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Technical Information

Product: Back Pressure Valves
Pressure Relief Valves

Release #: 2010-001

Application: Sulfuric Acid

Problem: Griffco has noticed that over the past few years the feeding of sulfuric acid has become more problematic as the concentration of the product has exceeded 93%. The source of the failure is not poor material or the acid. In concentrations of 98.3% or higher, sulfuric acid had a natural contaminant known as sulfur trioxide (SO₃). This has led to the new common terminology of 98+% sulfuric acid. This high concentration acid sulfuric attacks and causes stress fractures in both PVDF and Noryl. While PTFE is chemically compatible its cold flow properties make it difficult to seal at threaded connections. Alloy 20 is a bullet proof solution, but is extremely expensive.

Solution: Griffco is committed to supplying valves for this application that will be chemically compatible and will not leak. The following will outline our offerings for sulfuric acid, noting the limits each will have.

- 1) Noryl – for concentrations to 95% and 200° F
- 2) PVDF – for concentrations to 95% and 175° F
- 3) Halar – for concentrations to 100% and 200° F
- 4) PTFE (flanged one piece construction) – for concentrations to 100% and 200° F
- 5) Alloy 20 - for concentrations to 100% and 300° F

Note: Although the information presented herein is presented in good faith and believed to be correct, Griffco Valve Inc., makes no guarantee or representation as to the completeness or accuracy thereof, and disclaims all liability for loss or damage resulting from use or reliance upon any information, recommendations or suggestions contained herein. Any selection made is at the responsibility of the end user.

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