

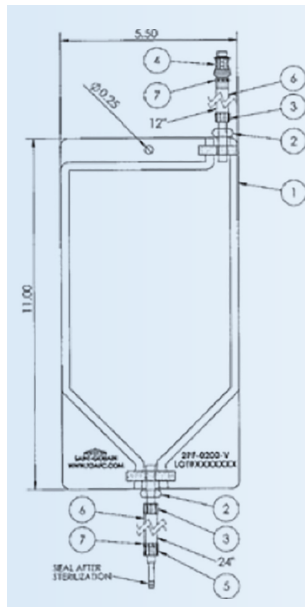
APPLICATION NOTE

Partnering with our customers to design innovative solutions to their specific application challenges

Selecting the Right Material for Chemical Resistance

CHALLENGE

- > A request for the “closing-up” of cryomedia from bottles to bags
- > The entire system needed to be resistant to DMSO (cryoprotectant)
- > The system required ability to sterile dock/weld



SOLUTION

- > **FEP bag** was selected for DMSO resistance
- > **C-Flex® tubing** was selected for its ability to sterile dock/weld; C-Flex is considered DMSO-friendly
- > Bag was designed with custom V-shape to promote draining

UNDERSTANDING THE EFFECT OF CHEMICAL EXPOSURE ON POLYMERS

Chemical exposure can impact many polymer properties, including:

- > Strength
- > Flexibility
- > Surface appearance
- > Color
- > Dimensions
- > Weight
- > Extractables

Basic modes of interaction between plastics and chemical agents

- > Chemical attack on the polymer chain leading to a reduction in physical properties
- > Physical changes in the polymer
- > Stress cracking from interaction of a “stress-cracking agent” with molded-in or external stresses

References

1. [Chemical resistance information from www.thermoscientific.com](http://www.thermoscientific.com)

POLYMERIC MATERIAL

PURE DMSO RESISTANCE

POLYMERIC MATERIAL	PURE DMSO RESISTANCE	
	@20°C	@50°C
LDPE	N	N
HDPE	E	E
Polypropylene	E	E
FEP	E	E
ETFE	E	G
Polycarbonate	N	N
Rigid PVC	N	N
Flexible PVC	N	N
Polystyrene	E	G

E: No damage after 30 days constant exposure

G: Little or no damage after 30 days constant exposure

N: Immediate damage may occur; not recommended for continuous use

Performance Plastics

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