

Submittal Package ChemDrain[®] CPVC Chemical Waste Drain System

(Updated January 4, 2023)

You can't beat the system.[®]

SUBMITTAL PACKAGE

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SUBMITTAL FOR CHARLOTTE PIPE® CHEMDRAIN® CPVC CHEMICAL WASTE SCHEDULE 40 PIPE AND FITTINGS

Date: _____

Job Name: _____

Location: _____

Engineer: _____

Contractor: _____

► Scope:

This specification covers CPVC Schedule 40 pipe and fittings for chemical waste drain applications. ChemDrain is intended for use in non-pressure drain applications where the temperature will not exceed 220°F.

► Specification:

Pipe and fittings shall be manufactured as a system, be the product of one manufacturer and be manufactured in the United States. All pipe, fittings, and solvent cement shall be supplied together as a system, as Charlotte Pipe ChemDrain chemical waste system manufactured by Charlotte Pipe and Foundry. Pipe and fittings shall conform to the National Sanitation Foundation Standard (NSF) 14.

Special drainage systems for corrosive chemical or acid waste shall be manufactured by CPVC Type IV, Grade I, ASTM Cell Class 23447. All system components shall be certified by NSF International for use in chemical waste drainage systems and bear the mark NSF-cw. All system piping shall be Schedule 40 CPVC produced to the dimensional requirements of ASTM F 2618 and the manufacturer's specifications. All pipe and fittings shall be CPVC drainage patterns meeting the requirements of ASTM F 2618 and the manufacturer's specifications, as applicable.

► Installation:

Installation shall comply with the latest installation instructions published by Charlotte Pipe and Foundry and shall conform to all applicable plumbing, fire, and building code requirements. Buried pipe shall be installed in accordance with ASTM D 2321 and ASTM F 1668. Solvent welded joints shall be made with ChemDrain One-Step solvent cement conforming to ASTM F 493. The system shall be protected from items that are not compatible with CPVC compounds; materials like thread sealants, plasticized vinyl products, fire stopping devices, or other aggressive chemical agents. System shall be hydrostatically tested after installation. **WARNING!** Use of compressed air or gas in CPVC pipe or fittings can result in explosive failures and cause severe injury or death.

► Referenced Standards:

- ASTM C 1460 Standard Specification for Shielded Transition Couplings for use with Dissimilar DWV Pipe and Fittings Above Ground
- ASTM D 1784 Rigid CPVC Vinyl Compounds
- ASTM D 2321 Underground Installation of Thermoplastic Pipe (non-pressure applications)
- ASTM F 493 Solvent Cements for CPVC Pipe and Fittings
- ASTM F 1668 Procedures for Buried Plastic Pipe
- ASTM F 2618 Standard for Chlorinated Poly (Vinyl Chloride) Chemical Waste Drainage Systems
- NSF Standard 14 Plastic Piping Components and Related Materials



Quarter Bend

Cleanout Tee w/Plug

Sixteenth Bend

Wye

Sanitary Tee

Jar Trap with Tail Piece Adapter

Transitional Coupling

ChemDrain® CPVC Pipe

ChemDrain® CPVC Schedule 40 Pipe NSF

Type IV, Grade 1 ASTM F 2618

| CPVC SCHEDULE 40 (LIGHT GRAY) | | | PLAIN END | | CPVC 4120 | |
|-------------------------------|--------------|---------------|---------------|---------------|-----------------|------------------------|
| PART NO. | NOM. SIZE | UPC # 611942- | QTY. PER SKID | AVG. OD (IN.) | MIN. WALL (IN.) | WT. PER 100 FT. (LBS.) |
| AW 14015 | 1 1/2" x 10' | 10732 | 1650' | 1.900 | .145 | 55.3 |
| AW 14002 | 2" x 10' | 10733 | 1110' | 2.375 | .154 | 74.3 |
| AW 14003 | 3" x 10' | 10734 | 1130' | 3.500 | .216 | 154.2 |
| AW 14004 | 4" x 10' | 10735 | 670' | 4.500 | .237 | 219.6 |
| AW 14006 | 6" x 10' | 10736 | 330' | 6.625 | .280 | 386.1 |
| AW 14008 | 8" x 10' | 11363 | 140' | 8.625 | .322 | 581.1 |

One-Step CPVC Solvent Cement

Charlotte Pipe and Foundry Company • P.O. Box 35430 Charlotte, NC 28235 • (800) 438-6091 • www.charlottepipe.com

Product Certification



This is to certify that all Plastic Pipe and Fittings manufactured by Charlotte Pipe and Foundry Company are manufactured in the United States and conform to the following standards:

PVC SCH. 40 SOLID WALL PIPE

ASTM D 1784, ASTM D 1785, ASTM D 2665
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD 14 AND 61

PVC SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 4396, ASTM F 891
NSF STANDARD NO. 14

PVC SCH. 40 DWV FITTINGS

ASTM D 1784, ASTM D 2665, ASTM D 3311,
ASTM F1866
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14

PVC SDR-21 AND SDR-26 PRESSURE PIPE

ASTM D 1784, ASTM D 2241
NSF STANDARD NO. 14 AND 61

PVC SCH. 40 PRESSURE FITTINGS

ASTM D 1784, ASTM D 2466
NSF STANDARD 14 AND 61

PVC SCH. 40 WELL CASING PIPE

ASTM D 1784, ASTM F 480
NSF STANDARD NO. 14 AND 61

PVC SCH. 80 PIPE

ASTM D 1784, ASTM D 1785
NSF STANDARD NO. 14 AND 61

PVC SCH. 80 FITTINGS

ASTM D 1784, ASTM D 2467
ASTM D 2464 ASTM F 1970
NSF STANDARD NO. 14 AND 61

PVC SDR 35 SEWER MAIN PIPE

ASTM D 1784, ASTM D 3034, SDR 35
ASTM D 3212, ASTM F 477

PVC SEWER AND DRAIN PIPE

ASTM D 1784, ASTM D 2729

PVC THIN WALL PIPE & FITTINGS

ASTM D 1784, ASTM D 2949
NSF STANDARD NO. 14

CPVC FLOWGUARD GOLD® CTS PIPE & FITTINGS

ASTM D 1784, ASTM D 2846
FHA UM-61a
NSF STANDARD NO. 14 AND 61
CSA LISTED ON SPECIFIED ITEMS

CPVC CHEMDRAIN® SCH. 40 PIPE & FITTINGS

ASTM D 1784, ASTM F 2618
NSF STANDARD 14

ABS SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 3965, ASTM F 628
NSF STANDARD NO. 14

ABS PLUS® SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 3965, ASTM D 4396, ASTM F 1488

ABS SCH. 40 DWV FITTINGS

ASTM D 3965, ASTM D 2661, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-322b
NSF STANDARD NO. 14

CHARLOTTE PIPE AND FOUNDRY COMPANY

Product Certification

ChemDrain® CPVC chemical waste system is a complete system of pipe, fittings, solvent cement and accessories. Charlotte Pipe and Foundry CPVC pipe and fittings are listed for chemical waste systems by NSF International and bear the mark NSF-cw. For additional information log on to www.nsf.org.

Physical Properties of CPVC Material

| PROPERTY | CPVC 4120 | UNITS | STANDARD |
|---|-------------------------------------|------------------------|-----------------|
| Mechanical Properties | | | |
| Specific Gravity | 1.55 | | ASTM D 792 |
| Tensile Strength (73°F) | 7,000 | psi | ASTM D 638 |
| Modulus of Elasticity in Tension (73°F) | 360,000 | psi | ASTM D 638 |
| Flexural Strength (73°F) | 15,100 | psi | ASTM D 790 |
| Izod Impact Cell Class 23447 (notched at 73°F) Min. | 1.5 Fittings | ft lb/ in. | ASTM D 256 |
| Hardness (Durometer D) | – | | ASTM D 2240 |
| Hardness (Rockwell R) | 119 | | ASTM D 785 |
| Compressive Strength (73°F) | 10,100 | psi | ASTM D 695 |
| Hydrostatic Design Stress | 2,000 | psi | |
| Thermal Properties | | | |
| Heat Distortion Temperature at 264 psi Minimum | 212°F (Cell Class 23447) | degrees F | ASTM D 648 |
| Coefficient of Thermal Conductivity | .95 | BTU/ hr/sq ft/ °F/ in. | ASTM C 177 |
| Coefficient of Linear Expansion | 3.4 x 10 ⁻⁵ | in./ in./ °F | ASTM D 696 |
| Specific Heat | 0.34 | BTU/lb°F | ASTM D 2766 |
| Water Absorption (24 hrs at 73°F) | .03 | % weight gain | ASTM D 570 |
| Cell Classification | 23447-Pipe and Fittings | | ASTM D 1784 |
| Flammability | | | |
| Limiting Oxygen Index | 60% | | ASTM D2883 |
| Burning Rate | Self Extinguishing | | ASTM D 635 |
| Burning Class | V-0 | | UL 94 |
| Flame & Smoke Rating¹ | | | |
| | Flame Spread | 0 | CAN/ULC S 102.2 |
| | Smoke Developed ² | 8-22 | |
| Solvent Cement | Heavy Body, Mustard Yellow Color | | ASTM F 493 |

Above data is based upon information provided by the raw material manufacturers. It should be used only as a recommendation and not as a guarantee of performance.

¹ Based on test of physical product, as opposed to test of material only. Test was conducted on 1½" - 6" pipe.

² Results vary based on pipe diameter.

Pressure/Temperature Relationship

Maximum Operating Temperatures For Various Piping Systems (de-rate operating pressure at temperatures in excess of 73°F)

| Piping System | Max. Operating Temp. °F |
|----------------------------|-------------------------|
| ABS | 140 |
| PVC | 140 |
| CPVC - FlowGuard Gold® CTS | 180 |
| CPVC - Corzan® Sch. 80 | 200 |
| CPVC - ChemDrain®* | 220 |

* See the ChemDrain Technical Manual for more information on this product.

NOTICE: The maximum recommended temperature and de-rating of working pressure applies to both heat generated from fluid being distributed through pipe system and heat generated from sources external to the pipe system.

Temperature De-Rating For Schedule 40 & 80 PVC & CPVC

The operating pressure of PVC and CPVC pipe will be reduced as the operating temperature increases above 73° F. To calculate this reduction, multiply the operating pressures shown on the previous pages by the correction factors shown below:


| Operating Temperature (°F) | Correction Factors | |
|----------------------------|--------------------|------|
| | PVC | CPVC |
| 73 | 1.00 | 1.00 |
| 80 | .88 | 1.00 |
| 90 | .75 | .91 |
| 100 | .62 | .82 |
| 110 | .50 | .77 |
| 120 | .40 | .65 |
| 130 | .30 | .62 |
| 140 | .22 | .50 |
| 150 | NR | .47 |
| 160 | NR | .40 |
| 170 | NR | .32 |
| 180 | NR | .25 |
| 200 | NR | .20 |

For example, the operating pressure for 6" Schedule 80 PVC pipe is 280 psi. If the operating temperature is 140° F, the maximum operating pressure is now 62 psi (280 x .22).

Solvent Cements

| Pipe and Fitting System | Diameter (in.) | Solvent Cement Standard | Cement Color (common usage, check local code) | Description | Primer (common usage, check local code) |
|-------------------------|----------------|-------------------------|---|--------------|--|
| CPVC Sch. 40 ChemDrain® | 1¼ - 8 | ASTM F 493 | ChemDrain® Mustard Yellow (Required) | Heavy-Bodied | 6" and larger: IPS P-70 or Oatey Industrial Grade required |

NOTICE: Aerosol or spray-on type primers/solvent cements are not recommended. The practice of aggressively scouring the pipe and fittings with both primer and solvent cement is an integral part of the joining process. Not working the primer or solvent cement into the pipe or fitting could cause potential system failure or property damage.


WARNING

Primers and cements are extremely flammable and may be explosive. Do not store or use near open flame or elevated temperatures, which may result in injury or death.

- Solvent fumes created during the joining process are heavier than air and may be trapped in newly installed piping systems.
- Ignition of the solvent vapors caused by spark or flame may result in injury or death from explosion or fire.
- Read and obey all manufacturers' warnings and any instructions pertaining to primers and cements.
- Provide adequate ventilation to reduce fire hazard and to minimize inhalation of solvent vapors when working with cements, primers and new piping systems.

Applicator Types

| Nominal Pipe Size (in.) | Applicator Type | | |
|-------------------------|-----------------|-------------------|-------------------|
| | Dauber | Brush Width (in.) | Swab Length (in.) |
| ¼ | A | ½ | NR |
| ⅜ | A | ½ | NR |
| ½ | A | ½ | NR |
| ¾ | A | 1 | NR |
| 1 | A | 1 | NR |
| 1¼ | A | 1 | NR |
| 1½ | A | 1 - 1½ | NR |
| 2 | A | 1 - 1½ | NR |
| 2½ | NR | 1½ - 2 | NR |
| 3 | NR | 1½ - 2½ | NR |
| 4 | NR | 2 - 3 | 3 |
| 6 | NR | 3 - 5 | 3 |
| 8 | NR | 4 - 6 | 7 |
| 10 | NR | 6 - 8 | 7 |
| 12 | NR | 6 - 8 | 7 |
| 14 | NR | 7 - 8 | 7 |
| 16 | NR | 8+ | 8 |

A = Acceptable

NR = Not Recommended

NOTICE: Rollers are not recommended.

ChemDrain[®] CPVC Pipe

ChemDrain[®] CPVC Schedule 40 Pipe, Type IV, Grade 1



ASTM F 2618

| CPVC SCHEDULE 40 (LIGHT GRAY) | | | PLAIN END | | CPVC 4120 | |
|-------------------------------|--------------|------------------|------------------|------------------|-----------------------|------------------------------|
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| AW 14004 | 4" x 10' | 10735 | 670' | 4.500 | .237 | 219.6 |
| AW 14006 | 6" x 10' | 10736 | 330' | 6.625 | .280 | 386.1 |
| AW 14008 | 8" x 10' | 11363 | 140' | 8.625 | .322 | 581.1 |

NOTE: Full skids of pipe are polyethylene wrapped for cleanliness and UV protection.
NSF Listed. Meets All Requirements of ASTM F 2618.

All products manufactured by Charlotte Pipe and Foundry Company are proudly made in the U.S.A.



⚠ WARNING

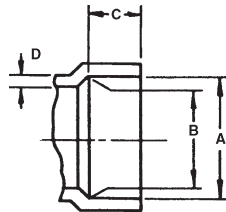
Testing with or use of compressed air or gas in ABS / CPVC / PVC pipe or fittings can result in explosive failures and cause severe injury or death.

- NEVER test with or transport/store compressed air or gas in ABS / CPVC / PVC pipe or fittings.
- NEVER test ABS / CPVC / PVC pipe or fittings with compressed air or gas, or air over water boosters.
- ONLY use ABS / CPVC / PVC pipe or fittings for water or approved chemicals.
- Refer to warnings on PPFA's website and ASTM D 1785.

AIR/GAS

ChemDrain® CPVC Fittings

HUB DIMENSIONS



CPVC

| SIZE | A | B | C | D |
|------|-------|-------|-------|------|
| 1½ | 1.915 | 1.895 | .687 | .156 |
| 2 | 2.390 | 2.370 | .750 | .156 |
| 3 | 3.520 | 3.495 | 1.500 | .218 |
| 4 | 4.520 | 4.495 | 1.750 | .250 |
| 6 | 6.647 | 6.614 | 3.000 | .281 |
| 8 | 8.655 | 8.610 | 4.000 | .322 |

PART NO. AW 95C

Transition Coupling - ChemDrain CPVC to Steel, Cast Iron, Plain-end Glass or Any Other Schedule 40 or 80 IPS Size

Plastic or Metallic Pipe
(300 Series Stainless Steel with Fluoroelastomer Gasket)



| SIZE | SHIELD WIDTH | NUMBER OF CLAMPS |
|------|--------------|------------------|
| 1½ | 2 ⅛ | 2 |
| 2 | 2 ⅛ | 2 |
| 3 | 2 ⅛ | 2 |
| 4 | 2 ⅛ | 2 |
| 6 | 3 | 4 |
| 8 | 4 | 4 |

PART NO. AW 96C

Transition Coupling - ChemDrain CPVC to Plain-end High-silicon Iron
(300 Series Stainless Steel with Fluoroelastomer Gasket)



| SIZE | SHIELD WIDTH | NUMBER OF CLAMPS |
|------|--------------|------------------|
| 2 | 2 ⅛ | 2 |
| 3 | 2 ⅛ | 2 |
| 4 | 2 ⅛ | 2 |

PART NO. AW 1C

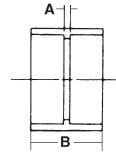
ChemDrain Low-VOC Solvent Cement



PART NO. AW 100C

Coupling
HUB X HUB

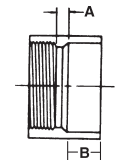
| SIZE | A | B |
|------|-------|-------|
| 1½ | ⅛ | 19/16 |
| 2 | 15/64 | 1¾ |
| 3 | 3/16 | 33/16 |
| 4 | ¼ | 3¾ |
| 6 | ¼ | 6¼ |
| 8 | ¼ | 8¼ |



PART NO. AW 101C

Female Adapter
FPT X HUB

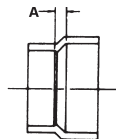
| SIZE | A | B |
|------|-------|-----|
| 1½ | ¼ | ¾ |
| 2 | ¼ | 7/8 |
| 3 | 5/16 | 1½ |
| 4 | 11/32 | 1¾ |
| 6 | ¼ | 3 |



PART NO. AW 102C

Pipe Increaser-Reducer
HUB X HUB

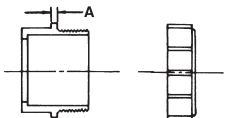
| SIZE | A |
|--------|-------|
| 1½ X 2 | 17/32 |
| 1½ X 3 | 13/32 |
| 2 X 3 | 7/8 |
| 2 X 4 | 13/8 |
| 3 X 4 | 15/16 |
| 3 X 6 | 2 |
| 4 X 6 | 1¾ |



PART NO. AW 103PC

Trap Adapter-Male
SPIGOT X SLIP WITH PLASTIC NUT

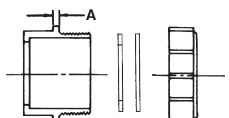
| SIZE | A |
|------|------|
| 1½ | 3/16 |



PART NO. AW 103RC

Trap Adapter-Male
with 1½" Plastic Nut and Washer
SPIGOT X SLIP WITH PLASTIC NUT

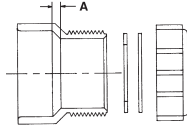
| SIZE | A |
|------|------|
| 1½ | 3/16 |



PART NO. AW 104RC

Trap Adapter-Female
with 1 1/2" Plastic Nut and Washer
HUB X SLIP WITH PLASTIC NUT

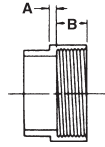
| SIZE | A |
|-------|------|
| 1 1/2 | 3/16 |



PART NO. AW 105XC

Fitting Cleanout Adapter
with Cleanout Plug (See AW 106C Dimensions)
SPIGOT X FPT

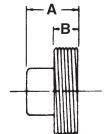
| SIZE | A | B |
|-------|------|--------|
| 1 1/2 | 5/32 | 5/8 |
| 2 | 5/32 | 5/8 |
| 3 | 7/32 | 3/4 |
| 4 | 1/4 | 7/8 |
| 6 | 5/16 | 1 7/16 |



PART NO. AW 106C

Cleanout Plug
MPT

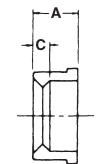
| SIZE | A | B |
|-------|-------|-----|
| 1 1/2 | 1 3/8 | 5/8 |
| 2 | 1 3/8 | 5/8 |
| 3 | 1 3/4 | 3/4 |
| 4 | 1 7/8 | 7/8 |
| 6 | 2 | 1 |



PART NO. AW 107C

Flush Bushing
SPIGOT X HUB

| SIZE | A | C |
|-----------|---------|---------|
| 2 x 1 1/2 | 1 1/16 | 5/16 |
| 3 x 1 1/2 | 1 3/4 | 1 |
| 3 x 2 | 1 3/4 | 7/8 |
| 4 x 2 | 2 | 1 1/8 |
| 4 x 3* | 1 51/64 | 1/4 |
| 6 x 3 | 3 13/32 | 1 57/64 |
| 6 x 4 | 3 1/2 | 1 3/4 |
| 8 x 4 | 4 5/8 | 2 7/8 |
| 8 x 6 | 4 9/16 | 1 5/8 |

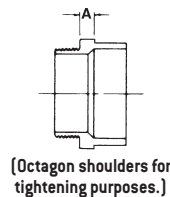


* 4 x 3 differs slightly in appearance

PART NO. AW 109C

Male Adapter
MPT X HUB
(Note: Not a trap adapter. Will not accept a tail piece.)

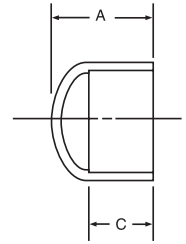
| SIZE | A |
|-------|------|
| 1 1/2 | 3/16 |
| 2 | 3/16 |
| 3 | 3/8 |
| 4 | 3/8 |



PART NO. AW 116C

Cap
SOCKET

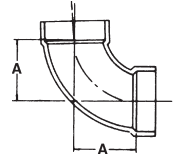
| SIZE | A | C |
|-------|---------|---------|
| 1 1/2 | 1 15/16 | 1 5/16 |
| 2 | 2 5/32 | 1 3/8 |
| 3 | 2 15/16 | 1 29/32 |
| 4 | 3 1/8 | 2 1/32 |



PART NO. AW 300C

1/4 Bend
(Sanitary 90° Ell)
ALL HUB

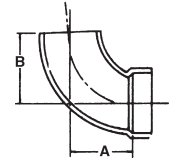
| SIZE | A |
|-------|--------|
| 1 1/2 | 1 3/4 |
| 2 | 2 5/16 |
| 3 | 3 1/16 |
| 4 | 3 7/8 |
| 6 | 5 |
| 8 | 6 |



PART NO. AW 302C

1/4 Bend, Street
(Sanitary 90° Street Ell)
SPIGOT X HUB

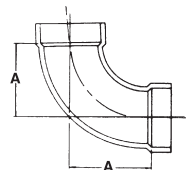
| SIZE | A | B |
|-------|--------|--------|
| 1 1/2 | 1 3/4 | 2 1/2 |
| 2 | 2 5/16 | 3 3/16 |
| 3 | 3 1/16 | 4 9/16 |
| 4 | 3 7/8 | 5 5/8 |
| 6 | 5 3/16 | 8 1/8 |



PART NO. AW 304C

Long Sweep 1/4 Bend
HUB X HUB

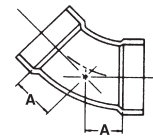
| SIZE | A |
|-------|---------|
| 1 1/2 | 2 3/4 |
| 2 | 3 1/4 |
| 3 | 4 1/16 |
| 4 | 4 15/16 |



PART NO. AW 321C

1/8 Bend
(45° Ell)
HUB X HUB

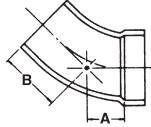
| SIZE | A |
|-------|--------|
| 1 1/2 | 1 1/8 |
| 2 | 1 1/2 |
| 3 | 1 3/4 |
| 4 | 2 3/16 |
| 6 | 2 1/16 |
| 8 | 2 1/16 |



PART NO. AW 323C

1/8 Bend, Street
(45° Street Ell)
SPIGOT X HUB

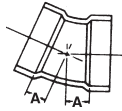
| SIZE | A | B |
|------|----|----|
| 1½ | 1⅛ | 1⅞ |
| 2 | 1½ | 2⅜ |
| 3 | 1¾ | 3¼ |
| 4 | 2⅜ | 3⅝ |
| 6 | 2⅞ | 5⅝ |
| 8 | 2 | 6⅝ |



PART NO. AW 324C

1/16 Bend
(22½° Ell)
HUB X HUB

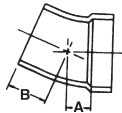
| SIZE | A |
|------|----|
| 1½ | ½ |
| 2 | 1⅛ |
| 3 | 1⅜ |
| 4 | 1 |



PART NO. AW 326C

1/16 Bend, Street
(22½° Street Ell)
SPIGOT X HUB

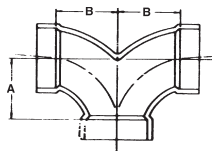
| SIZE | A | B |
|------|----|----|
| 1½ | ½ | 1¼ |
| 2 | 1⅛ | 1½ |
| 3 | 1⅜ | 2⅝ |
| 4 | 1 | 2¾ |



PART NO. AW 327C

Double 1/4 Bend
ALL HUB

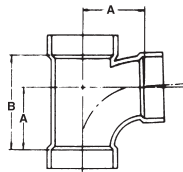
| SIZE | A | B |
|------|----|----|
| 1½ | 1¾ | 1¾ |
| 2 | 2⅝ | 2⅝ |
| 3 | 3⅞ | 3⅞ |



PART NO. AW 400C

Sanitary Tee
ALL HUB

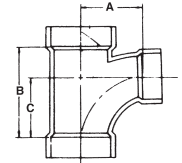
| SIZE | A | B |
|------|----|-----|
| 1½ | 1¾ | 2¾ |
| 2 | 2⅝ | 3⅞ |
| 3 | 3⅞ | 4⅞ |
| 4 | 3⅞ | 6⅞ |
| 6 | 5 | 8½ |
| 8 | 6 | 10½ |



PART NO. AW 401C

Sanitary Tee, Reducing

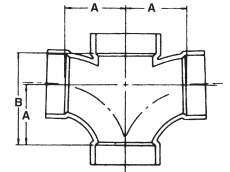
| SIZE | ALL HUB | | |
|-------------|---------|----|----|
| | A | B | C |
| 2 x 1½ x 1½ | 2⅜ | 3⅞ | 1⅝ |
| 2 x 1½ x 2 | 2⅝ | 3⅞ | 2⅝ |
| 2 x 2 x 1½ | 2⅜ | 3⅞ | 1⅝ |
| 3 x 3 x 1½ | 2⅞ | 2⅞ | 1¾ |
| 3 x 3 x 2 | 2⅞ | 3⅝ | 2⅞ |
| 4 x 4 x 2 | 3⅝ | 3⅝ | 2⅞ |
| 4 x 4 x 3 | 3⅞ | 4¾ | 3 |
| 6 x 6 x 4 | 4⅞ | 6⅝ | 3⅝ |



PART NO. AW 428C

Double Sanitary Tee
(Sanitary Cross)
ALL HUB

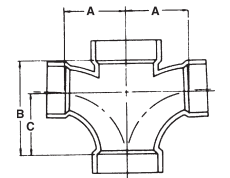
| SIZE | A | B |
|------|----|----|
| 1½ | 1¾ | 2¾ |
| 2 | 2⅝ | 3⅞ |
| 3 | 3⅞ | 4⅞ |
| 4 | 3⅞ | 6⅞ |



PART NO. AW 429C

Double Sanitary Tee, Reducing
(Sanitary Cross)
ALL HUB

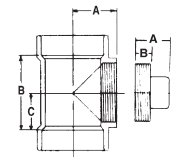
| SIZE | A | B | C |
|-----------------|----|----|----|
| 2 x 2 x 1½ x 1½ | 2⅜ | 3⅞ | 1⅝ |
| 3 x 3 x 2 x 2 | 2⅞ | 3⅝ | 2⅞ |



PART NO. AW 444XC

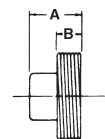
Cleanout Tee
with Cleanout Plug
HUB X HUB X FPT

| SIZE | A | B | C |
|------|----|----|----|
| 1½ | 1⅝ | 2⅜ | 1⅞ |
| 2 | 2¼ | 3 | 1½ |
| 3 | 2⅞ | 3⅞ | 1⅝ |
| 4 | 3⅞ | 5⅞ | 2⅞ |
| 6 | 4 | 8 | 4 |



Cleanout Plug
MPT

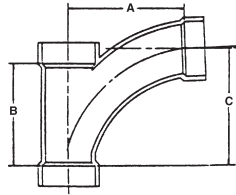
| SIZE | A | B |
|------|----|---|
| 1½ | 1⅞ | ⅝ |
| 2 | 1⅞ | ⅝ |
| 3 | 1¾ | ¾ |
| 4 | 1⅞ | ⅞ |
| 6 | 2 | 1 |



PART NO. AW 501C

**Combination Wye and 1/8 Bend
(One Piece)
ALL HUB**

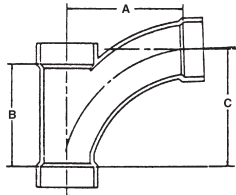
| SIZE | A | B | C |
|------|--------------------------------|--------------------------------|---------------------------------|
| 1½ | 3 ⁵ / ₁₆ | 3½ | 3 ¹⁵ / ₁₆ |
| 2 | 5 ¹ / ₈ | 4 ⁷ / ₁₆ | 5 ¹ / ₈ |
| 3 | 7 ⁹ / ₁₆ | 6½ | 7 ⁹ / ₁₆ |
| 4 | 10 | 8½ | 10 |



PART NO. AW 502C

**Combination Wye and 1/8 Bend,
Reducing
(One Piece)
ALL HUB**

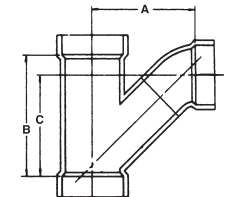
| SIZE | A | B | C |
|------------|---------------------------------|--------------------------------|---------------------------------|
| 2 x 2 x 1½ | 4 ³ / ₁₆ | 3½ | 3 ¹⁵ / ₁₆ |
| 3 x 3 x 1½ | 4¾ | 3½ | 3 ¹⁵ / ₁₆ |
| 3 x 3 x 2 | 5 ¹¹ / ₁₆ | 4 ⁷ / ₁₆ | 5 ¹ / ₈ |
| 4 x 4 x 2 | 6 ¹ / ₈ | 4½ | 5 ¹ / ₈ |
| 4 x 4 x 3 | 8 ¹ / ₁₆ | 6½ | 7 ⁹ / ₁₆ |



PART NO. AW 503C

**Combination Wye and 1/8 Bend
ALL HUB**

| SIZE | A | B | C |
|------|----------------------------------|---------------------------------|----------------------------------|
| 6** | 11 ¹⁵ / ₃₂ | 10 ⁵ / ₃₂ | 11 ⁹ / ₆₄ |
| 8** | 14 ¹⁹ / ₃₂ | 14 ¹ / ₃₂ | 14 ²³ / ₃₂ |

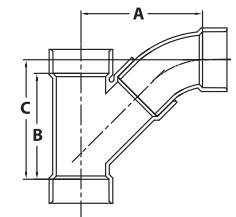


** Two pieces

PART NO. AW 504C

**Combination Wye and 1/8 Bend,
Reducing
ALL HUB**

| SIZE | A | B | C |
|-------------|---------------------------------|--------------------------------|---------------------------------|
| 6 x 6 x 3** | 9 ³ / ₈ | 7 ⁵ / ₆₄ | 7 ¹⁹ / ₃₂ |
| 6 x 6 x 4* | 8 ¹⁵ / ₁₆ | 8 ⁵ / ₈ | 7 ¹³ / ₁₆ |



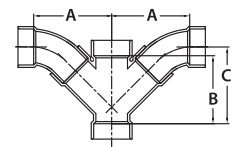
* One piece short pattern

** Two pieces

PART NO. AW 507C

**Double Combination Wye and 1/8 Bend
ALL HUB**

| SIZE | A | B | C |
|------------|---------------------------------|--------------------------------|---------------------------------|
| 2† | 5 ¹⁷ / ₆₄ | 5 ³ / ₈ | 4 ²⁷ / ₆₄ |
| 2x2x1½x1½† | 4 ⁵ / ₃₂ | 4 ⁷ / ₃₂ | 3 ⁶¹ / ₆₄ |
| 3† | 6¼ | 7 ⁵ / ₈ | 6 ⁵ / ₁₆ |
| 3x3x2x2† | 6 ⁵ / ₆₄ | 5 ⁵ / ₃₂ | 5 ¹¹ / ₆₄ |
| 4† | 9 ¹³ / ₃₂ | 8 ³ / ₁₆ | 9 ⁵ / ₃₂ |
| 4x4x2x2† | 7 ⁵ / ₁₆ | 5 | 6 |
| 4x4x3x3† | 8 ¹⁹ / ₆₄ | 6 ⁹ / ₁₆ | 7 ¹⁹ / ₃₂ |

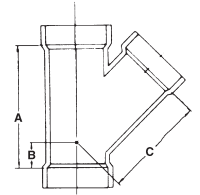


† Three pieces.

PART NO. AW 600C

**Wye
(45° Wye)
ALL HUB**

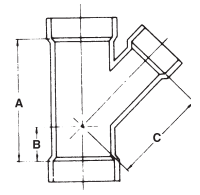
| SIZE | A | B | C |
|------|---------------------------------|-------------------------------|--------------------------------|
| 1½ | 4 | 1 ¹ / ₈ | 2 ⁷ / ₈ |
| 2 | 5 | 1 ³ / ₈ | 3 ⁵ / ₈ |
| 3 | 6 ⁵ / ₈ | 1 ⁵ / ₈ | 5 |
| 4 | 8¼ | 1 ⁷ / ₈ | 6 ³ / ₈ |
| 6 | 10 ³ / ₁₆ | 1¾ | 8 ⁷ / ₁₆ |
| 8 | 14 ¹ / ₈ | 2 ³ / ₈ | 11¾ |



PART NO. AW 601C

**Wye, Reducing
(45° Wye)
ALL HUB**

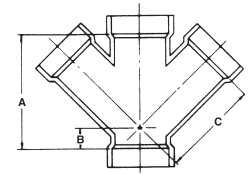
| SIZE | A | B | C |
|------------|--------------------------------|--------------------------------|---------------------------------|
| 2 x 2 x 1½ | 4½ | 1 | 3 ⁷ / ₁₆ |
| 3 x 3 x 1½ | 4¼ | ½ | 4 ⁵ / ₁₆ |
| 3 x 3 x 2 | 5 | 7 ⁷ / ₈ | 4 ⁵ / ₈ |
| 4 x 4 x 2 | 5 ¹ / ₁₆ | ¾ | 5 ⁹ / ₁₆ |
| 4 x 4 x 3 | 6 ⁵ / ₈ | 1 ¹ / ₁₆ | 6 |
| 6 x 6 x 4 | 6 ⁷ / ₈ | ¾ | 7½ |
| 8 x 8 x 4 | 10½ | 1 | 11 ⁹ / ₁₆ |
| 8 x 8 x 6 | 10½ | 1 | 9 ¹³ / ₁₆ |



PART NO. AW 611C

**Double Wye
(Double 45° Wye)
ALL HUB**

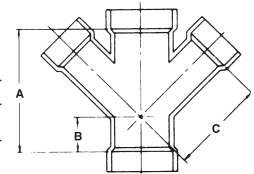
| SIZE | A | B | C |
|------|---------------------------------|-------------------------------|--------------------------------|
| 1½ | 4 | 1 ¹ / ₈ | 2 ⁷ / ₈ |
| 2 | 5 | 1 ³ / ₈ | 3 ⁵ / ₈ |
| 3 | 6 ⁵ / ₈ | 1 ⁵ / ₈ | 5 |
| 4 | 8¼ | 1 ⁷ / ₈ | 6 ³ / ₈ |
| 6 | 10 ³ / ₁₆ | 1¾ | 8 ⁷ / ₁₆ |



PART NO. AW 612C

**Double Wye, Reducing
(Double 45° Wye)
ALL HUB**

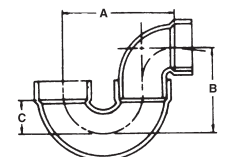
| SIZE | A | B | C |
|-----------------|-------------------------------|--------------------------------|--------------------------------|
| 2 x 2 x 1½ x 1½ | 4 ³ / ₈ | 1 ¹ / ₁₆ | 3 ⁷ / ₁₆ |
| 3 x 3 x 2 x 2 | 5 | 7 ⁷ / ₈ | 4 ⁵ / ₈ |
| 4 x 4 x 3 x 3 | 6 ⁵ / ₈ | 1 ¹ / ₁₆ | 6 |



PART NO. AW 706XC

**P-Trap with Solvent Weld Joint
HUB X HUB**

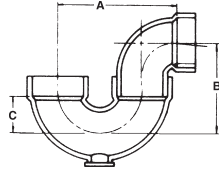
| SIZE | A | B | C |
|------|---------------------------------|---------------------------------|---------------------------------|
| 1½ | 4 ⁵ / ₈ | 3 ¹⁵ / ₁₆ | 1¾ |
| 2 | 6 ¹³ / ₁₆ | 4 ⁷ / ₈ | 2 ³ / ₈ |
| 3 | 8 ¹⁵ / ₁₆ | 6 ¹⁵ / ₁₆ | 3 ¹ / ₁₆ |
| 4 | 11 ¹ / ₁₆ | 8 ⁷ / ₁₆ | 3 ¹¹ / ₁₆ |



PART NO. AW 707XC

**P-Trap with Cleanout,
Solvent Weld Joint**
HUB X HUB

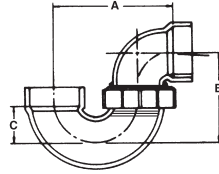
| SIZE | A | B | C |
|------|-------------------------------|---------------------------------|-------------------------------|
| 1½ | 4 ⁵ / ₈ | 3 ¹⁵ / ₁₆ | 1 ³ / ₄ |



PART NO. AW 708PC

P-Trap with Union
HUB X HUB WITH PLASTIC NUT

| SIZE | A | B | C |
|------|---------------------------------|---------------------------------|-------------------------------|
| 1½ | 4 ⁵ / ₈ | 3 ¹⁵ / ₁₆ | 1 ³ / ₄ |
| 2 | 6 ¹³ / ₁₆ | 4 ⁷ / ₈ | 2 ³ / ₈ |

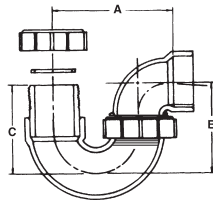


PART NO. AW 711PC

L.A. Pattern P-Trap with Union
SLIP X HUB WITH PLASTIC NUTS

| SIZE | A | B | C |
|------|-------------------------------|---------------------------------|-------------------------------|
| 1½ | 4 ⁵ / ₈ | 3 ¹⁵ / ₁₆ | 3 ³ / ₄ |

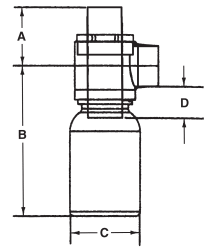
§ Nut is sized to fit tubular sink tailpieces.



PART NO. AW 712C

Jar Trap
SLIP X HUB

| SIZE | A | B | C | D |
|------|-------------------------------|-------------------------------|-------------------------------|---|
| 1½ | 3 ¹ / ₈ | 8 ¹ / ₄ | 3 ⁷ / ₈ | 2 |

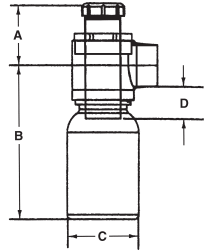


PART NO. AW 712PC

Jar Trap with Tail Piece Adaptor
SLIP X HUB WITH PLASTIC NUTS

| SIZE | A | B | C | D |
|------|--------------------------------|--------------------------------|-------------------------------|---|
| 1½ | 3 ⁵ / ₁₆ | 8 ⁵ / ₃₂ | 3 ⁷ / ₈ | 2 |

§ Nut is sized to fit tubular sink tailpieces.



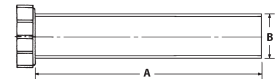
PART NO. AW 1512PC

CPVC Tail Piece with Nut ‡
(May be cut to length)

Supplied with a Fluoroelastomer Gasket

| SIZE | A | B |
|---------|----|----|
| 1½ x 12 | 12 | 1½ |

‡ Tubular O.D.



Chemical Resistance

The following table lists the chemical resistance suitability of CPVC ChemDrain thermoplastic piping materials and Fluoroelastomer (FKM), a commonly used seal material. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This information is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com.

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R = Recommended •• = No Data

| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|----------------------------------|---|--|
| Acetaldehyde, pure | NR | NR |
| Acetic Acid | R | R |
| Acetic Anhydride | R | NR |
| Acetone, <20% | R | R |
| Acetone, pure | NR | NR |
| Acetonitrile, pure | R | NR |
| Acetyl Chloride | R | R |
| Acetophenone | NR | NR |
| Acrylic Acid, pure | R | NR |
| Acrylonitrile, pure | R | NR |
| Adipic Acid | R | R |
| Alcohol, Allyl, pure | R | NR |
| Alcohol, Amyl, up to 1% | R | R |
| Alcohol, Amyl, >1% | NR | R |
| Alcohol, Benzyl | R | R |
| Alcohol, Butyl (Butanol) | R | R |
| Alcohol, Diacetone | R | NR |
| Alcohol, Ethyl (Ethanol) | R | R |
| Alcohol, Hexyl (Hexanol) | R | R |
| Alcohol, Isopropyl (Isopropanol) | R | R |
| Alcohol, Methyl (Methanol) | R | NR |
| Alcohol, Octyl (1-n-Octanol) | R | R |
| Alcohol, Propyl (Propanol) | R | R |
| Allyl Alcohol, pure | R | NR |
| Allyl Chloride | NR | R |
| Alum | R | R |
| Aluminum Acetate | R | NR |
| Aluminum Chloride | R | R |
| Aluminum Fluoride | R | R |
| Aluminum Hydroxide | R | R |
| Aluminum Nitrate | R | R |
| Aluminum Sulfate | R | R |
| Amines | C | NR |
| Ammonia | R | NR |
| Ammonium Acetate | R | NR |

CAUTION

The chemical resistance table shown within this manual is for CPVC in a typical laboratory drainage environment. To reduce the risk of system failure, always evaluate the chemical resistance information and project specific factors.

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|---|---|--|
| Ammonium Benzoate | R | •• |
| Ammonium Bifluoride | R | R |
| Ammonium Carbonate | R | R |
| Ammonium Chloride | R | R |
| Ammonium Citrate | R | •• |
| Ammonium Dichromate | R | •• |
| Ammonium Fluoride | R | R |
| Ammonium Hydroxide | R | NR |
| Ammonium Metaphosphate | R | •• |
| Ammonium Nitrate | R | R |
| Ammonium Persulfate | R | R |
| Ammonium Phosphate | R | R |
| Ammonium Sulfamate | R | NR |
| Ammonium Sulfate | R | R |
| Ammonium Sulfide | R | R |
| Ammonium Thiocyanate | R | R |
| Ammonium Tartrate | R | •• |
| Amyl Acetate | NR | NR |
| Amyl Alcohol, up to 1% | R | R |
| Amyl Alcohol, >1% | NR | R |
| Amyl Chloride | C | R |
| Aniline | NR | R |
| Aniline Hydrochloride | NR | R |
| Anthraquinone | NR | NR |
| Anti-Freeze: See Alcohols, Glycols and Glycerin | | |
| Antimony Trichloride, aqueous | R | R |
| Aqua Regia | R | R |
| Arsenic Acid | R | R |
| Aryl Sulfonic Acid | R | •• |
| Asphalt | NR | R |
| Barium Carbonate | R | R |
| Barium Chloride | R | R |
| Barium Hydroxide | R | R |
| Barium Nitrate | R | R |
| Barium Sulfate | R | R |

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Chemical Resistance

The following table lists the chemical resistance suitability of CPVC ChemDrain thermoplastic piping materials and Fluoroelastomer (FKM), a commonly used seal material. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This information is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com.

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|-----------------------|---|--|
| Barium Sulfide | R | R |
| Beer | R | R |
| Beet Sugar Liquors | R | R |
| Benzaldehyde | NR | NR |
| Benzene | NR | R |
| Benzene Sulfonic Acid | R | R |
| Benzoic Acid, aqueous | R | R |
| Benzyl Alcohol | R | R |
| Benzyl Chloride | NR | R |
| Bismuth Carbonate | R | R |
| Black Liquor | R | R |
| Bleach | R | R |
| Blood | R | R |
| Borax | R | R |
| Boric Acid | R | R |
| Brine Acid | R | •• |
| Bromic Acid | R | •• |
| Bromine, liquid | R | R |
| Bromine, aqueous | R | R |
| Bromobenzene | NR | R |
| Bromotoluene | NR | •• |
| Butanol, pure | R | R |
| Butyl Acetate | NR | NR |
| Butyl Carbitol | R | R |
| Butyl Cellosolve | NR | NR |
| Butyl Phenol | NR | •• |
| Butyric Acid, >1% | NR | NR |
| Cadmium Acetate | R | NR |
| Cadmium Chloride | R | •• |
| Cadmium Cyanide | R | R |
| Cadmium Sulfate | R | •• |
| Calcium Acetate | R | NR |
| Calcium Bisulfide | R | R |
| Calcium Bisulfite | R | R |
| Calcium Carbonate | R | R |

CAUTION

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R = Recommended •• = No Data

| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|---------------------------------|---|--|
| Calcium Chlorate | R | R |
| Calcium Chloride | R | R |
| Calcium Hydroxide | R | R |
| Calcium Hypochlorite | R | R |
| Calcium Nitrate | R | R |
| Calcium Oxide | R | R |
| Calcium Sulfate | R | R |
| Cane Sugar Liquors | R | R |
| Caprolactam, aqueous | R | NR |
| Caprolactone, aqueous | R | NR |
| Carbitol | R | R |
| Carbolic Acid, pure | R | R |
| Carbon Disulfide | NR | R |
| Carbon Tetrachloride | NR | R |
| Carbonic Acid | R | R |
| Castor Oil | NR | R |
| Caustic Potash | R | R |
| Caustic Soda (Sodium Hydroxide) | R | NR |
| Cellosolve | NR | NR |
| Cellosolve Acetate | NR | NR |
| Chloramine, aqueous | R | NR |
| Chloric Acid | R | •• |
| Chlorine, aqueous | R | R |
| Chlorine Dioxide, aqueous | R | R |
| Chloroacetic Acid, pure | R | NR |
| Chlorobenzene | NR | R |
| Chloroform | NR | R |
| Chromic Acid, 40% | R | R |
| Chromium Nitrate | R | •• |
| Citric Acid | R | R |
| Citrus Oils | R | •• |
| Coconut Oil | NR | R |
| Coffee | R | •• |
| Copper Acetate | R | NR |
| Copper Carbonate | R | R |

See www.charlottepipe.com for most current data.

Chemical Resistance

The following table lists the chemical resistance suitability of CPVC ChemDrain thermoplastic piping materials and Fluoroelastomer (FKM), a commonly used seal material. The information shown is based upon laboratory tests conducted by the manufacturers of the materials, and it is intended to provide a general guideline on the resistance of these materials to various chemicals. **NOTICE:** This information is not a guarantee, and any piping systems using products made of these materials should be tested under actual service conditions to determine their suitability for a particular purpose. See website for most current data: www.charlottepipe.com.

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R = Recommended • • = No Data

| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|-------------------------|---|--|
| Copper Chloride | R | R |
| Copper Cyanide | R | R |
| Copper Fluoride | R | • • |
| Copper Nitrate | R | R |
| Copper Sulfate | R | R |
| Corn Oil | NR | R |
| Corn Syrup | R | R |
| Cottonseed Oil | NR | R |
| Creosote | NR | R |
| Cresol | NR | R |
| Crotonaldehyde | R | NR |
| Cumene | NR | R |
| Cupric Fluoride | R | R |
| Cupric Sulfate | R | R |
| Cuprous Chloride | R | • • |
| Cyclohexane | R | R |
| Cyclohexanol | R | R |
| Cyclohexanone | R | NR |
| Decahydronaphthalene | R | • • |
| Detergents | R | R |
| Dextrin | R | R |
| Dextrose | R | R |
| Diacetone Alcohol | R | NR |
| Dibutoxyethyl Phthalate | NR | NR |
| Dibutyl Ether | NR | NR |
| Dibutyl Phthalate | NR | NR |
| Dibutyl Sebacate | NR | NR |
| Dichlorobenzene | NR | R |
| Dichloroethylene | NR | NR |
| Diesel Fuel | NR | R |
| Diethylamine | NR | NR |
| Diethyl Cellosolve | R | NR |
| Diethyl Ether | NR | NR |
| Diglycolic Acid | R | • • |
| Dill Oil | C | • • |

CAUTION

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|---------------------------|---|--|
| Dimethyl Phthalate | NR | R |
| Dimethylamine | NR | NR |
| Dimethylformamide (DMF) | NR | NR |
| Dimethylhydrazine | NR | NR |
| Diocetyl Phthalate | NR | R |
| Disodium Phosphate | R | R |
| Dioxane, pure | R | NR |
| Distilled Water | R | R |
| Dry Cleaning Fluid | NR | R |
| EDTA, Tetrasodium Aqueous | R | R |
| Ethanol, pure | R | R |
| Ethyl Acetate | R | NR |
| Ethyl Acetoacetate | R | NR |
| Ethyl Acrylate | R | NR |
| Ethyl Benzene | NR | R |
| Ethyl Chloride | NR | R |
| Ethyl Chloroacetate | NR | • • |
| Ethyl Ether | NR | NR |
| Ethyl Formate | NR | R |
| Ethyl Mercaptan | NR | R |
| Ethyl Oxalate | NR | R |
| Ethylene Bromide | NR | • • |
| Ethylene Chloride | NR | R |
| Ethylene Chlorohydrin | NR | R |
| Ethylene Glycol, <50% | R | R |
| Ethylene Glycol, >50% | NR | R |
| Ethylene Oxide | R | NR |
| Ethylenediamine | R | NR |
| 2-Ethylhexanol | NR | R |
| Fatty Acids | C | R |
| Ferric Chloride | R | R |
| Ferric Hydroxide | R | R |
| Ferric Nitrate | R | R |
| Ferric Sulfate | R | R |
| Ferrous Chloride | R | R |

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Chemical Resistance

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|------------------------------------|---|--|
| Ferrous Hydroxide | R | R |
| Ferrous Nitrate | R | R |
| Ferrous Sulfate | R | R |
| Fish Oil | C | R |
| Fluoboric Acid | R | • • |
| Fluosilicic Acid | R | R |
| Formaldehyde, 35-50% aqueous | R | NR |
| Formalin (37% to 50% Formaldehyde) | R | NR |
| Formic Acid, pure | R | NR |
| Fructose | R | R |
| Furfural | NR | NR |
| Gallic Acid, aqueous | R | R |
| Gasoline | NR | R |
| Gelatine | R | R |
| Glucose | R | R |
| Glycerine | R | R |
| Glycol, Ethylene, <50% | R | R |
| Glycol, Ethylene, >50% | NR | R |
| Glycol, Polyethylene (carbowax) | R | R |
| Glycol, Polypropylene, >25% | NR | R |
| Glycol, Propylene, <25% | R | R |
| Glycol, Propylene, >25% | NR | R |
| Glycolic Acid | R | • • |
| Glyoxal, aqueous | R | • • |
| Green Liquor | R | • • |
| Halocarbon Oils | NR | • • |
| Heptane | R | R |
| Hexane | R | R |
| Hexanol | R | R |
| Hydrazine | R | NR |
| Hydrobromic Acid | R | R |
| Hydrochloric Acid | R | R |
| Hydrocyanic Acid | R | R |
| Hydrofluoric Acid | R | NR |
| Hydrogen Peroxide, 50% | R | R |

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|------------------------------------|---|--|
| Hydrogen Sulfide, aqueous | R | NR |
| Hydroquinone, aqueous | R | R |
| Hydroxylamine Sulfate | R | • • |
| Hypochlorous Acid | R | R |
| Iodine | R | R |
| Isobutyl Alcohol | R | R |
| Isophorone | NR | NR |
| Isopropanol, pure | R | R |
| Isopropyl Acetate | R | NR |
| Isopropyl Chloride | NR | R |
| Isopropyl Ether | NR | NR |
| Kerosene | NR | R |
| Ketchup | R | R |
| Kraft Liquors | R | R |
| Lactic Acid | R | R |
| Lard Oil | NR | R |
| Lauryl Chloride | R | R |
| Lead Acetate | R | NR |
| Lead Chloride | R | R |
| Lead Nitrate | R | R |
| Lead Sulfate | R | R |
| Lemon Oil | C | R |
| Ligroin | R | R |
| Limonene | R | R |
| Linoleic Acid | C | R |
| Linseed Oil | C | R |
| Lithium Bromide | R | R |
| Lithium Chloride | R | R |
| Lithium Hydroxide | R | NR |
| Lithium Sulfate | R | R |
| Lubricating Oils (Petroleum Based) | R | R |
| Magnesium Carbonate | R | R |
| Magnesium Chloride | R | R |
| Magnesium Citrate | R | R |
| Magnesium Fluoride | R | R |

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Chemical Resistance

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|-----------------------------|---|--|
| Magnesium Hydroxide | R | R |
| Magnesium Nitrate | R | R |
| Magnesium Oxide | R | R |
| Magnesium Sulfate | R | R |
| Maleic Acid | R | R |
| Malic Acid | R | R |
| Manganese Sulfate | R | R |
| Mercuric Chloride | R | R |
| Mercuric Cyanide | R | R |
| Mercuric Sulfate | R | R |
| Mercurous Nitrate | R | R |
| Mercury | R | R |
| Methanesulfonic Acid | R | • • |
| Methanol, up to 10% | R | NR |
| Methanol | R | NR |
| Methanol, pure | R | NR |
| Methyl Acetate, pure | NR | NR |
| Methyl Cellosolve | NR | NR |
| Methyl Chloride | NR | R |
| Methyl Chloroform | NR | R |
| Methyl Ethyl Ketone | NR | NR |
| Methyl Formate | NR | NR |
| Methyl Isobutyl Ketone | NR | NR |
| Methyl Isopropyl Ketone | NR | NR |
| Methyl Methacrylate | NR | NR |
| Methylamine | NR | NR |
| Methylene Bromide | NR | NR |
| Methylene Chloride | NR | NR |
| Methylene Chlorobromide | NR | NR |
| Methylene Iodide | NR | NR |
| Mineral Oil | R | R |
| Molasses | R | R |
| Monoethanolamine | NR | NR |
| Morpholine | R | • • |
| Motor Oil (Petroleum Based) | R | R |

CAUTION

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|------------------------|---|--|
| Muriatic Acid | R | R |
| Naphtha | C | R |
| Naphthalene | NR | R |
| Nickel Acetate | R | NR |
| Nickel Chloride | R | R |
| Nickel Nitrate | R | R |
| Nickel Sulfate | R | R |
| Nitric Acid, <30% | R | R |
| Nitrobenzene | NR | NR |
| Nitroethane | NR | NR |
| Nitroglycerine | C | • • |
| Nitromethane | NR | NR |
| Nitrous Acid | R | C |
| Octane | R | R |
| Octanol | R | R |
| Oil, Crude | C | R |
| Oleum | R | R |
| Olive Oil | C | R |
| Oxalic Acid | R | R |
| Ozonated Water | R | NR |
| Palm Oil | C | R |
| Paraffin | R | R |
| Peanut Oil | C | R |
| Peppermint Oil | C | R |
| Peracetic Acid | R | • • |
| Perchloric Acid, 10% | R | R |
| Perchloroethylene | NR | R |
| Phenol, pure | R | R |
| Phenylhydrazine | NR | NR |
| Phosphate Esters | NR | NR |
| Phosphoric Acid | R | R |
| Phosphorus Pentoxide | R | • • |
| Phosphorus Trichloride | R | R |
| Photographic Solutions | R | R |
| Phthalic Acid | NR | NR |

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|--------------------------------|---|--|
| Picric Acid, <10% | R | R |
| Pine Oil | R | R |
| Plating Solutions | R | R |
| POE Oil (Polyolester) | NR | NR |
| Polyethylene Glycol (carbowax) | R | R |
| Polyvinyl Alcohol | R | R |
| Potash | R | R |
| Potassium Acetate | R | NR |
| Potassium Bicarbonate | R | R |
| Potassium Bichromate | R | R |
| Potassium Bisulfate | R | R |
| Potassium Borate | R | R |
| Potassium Bromate | R | R |
| Potassium Bromide | R | R |
| Potassium Carbonate | R | R |
| Potassium Chlorate | R | R |
| Potassium Chloride | R | R |
| Potassium Chromate | R | R |
| Potassium Cyanate | R | R |
| Potassium Cyanide | R | R |
| Potassium Dichromate | R | R |
| Potassium Ferricyanide | R | R |
| Potassium Ferrocyanide | R | R |
| Potassium Fluoride | R | R |
| Potassium Hydroxide | R | NR |
| Potassium Hypochlorite | R | NR |
| Potassium Iodide | R | R |
| Potassium Nitrate | R | R |
| Potassium Perborate | R | R |
| Potassium Perchlorate | R | R |
| Potassium Permanganate | R | R |
| Potassium Persulfate | R | R |
| Potassium Phosphate | R | R |
| Potassium Sulfate | R | R |
| Potassium Sulfide | R | R |

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|----------------------------|---|--|
| Potassium Sulfite | R | R |
| Potassium Tripolyphosphate | R | R |
| Propanol, pure | R | R |
| Propargyl Alcohol | R | •• |
| Propionic Acid, >5% | R | R |
| Propionic Acid, pure | R | NR |
| Propyl Acetate | NR | NR |
| Propyl Bromide | NR | NR |
| Propylene Dichloride | NR | R |
| Propylene Glycol, <25% | R | R |
| Propylene Glycol, >25% | NR | R |
| Propylene Oxide | R | NR |
| Pyridine | R | NR |
| Pyrogallol | R | •• |
| Pyrrole | NR | NR |
| Reverse Osmosis Water | R | R |
| Salicylaldehyde | R | •• |
| Sea Water | R | R |
| Silicic Acid | R | •• |
| Silicone Oil | R | R |
| Silver Chloride | R | •• |
| Silver Cyanide | R | R |
| Silver Nitrate | R | R |
| Silver Sulfate | R | R |
| Soaps | R | R |
| Sodium Acetate | R | R |
| Sodium Aluminate | R | R |
| Sodium Arsenate | R | R |
| Sodium Benzoate | R | R |
| Sodium Bicarbonate | R | R |
| Sodium Bichromate | R | R |
| Sodium Bisulfate | R | R |
| Sodium Bisulfite | R | R |
| Sodium Borate | R | R |
| Sodium Bromide | R | R |

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Chemical Resistance

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|-------------------------|---|--|
| Sodium Carbonate | R | R |
| Sodium Chlorate | R | R |
| Sodium Chloride | R | R |
| Sodium Chlorite | R | R |
| Sodium Chromate | R | R |
| Sodium Cyanide | R | R |
| Sodium Dichromate | R | R |
| Sodium Ferricyanide | R | R |
| Sodium Ferrocyanide | R | R |
| Sodium Fluoride | R | R |
| Sodium Formate | R | • • |
| Sodium Hydroxide | R | NR |
| Sodium Hypobromite | R | • • |
| Sodium Hypochlorite | R | R |
| Sodium Iodide | R | R |
| Sodium Metaphosphate | R | R |
| Sodium Nitrate | R | R |
| Sodium Nitrite | R | R |
| Sodium Palmitate | R | • • |
| Sodium Perborate | R | R |
| Sodium Perchlorate | R | • • |
| Sodium Peroxide | R | R |
| Sodium Phosphate | R | R |
| Sodium Silicate | R | R |
| Sodium Sulfate | R | R |
| Sodium Sulfide | R | R |
| Sodium Sulfite | R | R |
| Sodium Thiosulfate | R | R |
| Sodium Tripolyphosphate | R | • • |
| Soybean Oil | C | R |
| Stannic Chloride | R | R |
| Stannous Chloride | R | R |
| Stannous Sulfate | R | R |
| Starch | R | R |
| Stearic Acid | R | R |

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|---------------------------|---|--|
| Strontium Chloride | R | • • |
| Styrene Monomer | NR | R |
| Succinic Acid | R | R |
| Sugar | R | R |
| Sulfamic Acid | R | R |
| Sulfuric Acid | R | R |
| Sulfurous Acid | R | R |
| Tall Oil | R | R |
| Tannic Acid | R | R |
| Tartaric Acid | R | R |
| Tetrachloroethylene | NR | R |
| Tetrahydrofuran | NR | NR |
| Tetrahydronaphthalene | NR | R |
| Tetrasodium Pyrophosphate | R | • • |
| Thionyl Chloride | R | R |
| Toluene | NR | R |
| Tomato Juice | R | R |
| Tributyl Citrate | NR | NR |
| Tributyl Phosphate | NR | NR |
| Trichloroacetic Acid | R | NR |
| Trichloroethylene | NR | R |
| Triethanolamine | R | NR |
| Triethylamine | R | NR |
| Trimethyl Propane | R | • • |
| Trisodium Phosphate | R | • • |
| Tung Oil | C | R |
| Turpentine | C | R |
| Urea | R | • • |
| Urine | R | • • |
| Vegetable Oils | C | R |
| Vinegar | R | R |
| Vinyl Acetate | R | NR |
| Water | R | R |
| Water - Deionized | R | R |
| Whiskey | R | R |

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|----------------|---|--|
| White Liquor | R | R |
| Wine | R | R |
| Xylene | NR | R |
| Zinc Acetate | R | NR |
| Zinc Carbonate | R | R |

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| | ChemDrain® CPVC in Laboratory Drainage Service | Fluoroelastomer (FKM) Transition Couplings (AW 95C, AW 96C) |
|---------------|---|--|
| Zinc Chloride | R | R |
| Zinc Nitrate | R | R |
| Zinc Sulfate | R | R |
| | | |

LIMITED WARRANTY

Charlotte Pipe and Foundry Company® (Charlotte Pipe®) Products are warranted to be free from manufacturing defects and to conform to currently applicable ASTM standards for a period of five (5) years from date of delivery. Buyer's remedy for breach of this warranty is limited to replacement of, or credit for, the defective product. This warranty excludes any expense for removal or reinstallation of any defective product and any other incidental, consequential, or punitive damages. **This limited warranty is the only warranty made by seller and is expressly in lieu of all other warranties, express and implied, including any warranties of merchantability and fitness for a particular purpose.** No statement, conduct or description by Charlotte Pipe or its representative, in addition to or beyond this Limited Warranty, shall constitute a warranty. This Limited Warranty may only be modified in writing signed by an officer of Charlotte Pipe.

This Limited Warranty will not apply if:

- 1) The Products are used for purposes other than their intended purpose as defined by local plumbing and building codes, and the applicable ASTM standard.
- 2) The Products are not installed in good and workmanlike manner consistent with normal industry standards; installed in compliance with the latest instructions published by Charlotte Pipe and good plumbing practices; and installed in conformance with all applicable plumbing, fire and building code requirements.
- 3) This limited warranty does not apply when the products of Charlotte Pipe are used with the products of other manufacturers that do not meet the applicable ASTM or CISPI standards or that are not marked in a manner to indicate the entity that manufactured them.
- 4) In hubless cast iron installations, this warranty will not apply if products are joined with unshielded hubless couplings. Charlotte Pipe requires that its hubless cast iron pipe and fittings be joined only with shielded hubless couplings manufactured in accordance with CISPI 310, ASTM C 1277 and certified by NSF® International or with Heavy Duty Couplings meeting ASTM C 1540.
- 5) The Products fail due to defects or deficiencies in design, engineering, or installation of the piping system of which they are a part.
- 6) The Products have been the subject of modification; misuse; misapplication; improper maintenance or repair; damage caused by the fault or negligence of anyone other than Charlotte Pipe; or any other act or event beyond the control of Charlotte Pipe.
- 7) The Products fail due to the freezing of water in the Products.
- 8) The Products fail due to contact with chemical agents, fire stopping materials, thread sealant, plasticized vinyl products, or other aggressive chemical agents that are not compatible.
- 9) Pipe outlets, sound attenuation systems or other devices are permanently attached to the surface of Charlotte® PVC, ABS or CPVC products with solvent cement or adhesive glue.

Charlotte Pipe products are manufactured to the applicable ASTM or CISPI standard. Charlotte Pipe and Foundry **cannot** accept responsibility for the performance, dimensional accuracy, or compatibility of pipe, fittings, gaskets, or couplings not manufactured or sold by Charlotte Pipe and Foundry.

This Limited Warranty will not apply unless written notice of a claim is mailed to Charlotte Pipe at the address below within 30 days of discovery of the allegedly defective product.

Any Charlotte Pipe products alleged to be defective **must** be made available to Charlotte Pipe at the following address for verification, inspection and determination of cause:

Charlotte Pipe and Foundry Company
Attention: Technical Services
2109 Randolph Road
Charlotte, North Carolina 28207

Purchaser must obtain a return materials authorization and instructions for return shipment to Charlotte Pipe of any product claimed defective or shipped in error.

Any Charlotte Pipe product **proved** to be defective in manufacture will be replaced F.O.B. point of original delivery, or credit will be issued, at the discretion of Charlotte Pipe.

4/20/21

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CHARLOTTE

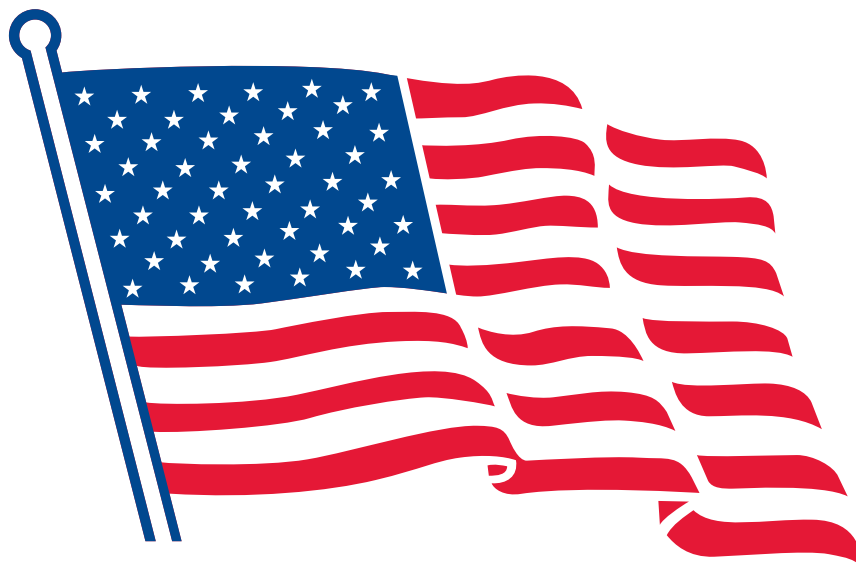
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