

# Impact of Common Disinfection Practices on Sulfone Polymer Plumbing Fittings

Solvay Advanced Polymers supplies high-performance sulfone polymers that are used in water handling devices. These include UDEL® polysulfone, RADEL® R polyphenylsulfone and ACUDEL™ polyphenylsulfone blends. These tough, rigid, high-strength polymers can be precision molded to tight tolerances and maintain their properties over a wide temperature range. They are highly resistant to mineral build-up, corrosion and prolonged exposure to hot chlorinated water.

Plumbing fittings made from these materials may be periodically exposed to elevated levels of chlorine in order to disinfect plumbing systems after an installation or after the potable water supply becomes contaminated.

Although disinfection practices may vary, one of the more common procedures is to dilute household bleach to a chlorine concentration of 50-100 mg/L. This solution then resides in the system for up to 24 hours at ambient temperature. Afterwards, the system is flushed with potable water.

Recent laboratory tests studied the impact of subjecting UDEL, RADEL R, and ACUDEL sulfone polymers to common disinfection practices. Table 1 summarizes the test conditions used to evaluate the potential effects of various procedures.

Test results showed that there were no indications of degradation in mechanical properties for any of the materials studied.

Table 1

**Test Conditions at Elevated Chlorine Concentrations\***

Chlorine Concentration, mg/L	Exposure Time, hours	Temperature, °C (°F)	Applied Stress, psi (MPa)
5,250	24	82 (180)	None
525	96	82 (180)	None
50	168	82 (180)	4,000 (27)
2,400	168	23 (73)	4,000 (27)

\* Test conditions available upon request.

## Health and Safety Information

Material Safety Data Sheets (MSDS) for our products are available upon request from your Solvay Advanced Polymers sales representative or by writing to the addresses shown above. Always consult the MSDS for the product you consider using.

To learn more about our products and services, please visit our web site at [www.solvayadvancedpolymers.com](http://www.solvayadvancedpolymers.com).

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