ATLANTA INDUSTRIES

TÜV SÜD ISO 9001

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# 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**



Ver. January 2025

Corzan
MATERIAL & PIPING SOLUTIONS

# 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

**CUSTOMER BENEFITS**

**High Heat Distortion Temperature**
Certified for use up to 200°F (93.3°C).

**Inherent Chemical Resistance**
Corrosion-free piping to maintain pressure ratings, flow rates and fluid purity, and to prevent costly repairs.

**Fire-related Safety Advantages**
Heat transfer coefficient is approximately 1/300th that of steel, and the material does not sustain burning and requires no flame to install.

**Relatively Low Material Cost**
Has successfully replaced and outlasted metals and other costly materials.

**Simple & Superior Installation**
Solvent welding fuses the piping & fitting at the molecular level, maintaining system performance.

**Certified Pressure Rating**
Pressure rated in accordance with ASTM D2837. Having a Hydrostatic Designs Basis (HDB) of 4000 psi at 72°F (23°C) and 1000 psi at 180°F (82.2°C)

## PROVEN PERFORMANCE FOR MULTIPLE INDUSTRIES

### CHEMICAL PROCESSING

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

**COMPATIBLE WITH**

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

**COMMON USES**

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

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## 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.

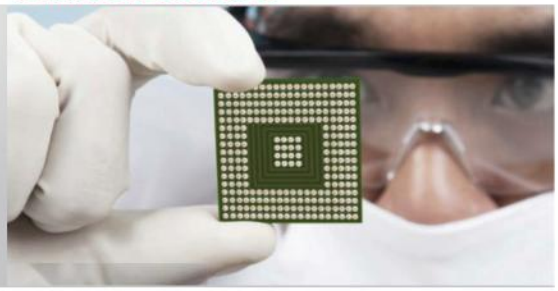
**COMPATIBLE WITH**

- Alum
- Caustic Soda
- Ferric Chloride
- Ferrous Chloride
- Hydrogen Sulfide
- Hypochloride
- 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 Plats)

## SEMICONDUCTORS



Meet the high purity standards for cleanrooms & eliminate corrosion concerns caused by aggresive 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 TREATMEMT

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

**COMPATIBLE WITH**

- Acids: Sulfuric, Nitric, Hydrocholric & 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

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# 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 |
| Ulitimate 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

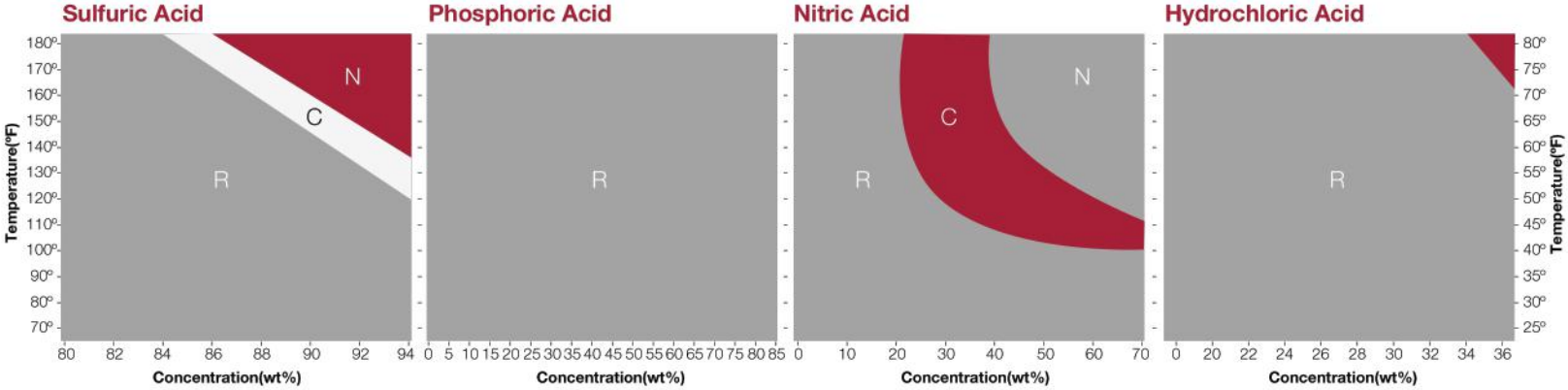
Corzan® is a member of the Corzan Industrial Systems family of CPVC pipe, fittings and process components that were incepted to simplify system design, maintenance & repair with one reliable material solution.

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

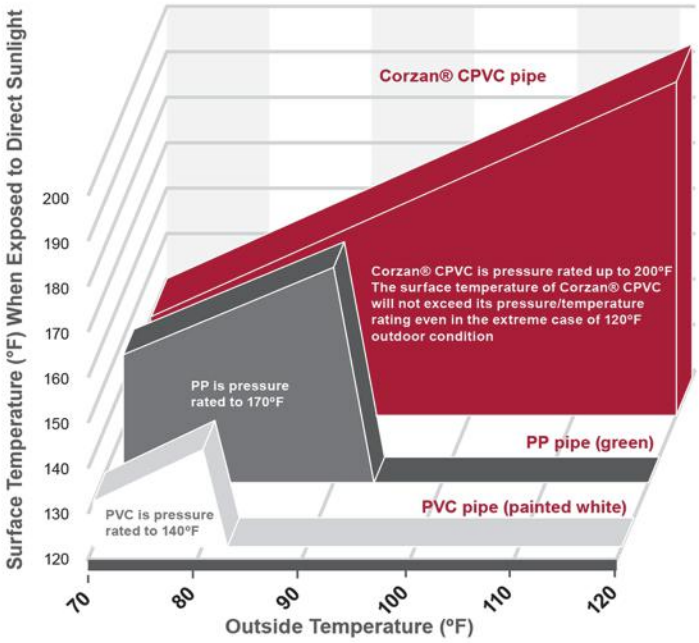
Cell Class - 24448
Higher Heat Distortion Tempeture
- Minimum HDT of 110°C for High Impact Pipe Compound vs. 100°C for standard CPVC
- High Impact CPVC pipe will keep its straight professional appearance where standard CPVC may sag or bend

# CORZAN CPVC CHEMICAL RESISTANCE

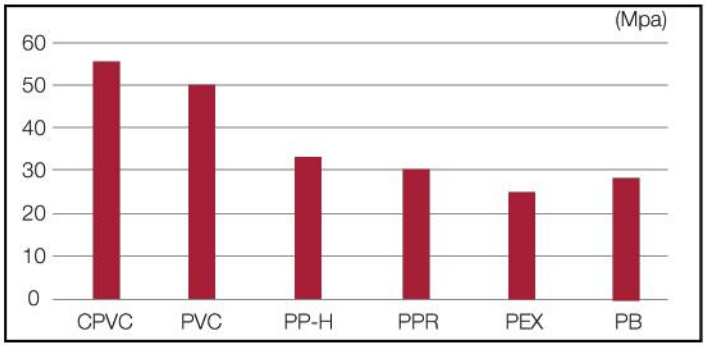

R = Recommended
C = Caution
N = Not Recommended

# WEATHERABILITY



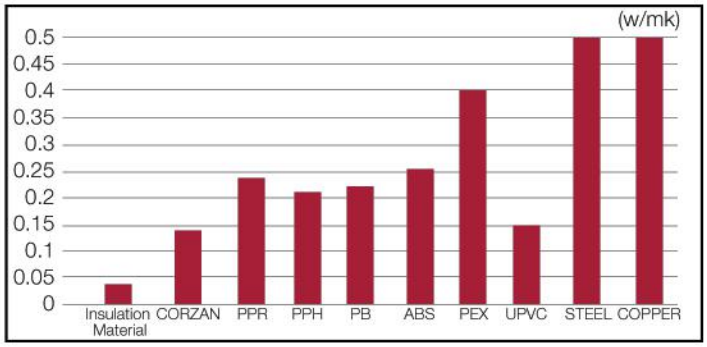

Over 50 years of experience with CPVC, including many long standing outdoor installations, demonstrates that Corzan® products will be able to withstand long-term exposure to the environment without significant adverse effects. In fact, Atlanta experience verifies that the pressure bearing capability 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



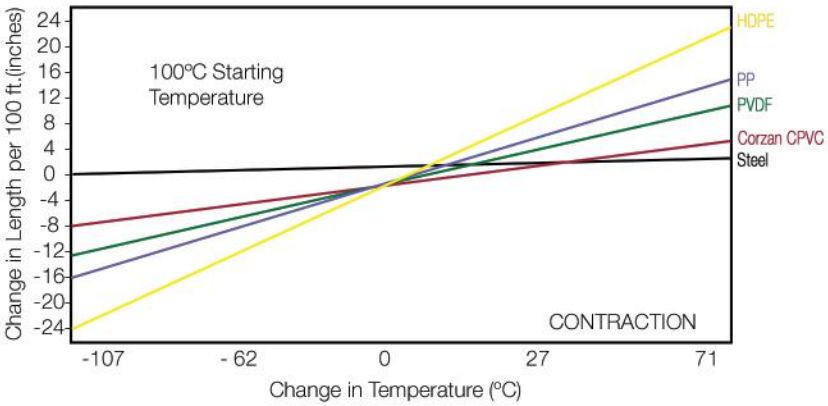

Corzan® CPVC has high tenacity compared to other thermolastic materials.

# 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.

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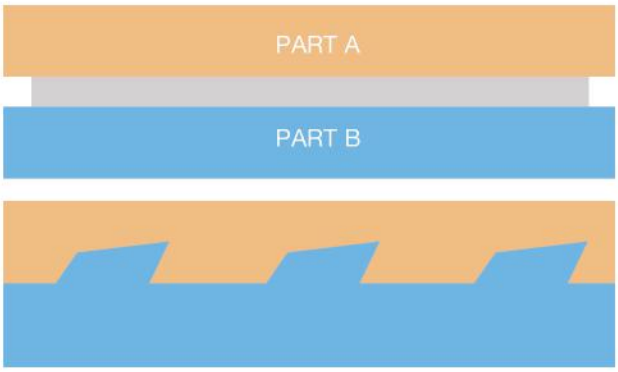
# INSTALLATION SOLVENT




### 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

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# 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 |
|---|---|
|  | 1/2<br>3/4<br>1<br>1-1/4<br>1-1/2<br>2<br>2-1/2<br>3<br>4<br>6 |

| Beamjoint | Nominal Size in |
|---|---|
|  | 3/4 x 1/2<br>1 x 3/4<br>1-1/4 x 1<br>1-1/2 x 1-1/4<br>2 x 1-1/2<br>2-1/2 x 2<br>3 x 2-1/2<br>4 x 3 |

| Flange | Nominal Size in |
|---|---|
|  | 1/2<br>3/4<br>1<br>1-1/4<br>1-1/2<br>2<br>2-1/2<br>3<br>4<br>6<br>8 |

## Threaded Fittings

| Female Threaded Adapter | Nominal Size in |
|---|---|
|  | 1/2<br>3/4<br>1<br>1-1/4<br>1-1/2<br>2 |

| Male Threaded Adapter | Nominal Size in |
|---|---|
|  | 1/2<br>3/4<br>1<br>1-1/4<br>1-1/2<br>2 |

| Union | Nominal Size in |
|---|---|
|  | 1/2<br>3/4<br>1<br>1-1/4<br>1-1/2<br>2 |

## Accessories

| CPVC CEMENT GREY - HEAVY BODIED | Size (pint) |
|---|---|
|  | 1<br>2 |

| PVC/CPVC PRIMER PURPLE - WATER THIN | Size (pint) |
|---|---|
|  | 1 |

| PIPE CUTTER | Size (mm) |
|---|---|
|  | 15-32 |

| Deburring Tool | Size (mm) |
|---|---|
|  | 12-60 |

## 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

ATLANTA INDUSTRIES

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