



Technical Service Bulletin #05-001

Date: January 17, 2005

Re: Storage of frozen **VALIDATE**[®] product stored at -10° to - 20°C

Subject: Frost-Free Freezers

Frozen MSC Validate[®] products require appropriate storage in regular freezers (not frost-free) in order to preserve the integrity of the product throughout the entire dating period. The following is a brief explanation of the dynamics of a frost-free freezer:

A frost free freezer has three basic parts:

- A timer
- A heating coil
- A temperature sensor

Every six hours or so, the timer turns on the heating coil. The heating coil is wrapped among the freezer coils. The heater melts the ice off the coils. When all of the ice is gone, the temperature sensor senses the temperature rising above 32 degrees F (0 degrees C) and turns off the heater.

Heating the coils every six hours takes energy, and it also cycles the product in the freezer through temperature changes which may affect the stability of frozen materials.

If you do not have a regular freezer, storage of the frozen product in a covered Styrofoam container away from the heating coil is recommended.^{1, 2}

Please refer any questions related to this bulletin to our Technical Service department.

Thank you,

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1. Ref: State of New York, Dept. of Health, Bulletin November 1, 2004
2. Ref: <http://carolina.com/biotech/kruezer&massey/methods.asp>