



Corzan[®]
MATERIAL & PIPING SOLUTIONS



THE RELIABLE PIPING SOLUTION FOR
INDUSTRIAL PROCESSING SYSTEMS

Ideal for

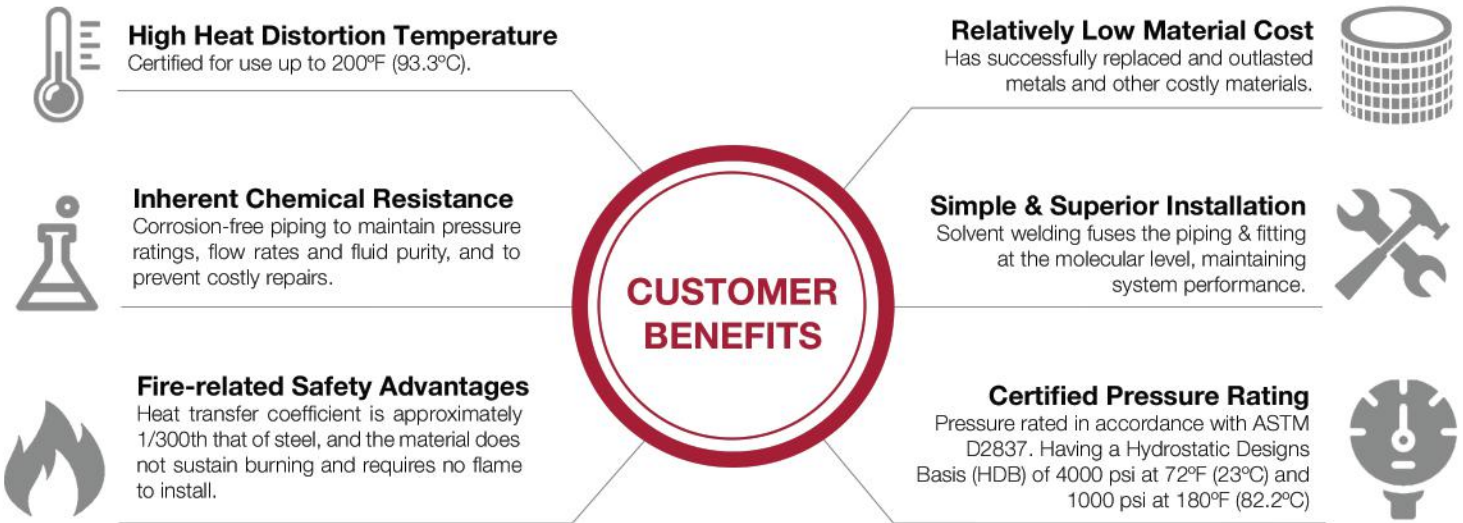
**Chemical Processing • Water Treatment • Power Industry • Industrial
Manufacturing • Semiconductor & Electronics • Mining Applications**

CORZAN PRODUCT INTRODUCTION



Corzan® has since proven its value for more than 50 years in a variety of Industrial application in which high use temperature and excellent resistance to corrosive chemicals are desirable. Corzan, through years of use and extensive testing, that it possesses the chemical resistance, mechanical properties and strength necessary to endure a wide array of harsh industrial environments.

CORZAN® CPVC HAS ALL THE RIGHT QUALITIES



PROVEN PERFORMANCE FOR MULTIPLE INDUSTRIES

CHEMICAL PROCESSING



COMPATIBLE WITH

- Hydrochloric Acid
- Sodium Hypochlorite
- Phosphoric Acid
- Sodium Hydroxide (caustic soda)
- Sodium Chloride
- Sulfuric Acid

COMMON USES

- Production Facilities
- Air Scrubbing
- Blending Operations
- Wastewater Treatment & Demineralization Operations
- Reagent Processes

Reliably transport aggressive chemicals at high temperature, under pressure, without corrosion concerns.

CHLOR ALKALI



Transport harsh chemicals through some of the most corrosive environments imaginable with optimal service life.

COMPATIBLE WITH

- Cell Liquor (Brine, Sodium Hydroxide)
- Concentrated Sodium Chloride (Brine)
- Demineralized/Deionized (DI) Water
- Hydrochloric Acid
- Sodium Hypochlorite
- Sodium Hydroxide (Caustic Soda)
- Sulfuric Acid
- Wet Chlorine Gas

COMMON USES

- Pipes
- Tanks
- Headers
- Manifolds
- Chlorine Drying Towers

MINERAL PROCESSING



Resist abrasion & withstand other demands of precious & raw material processing operations.

COMPATIBLE WITH

- Copper Sulfate
- Metabisulphite
- Sodium Cyanide
- Sodium Sulfate
- Sulfuric Acid
- Zinc Sulfate

COMMON USES

- Electrolysis Operations
- Electrowinning
- Electrorefining
- Acid Service Lines
- Tailings Lines
- Gas Vent Scrubbers
- Froth Flotation Operations
- Wastewater Treatment Plants

POWER GENERATION



Stand up long-term to the high pressures & corrosive chemicals commonly used by power plants.

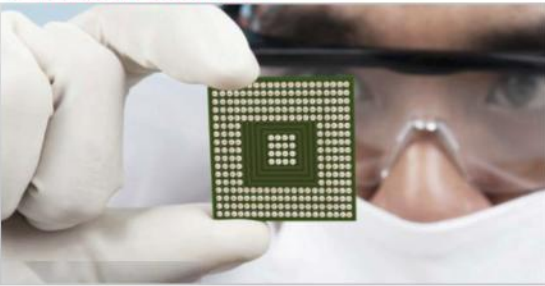
COMPATIBLE WITH

- Alum
- Caustic Soda
- Ferric Chloride
- Ferrous Chloride
- Hydrogen Sulfide
- Hypochlorite
- Sodium Sulfite
- Sulfuric Acid

COMMON USES

- Underground Cooling Water Loops
- Cooling Tower Risers and Headers
- Demineralizers Systems for Creating Boiler Feed Water
- Condensate Return Water Apps.
- Flue Gas Desulfurization Systems
- Environmental Systems (for Coal Fired Steam Plants)

SEMICONDUCTORS



Meet the high purity standards for cleanrooms & eliminate corrosion concerns caused by aggressive chemicals.

COMPATIBLE WITH

- Ammonium Hydroxide
- Hydrochloric Acid
- Hydrofluoric Acid
- Nitric Acid
- Sodium Hydroxide
- Sulfuric Acid

COMMON USES

- Processing Operations
- Fluid Handling
- Exhaust Ventilation
- Wastewater Applications
- Lithographic Plate Etching

WASTEWATER TREATMENT



Put an end to corrosion, even when transporting the most aggressive disinfection chemicals.

COMPATIBLE WITH

- Acids: Sulfuric, Nitric, Hydrochloric & Phosphorus
- Aggressive Saltwater
- Alum
- Alkaline Lime Slurry
- Disinfectants & Dechlorination Chemicals
- Ferrous Chloride & Ferric Chloride
- Hydrogen Sulfide
- Microorganisms in High Concentrations
- Sodium Hydroxide (Caustic Soda)
- Sodium Hypochlorite

COMMON USES

- Primary & Secondary Wastewater Treatment
- Advanced Water Treatment
- Biological Denitrification
- Double-Containment System
- Wastewater Odor Control
- Wet Air Scrubbers
- Metal Chelating Agents in a Liquid Redox Process
- Desalination Systems for the Reverse Osmosis Processing

PHYSICAL PROPERTIES OF CORZAN CPVC

Property	Corzan Pipe	ASTM
Specific Gravity 1000 kg/m ³	1.52	D792
Modulus of Elasticity @ 73°, psi	4.23 x 10 ⁵	D638
Ultimate Tensile Strength, psi	7,960	D638
Comprehensive Strength, psi	10,100	D695
Poisson's Ratio	.35 - .38	-
Working Stress @ 73°F, psi	2,000	D1598
Hazen-Williams C Factor	150	-
Coefficient of Linear Expansion in./in./°F/in	3.8 x 10 ⁻⁵	D696
Thermal Conductivity BTU/hr./ft.2/°F/in.	0.95	C177
Limiting Oxygen Index	60%	D2863
Electrical Conductivity	Non Conductor	-

Cell Classification for CPVC is defined by ASTM D1748 and certificated by NSF International. The cell classification for standard CPVC is 23447 while for High Impact Pipe compound it is 24448. Corzan is available sizes up to 8".

A Single Material For All Process Design Needs

Corzan® is a member of the Corzan Industrial Systems family of CPVC pipe, fittings and process components that were incepted to simplify system design, maintenance & repair with one reliable material solution.

Piping system, pump/filtration systems or air pollution control systems are needed, Atlanta can provide a proven, corrosion-resistant solution for the entire process.

Cell Class - 24448

Higher Impact Strength

- Three times the impact strength of standard CPVC
- Pipe can be cut easier
- Fewer breaks & fractures
- Lower scrap rate

Cell Class - 24448

Higher Heat Distortion Temperature

- Minimum HDT of 110°C for High Impact Pipe Compound vs. 100°C for standard CPVC
- High Impact CPVC pipe will keep its straight professional appearance where standard CPVC may sag or bend

CORZAN CPVC CHEMICAL RESISTANCE

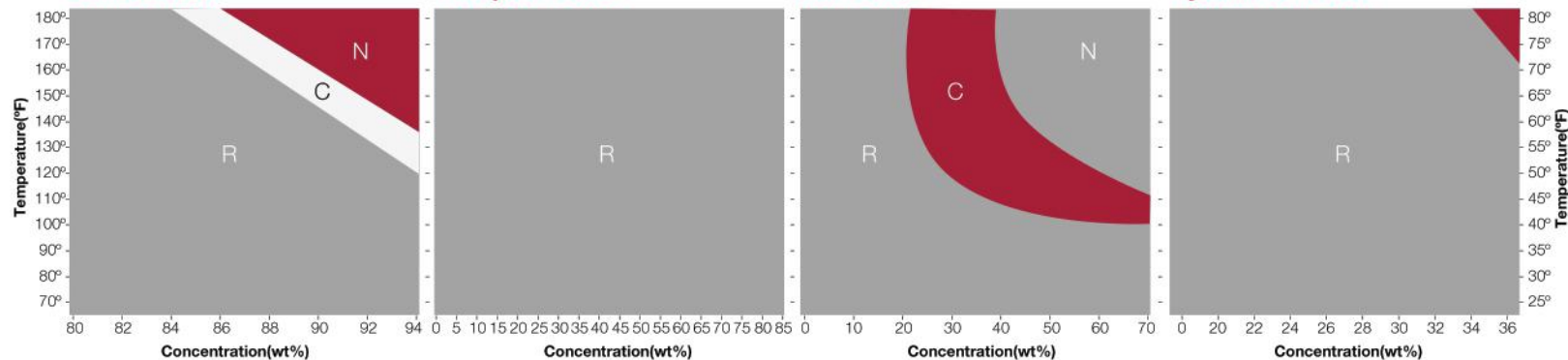


Sulfuric Acid

Phosphoric Acid

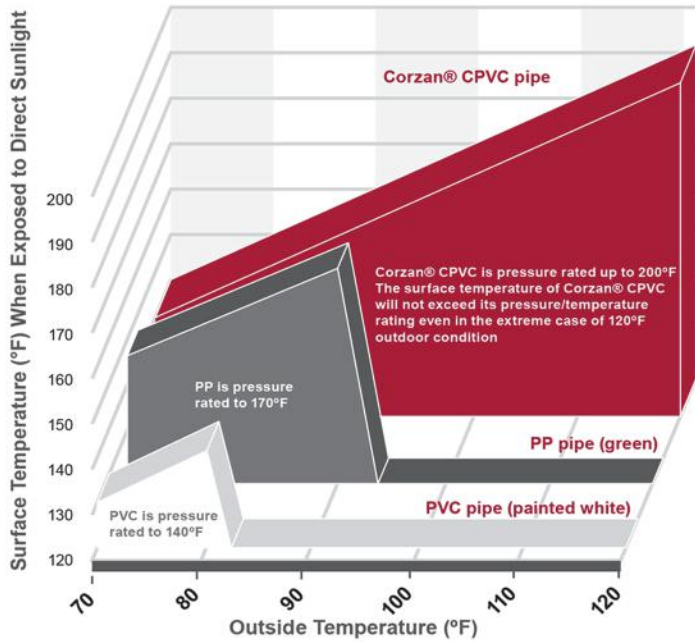
Nitric Acid

Hydrochloric Acid



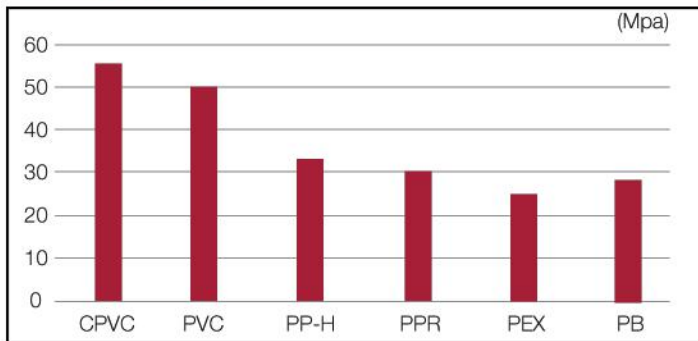
R = Recommended
C = Caution
N = Not Recommended

WEATHERABILITY



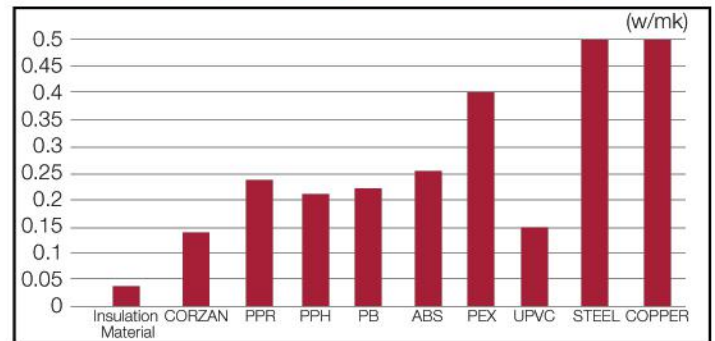
Over 50 years of experience with CPVC, including many long standing outdoor installations, demonstrates that Corzan® products will be able to withstand long-term exposure to the environment without significant adverse effects. In fact, Atlanta experience verifies that the pressure bearing capability of Corzan® Piping Systems is maintained after extended exposure. Depending on the specific installation, there has been some gradual reduction in impact properties with prolonged exposure.

TENACITY



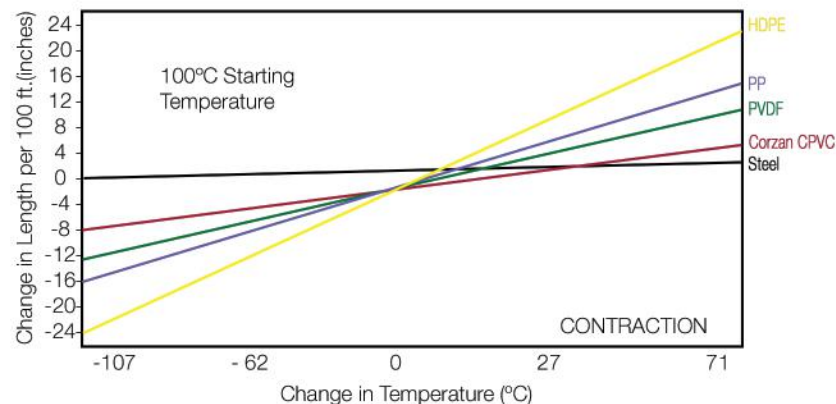
Corzan® CPVC has high tenacity compared to other thermolastic materials.

THERMAL CONDUCTIVITY



Corzan® CPVC has a low thermal conductivity

THERMAL EXPANSION



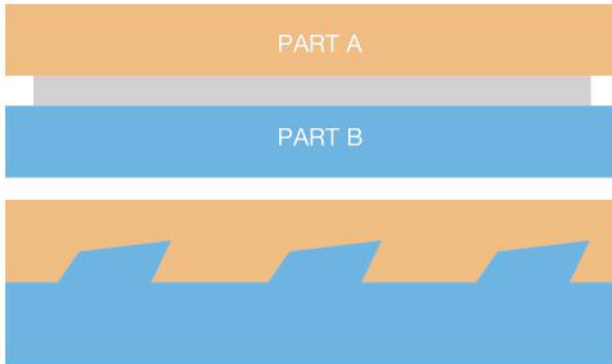
Corzan® Piping Systems are less prone to expansion from chemical media runs of varying temperature. This allows the product to be installed with fewer expansion loops and water support spacing.

ABRASION RESISTANCE

TABER ABRASION TESTER (Abrasion Ring CS-10, Load 1 kg)	
Nylon	5mg/1000 cycles
UHMW PE	5
PVDF	5-10
PVC (rigid)	12-20
PP	15-20
CPVC	20
CTFE	13
PS	40-50
Steel (304 SS)	50
ABS	60-80
PTEE	500-1000

Corzan® Piping Systems will usually outperform metal when transporting abrasive media & have been used successfully in many abrasive industrial applications. One widely referenced test method is the Taber Abrasion Test, in which the weight loss a material is measured after being exposed to an abrasive wheel for 100 cycles. While the Taber test cannot predict actual performance of a material to a given application, it does provide a relative measure to compare materials.

INSTALLATION SOLVENT



Joint Strength

Adhesion: Glues bond to part A on one side & to part B on the other side. The glue bond does not work properly when there is space between part A & part B.

Solvent Welding: Some components in a solvent cement penetrate, melt and/or swell the material and then evaporate, which allows the substrates to regain crystallinity and with it all of their physical property. 80% of the bond strength in a solvent weld comes by fusing part A into part B.

PREPARATION



Burrs and filings can prevent proper contact between the pipe and fitting and may put undue stress on the pipe and fitting assembly. Burrs and filings must be removed from the outside and inside of the pipe. A chamfering tool or file is suitable for this purpose.

A slight bevel should be placed at the end of the pipe to ease entry of the pipe into the socket and minimize the chances of wiping solvent cement from the fitting. For pipe sizes 2 in. and larger a 10° to 15° chamfer of 3/32 in. is recommended.

Loose soil and moisture should be wiped from the fitting socket and pipe end with a clean, dry rag. Moisture can slow the curing, and at this stage of assembly excessive water can reduce the joint strength.

The dry fit of the pipe and fitting should be checked. The pipe should enter the fitting socket easily 1/3 to 2/3 of the depth. If the pipe bottoms in the fitting with little interference, extra solvent cement should be used to prepare the joint.

SOLVENT WELDING STEPS



Apply primer to OD of pipe



Apply primer to ID of fitting



Apply cement to OD of pipe



Apply cement to ID of pipe



1. Insert pipe into fitting
2. Quarter turn as pipe is pushed into fitting

PRODUCT RANGE

CPVC Pipe SCH40



Nominal Size	OD	Wall Thickness	Length
in.	mm.	SCH40	M
1/2	21.34	2.77	4
3/4	26.67	2.87	4
1	33.40	3.38	4
1-1/4	42.16	3.56	4
1-1/2	48.26	3.68	4
2	60.33	3.91	4
2-1/2	73.03	5.16	4
3	88.90	5.49	4
4	114.30	6.02	4
6	168.28	7.11	4
8	219.08	8.18	4
10	273.05	9.27	4
12	323.85	10.31	4
14	355.60	11.10	4
16	406.40	12.70	4

CPVC Pipe SCH80





Nominal Size	OD	Wall Thickness	Length
in.	mm.	SCH80	M
1/2	21.34	3.73	4
3/4	26.67	3.91	4
1	33.40	4.55	4
1-1/4	42.16	4.85	4
1-1/2	48.26	5.08	4
2	60.33	5.54	4
2-1/2	73.03	7.01	4
3	88.90	7.62	4
4	114.30	8.56	4
6	168.28	10.97	4
8	219.08	12.70	4
10	273.05	15.06	4
12	323.85	17.45	4
14	355.60	19.05	4
16	406.40	21.41	4


Standard Fittings


45° Elbow	Nominal Size
	in
	1/2
	3/4
	1
	1-1/4
	1-1/2
	2
	2-1/2
	3
	4
	6
	8

90° Elbow	Nominal Size
	in
	1/2
	3/4
	1
	1-1/4
	1-1/2
	2
	2-1/2
	3
	4
	6
	8

Coupling	Nominal Size
	in
	1/2
	3/4
	1
	1-1/4
	1-1/2
	2
	2-1/2
	3
	4
	6
	8
	10
	16

Tee	Nominal Size
	in
	1/2
	3/4
	1
	1-1/4
	1-1/2
	2
	2-1/2
	3
	4
	6

Tee Reducer	Nominal Size
	in
	1 x 1-1/4
	1 x 1-1/2
	2 x 1
	2 x 1-1/4
	2-1/2 x 1-1/4
	2-1/2 x 1-1/2
	2-1/2 x 2
	3 x 1-1/2
	3 x 2
	4 x 1
	4 x 2
	4 x 1-1/2
	4 x 2-1/2





Coupling Reducer	Nominal Size
	in
	3/4 x 1/2
	1 x 1/2
	1 x 3/4
	1-1/4 x 1
	1-1/2 x 1-1/4
	2 x 1-1/2
	2-1/2 x 2
	3 x 2
	3 x 2-1/2
	4 x 3

End Cap	Nominal Size in	Beamjoint	Nominal Size in	Flange	Nominal Size in
	1/2		3/4 x 1/2		1/2
	3/4		1 x 3/4		3/4
	1		1-1/4 x 1		1
	1-1/4		1-1/2 x 1-1/4		1-1/4
	1-1/2		2 x 1-1/2		1-1/2
	2		2-1/2 x 2		2
	2-1/2		3 x 2-1/2		2-1/2
	3		4 x 3		3
			4		
			6		
			8		

Threaded Fittings

Female Threaded Adapter	Nominal Size in	Male Threaded Adapter	Nominal Size in	Union	Nominal Size in
	1/2		1/2		1/2
	3/4		3/4		3/4
	1		1		1
	1-1/4		1-1/4		1-1/4
	1-1/2		1-1/2		1-1/2
	2		2		2

Accessories

CPVC CEMENT GREY - HEAVY BODIED	Size (pint)	PVC/CPVC PRIMER PURPLE - WATER THIN	Size (pint)	PIPE CUTTER	Size (mm)	Deburring Tool	Size (mm)
	1 2		1		15-32		12-60

Images for illustration only. Actual products and specifications may vary without prior notice. For inquiries, contact our Technical Department.

PROJECTS



Chemical Processing

Project Name : CPF Dualam
Application: Wet Chlorinated Gas



Industrial Water Treatment

Project Name : Delta Airlines
Application: Waste Water Treatment



Power Generation

Project Name : OMPL Power Plant
Application: Waste Water Treatment



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