



The cap and septa are not the issue here but rather the glass. First call will be to change to a polypropylene vial and cap.

You can freeze glass vials down to  $-80^{\circ}\text{C}$  but the challenge is in the thawing process. Vials must be thawed at room temperature and slowly. Amber glass is more susceptible to breakage and the base where the glass is formed and has less actual glass in the wall.

- Consider what temperature will the glass be taken down to
- Consider under what conditions is the glass thawed
- Will the septa be intact or has it been pierced before freezing (always use new intact septa before freezing)
- Is there a need to thaw and freeze multiple times – this will weaken the glass and increase the risk of breakage