of purity water applications with moderate pressure and temperature conditions with occasional hot temperature sanitation.
Commonly found in critical environments with specialized demands	**Typical Uses**	Widely adopted in laboratories and pharmaceutical industries due to suitability Offered in specialized grades for specific fluid compatibility
Joints are most commonly welded. This requires special training and equipment	**Installation**	Utilizes socket fusion welds that require minimal training and effort.

Potable Water Conveyance

Copper and SS		CPVC
Heavier than thermoplastic materials. When used appropriately systems may last decades. However, corrosion, pitting, and scaling can occur.	**Weight & Lifespan**	Lightweight and easy to transport. Will not rust, pit, scale or corrode. Design life of 50 years.
Can handle 180F and above. Higher pressure capabilities at elevated temperatures than thermoplastics.	**Temperature & Pressure Requirement**	With a continuous operating temperature up to 160F, CPVC is also capable of withstanding occasional fluid temperatures up to 200F for sanitation purposes.
Maximum fluid velocity is dependent on operating temperature. Erosion corrosion may be an issue	**Fluid Velocity**	CPVC will not experience erosion corrosion and is capable of operating up to 8ft/s. However, water hammer must be managed above 5ft/s
Care should be taken to check resistance to sanitation chemicals	**Chemical Resistance**	CPVC is chemically resistant to chlorine, cholorime, and chlorine dioxide.
Great for large diameter mains or headers where thermoplastics may not be able to handle the needed pressure at elevated temperature. Requires skilled labor to install.	**Installation**	Corzan CPVC meets plenum requirements when tested in general accordance with ASTM E84. Installs using permanent and reliable solvent cementing process.

SALES AND CUSTOMER SERVICE

IPEX USA LLC
Toll Free: (800) 463-9572
ipexna.com

About IPEX by Aliaxis

As leading suppliers of thermoplastic piping systems, IPEX by Aliaxis provides our customers with some of the world's largest and most comprehensive product lines. All IPEX by Aliaxis 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 by Aliaxis 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

IPEX by aliaxis

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