



Butadiene Service

A polymer is a series of repeated units, called monomers, linked together. A monomer is a single molecule that can be bonded to another molecule of the same composition. Polymerization is the process in which monomers join forming a polymer. Typically, polymers can be resistant to chemicals, thermal insulators, and can have varying degrees of strength. A common polymer used in manufacturing is butadiene. Butadiene is a colorless gas (sometimes condensed into a liquid) that is primarily used as a monomer to produce many different types of polymers and copolymers and as a chemical intermediate in the production of industrial chemicals.

Popcorning

Butadiene monomer (like other monomers) can polymerize quickly and aggressively in small areas. Because of this, the porosity and permeability of a material should be considered to avoid “popcorning.” “Popcorning” occurs when there is void space in a material for monomers/polymers to become trapped and polymerization takes place. This can lead to a valve lockup, and destruction of soft goods in the valve. A material proven to prevent “popcorning” is TFM™-1600. TFM™-1600 has lower porosity and permeability than normal virgin PTFE and filled PTFE compounds. TFM™-1600 is used in monomer/polymer applications because of its improved properties over PTFE and filled PTFE.

Standard Material

NOTE: Please consult A-T Controls for material selection for your application. These parameters are guidelines, and customers are responsible for materials of construction and lubricants being compatible with their Polymer application.

Packing: Graphite or TFM™-1600

O-ring: FKM or FFKM (depending on temperature)

Stem Seal: TFM™-1600

Body: ASTM A351 Grade CF8M, ASTM A351 Grade CF3M

Seats: TFM™-1600

Trim: 316 SST

Note: A-T Controls recommends using TFM™-1600 seats over PTFE due to “popcorning.”

Valve Packages (Others available)

Series FD9- 150#, 300#, 600# Direct Mount Split Body Flanged Ball Valve, Firesafe, 316SST or WCB, multiple sizes available.

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Series F91- Sizes 1/2" - 6", Regular Port, 150# Unibody Direct Mount Flanged Ball Valve, 316 SST or Carbon Steel Body

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Series F88- Sizes 1/4" - 4", Full Port, Direct Mounting Pad, Threaded, Socket Weld, or Butt Weld, 316 SST or Carbon Steel Body

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Series F83- Sizes 1/4" - 2", Full Port, Threaded, Socket Weld, or Butt Weld, 316 SST or Carbon Steel Body

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