



## Chemical Compatibility and Installation Information for FlowGuard™Gold, FlowGuard™Flex and FlowGuard® Multiport

CPVC domestic water and industrial piping systems are designed for use in new construction re-pipe and repair applications due to their outstanding corrosion resistance. Reasonable care needs to be taken to insure that products coming into contact with CPVC systems are chemically compatible. If a product coming into contact with CPVC is not listed, it is recommended that chemical compatibility be confirmed with the manufacturer of the product. If chemical compatibility with CPVC is in question, it is recommended to isolate the suspect product from contact with CPVC pipe fittings, pipe or valves.

The following products have been shown to be **unacceptable** when in **direct** contact with our CPVC systems. Chemically incompatible products are added to this list as they are brought to our attention. A product's absence from this list does not imply or insure CPVC chemical compatibility.

**Always check the following for the most up-to-date chemical compatibility listings:  
[www.kbico.com](http://www.kbico.com) or [www.flowguardgold.com](http://www.flowguardgold.com)**

### Products **Not** Compatible with FlowGuard™Gold, FlowGuard™Flex & FlowGuard®Multiport CPVC

#### Caulks

Company.....	Caulk
Darworth Co	• Polyseamseal All Purpose Adhesive Caulk
John Wagner Associates	• Grabber Acoustical Sealant GSCS
OSI Sealants	• Polyseamseal Tub & Tile Adhesive Caulk
Ohio Sealants	• Pro Series PC-158 Caulk
United States Gypsum	• Sheetrock Brand Acoustical Sealant
White Lightning	• 3006 All Purpose Adhesive Caulk

#### Fire Stopping Systems

Company.....	System
3M	• Fire Barrier 2003 Silicone,
Fire Barrier CP25WB+	
Flame Stop	• Flame Stop V
Proset	• Proseal Plug, Black, Proseal Plug, Red

#### Leak Detector

Company.....	Product
Federal Process Company	• Gasoila Leak Tech
G.F. Thompson Co. Ltd	• Masters Leak Detector
Rector Seal	• RectorSeek™ Low Temp
Unipak A/S	• Multitec Leak Detecting Spray
FL-FGG-CHEM-CAT	



**Miscellaneous Materials**

**Company.....Product**

- Fiberlock Technologies, Inc
  - Shock Wave™ (8310) (Disinfectant)  
(Note: This chemical is used for mold abatement.)
- Various Sources
  - Peppermint Oil • Roofing Tar
  - Vaseline • Vegetable Oils
- Victaulic
  - Silicone Pipe Lubricant
- WD-40 Company
  - WD-40 Lubricant

**Pipe Hangers/Clamps/Insulation System**

**Company.....Product**

- LSP Specialty Products
  - Acousto-Clamps
  - Acousto-Plumb System

LSP Specialty Products: Incompatibility information is based on testing of products manufactured prior to October 2007. For more complete information regarding this product, please contact the manufacturer.

- Naylon Products
  - Naylon Vinyl-Coated Wire Pipe Hangers

**Pipe Tape**

**Company.....Product**

- Christy's
  - Pipe Wrap Tape
- Pasco
  - All weather PVC pipe wrap
- Pro Pak, Inc
  - Pipe Wrap Tape (black)
- Wonder
  - No. 413 Pipe Wrap Tape

**Thread Sealants**

**Company.....Sealant**

- Allied Rubber and Gasket Co. (ARGCO)
  - Super Dope
- Anti-Sieze Technologies
  - TFE Paste
- Devcon
  - Super Lock Hi-Strength
  - Stud Lock Grade 2271
- G.F. Thompson Co. Ltd.
  - Masters™ Pro-Dope™ with Teflon®
- General Sealant
  - GS-600
- Hercules
  - Brush-On/Blue Block
- Hernon Mfg., Inc.
  - Powerseal #932
- IPS
  - White Seal
- JC Whitlam Mfg. Co.
  - Seal Unyte Thread & Gasket Sealer
- Jet Lube, Inc.
  - Jet Lube V-2
- Jomar
  - Tighter-than-Tite
- Loctite
  - Threadlocker 242
- Lyn-Car Products, Ltd.
  - Proseal
- National Starch & Chemical
  - Permabond LH-050, Permabond LH-054
- Permabond Division
- Permatex Company, Inc.
  - Permatex 14H
- Rule
  - High Performance Teflon
- Thread Sealing Compound
- Saf-T-Lok Chemical
  - Saf-T-Lok TPS Anaerobic
- Adhesive/Sealant, Indus. Grade TPS
- Swagelock Company
  - SWAK

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## Other Chemical Compatibility Concerns and Installation Information:

### Acetone in Primers, Cleaning and Solvent Cements:

- **Primers, cleaners, and solvent cements** containing appreciable amounts of **acetone** may cause rapid environmental stress cracking of CPVC metal insert parts during installation at freezing temperatures. Contact your **primer/cleaner/solvent cement** manufacturer for more information or recommendation of alternatives.

### Flexible Wire and Cable:

- Direct contact with **flexible wire** and **cable** jacketing that utilize insulation containing **plasticizers** is not recommended. Section 334.30 of the National Electric Code (2002 Edition) requires **wire and cable** to be secured by staples, cable ties, straps, or hangers. Air ducts, pipes and ceiling grid are not acceptable supports for **wire and cable**. Also see section titled "Rubber and Flexible Materials Containing Plasticizers."

### Fungicides and Mold Inhibitors:

- When performing repairs to leaks in existing systems, care should be taken to isolate CPVC pipe fittings, pipe and valves from direct contact with heavy concentrations of **fungicide** products which may be applied during cleanup of water damage. Vinyl piping materials such as PVC or CPVC may be damaged by fungicides when fungicides are sprayed on surrounding drywall and wood framing to prevent the growth of mold and mildew in the affected area. Common sense precautions will prevent problems with repairs to existing systems. When repairs are made to an existing system, and the possibility exists that **fungicides** will be applied to treat damp drywall and wood framing surrounding the repair site, exposed piping should be sleeved with a compatible plastic sleeving or pipe insulation material to prevent direct contact of the **fungicide** with the plumbing systems.

### Grease and Cooking Oils:

- When CPVC pipe is installed in kitchen areas the pipe must be protected from contact with **grease** or **cooking oils**. Consideration must be given to not only protecting the pipe from direct contact with **grease or oil** as well as contact that may occur from airborne **grease or oil**.

### Leak Detectors:

- If it is necessary to use **leak detectors** on CPVC systems, only **leak detectors** that are included in the **FGG/BM®** System Compatible Program should be used. While common ordinary soaps are not detrimental to CPVC, most modern dishwashing liquids contain synthetic detergents, some of which may cause environmental stress cracking of CPVC. For a complete list of products that are included in the **FGG/BM®** Systems Compatible Products refer to [www.flowguardgold.com](http://www.flowguardgold.com).

### Molten Solder and Solder Flux:

- CPVC may be damaged by torches and/or chemicals used to install metal piping. When metal piping is installed in proximity to CPVC piping systems, care should be taken to protect the CPVC from burning with torches or contact with **molten solder and solder flux**, as well as incompatible thread sealants, leak detectors, lubricants, or other chemical products which may be used on metal piping.

### Paint:

- Water-based acrylic latex paint is the preferred and recommended **paint** to use on CPVC pipe fittings, pipe and valves. Oil or solvent-based **paints** may be chemically incompatible.

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### **Polyurethane (Spray-on) Foams:**

- At this time we cannot say whether such products are compatible with CPVC. While we are not aware of a CPVC failure that was the result of chemical incompatibility with properly applied **polyurethane foams**, when **polyurethane foams** are not properly applied there is the potential for excess heat that can lead to ballooning of the pipe and a subsequent failure.

### **Residual Oils (Including Cutting Oils) with Steel Pipe:**

- Transitions from steel pipe to CPVC pipe can be made through a variety of methods such as threaded connections, flanges, and grooved adapters. Occasionally the steel pipe may contain **residual oils** that were used to aid in the cutting process. Some of the **oils** used for this purpose may be incompatible with CPVC. If a **cutting oil** is used consult with the manufacturer of the **cutting oil** for a specific recommendation as to compatibility with CPVC. Those **cutting oils** which are listed in the **FGG/BM/CZ™** System Compatible program have been tested and confirmed to be compatible with FlowGuard Gold® CPVC.

### **Residual Oils with HVAC Applications:**

- Some heat exchangers or condenser coils may contain **residual oils** from the manufacturing process which can cause cracking of CPVC. Caution should be exercised when installing CPVC in combination hot water/air heating units or as condensate drain lines for air conditioning systems. Confirm the compatibility of CPVC with residual oils prior to installation. The interior of heat exchangers or the exterior of condenser coils may be thoroughly flushed with mild detergent solution to remove incompatible oils prior to piping installation. A rinse with clean water to completely clean the system is advisable as a final flushing.

### **Rubber and Flexible Materials Containing Plasticizers:**

- CPVC is not compatible with some **rubber and flexible vinyl materials** containing certain types of **plasticizers**. Incompatible **plasticizers** include, but are not limited to, **phthalates, adipates, trimellitates, dibenzoates, etc.** Compatibility should be confirmed before selecting rubber for flexible vinyl materials for direct contact with CPVC. Further, **plasticizers** may leach from rubber or flexible vinyl materials, such as hoses or tank linings, into the process fluid which contacts them. **Plasticizer** contamination in the process fluid may also cause environmental stress cracking of CPVC used elsewhere in the system. This can include both CPVC process piping, through which contaminated fluid may flow, or CPVC ducting drawing fumes from contaminated fluid.

### **Sleeving Materials:**

- In situations where sleeving is required, the pipe should be protected with a compatible sleeving material extending at least 12" above and below the soil. The top of the sleeving should be securely taped to the pipe with a compatible tape product. Backfill over underground piping prior to **termiticide** spraying.

### **Spray-on Coatings:**

- Certain types of **spray-on coatings** which form a peelable film to protect fixtures during construction may be incompatible with CPVC. Care should be used to protect exposed piping from overspray when this type of protective coating is applied.

### **Teflon® Tape:**

- KBI® recommends Teflon tape as the preferred thread sealant.

### **Termiticides and Insecticides:**

- When performing installation underslab or where the presence of **insecticides** or **termiticides** is likely, care should be taken to isolate CPVC pipe from direct contact with large quantities of these chemicals. Vinyl piping materials such as PVC or CPVC may be damaged when **termiticides** or **insecticides** are injected into the annular space between the pipe wall and sleeving material trapping the **termiticide** against the pipe wall. **Termiticide** applications per label instructions

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in an open-air environment, such as slab pretreat applications, should not pose a problem. However, puddling of **termiticides** on or near CPVC may cause failure. In areas where puddling is more likely, such as near tub boxes and retreat applications, extra care should be taken to avoid puddling of **termiticides**. Exercising caution and common sense should prevent installation problems. For more information, review your manufacturer's installation guide.

- Additional precautions need to be taken when retreat applications are required. **Termiticide** retreatment is usually required when the concrete slab has been broken to relocate a pipe. The following recommendations should be followed in retreat applications:
  - Remove all the plastic barrier material that was installed prior to the initial concrete pour from the area to be retreated. Do not reinstall the plastic barrier material.
  - After the pipe has been relocated, the soil should be pretreated before it is placed in hole around the pipe. Do not apply **termiticide** directly to the retreat area.
  - Termiticides that contain cypermethrin should not be used in retreat applications.
- Note: Many insecticides and termiticides are incompatible with CPVC. Assume that all are aggressive and not compatible with FlowGuard Gold CPVC pipe fittings, pipe and valves.
- When installing CPVC where the presence of insecticides or termiticides is likely, confirm compatibility prior to application. Exercise caution. For more information, review your manufacturer's installation guide.

#### **Installation Notes:**

- Use CTS CPVC male threaded adapters for cold water only.
- Protect CPVC from long term exposure to direct sunlight.
- Space CPVC more than 6 inches from gas flue.
- Allow for thermal expansion and contraction.
- The **Lubrizol** Corporation also publishes a more complete listing covering application of individual compounds. This may be found in the **Lubrizol** chemical resistance chart for CPVC piping products. The user is encouraged to compare data from the individual product's material safety data sheet to the published chemical compatibility sheets and to contact **Lubrizol** regarding chemicals in question that are not listed.

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