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Standard Guide for Design and Maintenance of Low-Temperature Storage Facilities for Maintaining Cryopreserved Biological Materials¹

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INTRODUCTION

Storage facilities for maintaining cryopreserved biological materials are generally comprised of two types of low-temperature systems: (1) freezers that are cooled by mechanical refrigeration and (2) freezers that are cooled passively with liquid nitrogen. Either system can be used for the storage of frozen biological materials as long as it meets the criteria specific to the material being stored for ensuring stability. Each system has its own unique handling requirements.

1. Scope

1.1 This guide covers recommended procedures for developing and maintaining low-temperature storage facilities for freezers with mechanical refrigeration.

1.2 This guide covers recommended procedures for developing and maintaining low-temperature storage facilities for freezers cooled with liquid nitrogen.

1.3 This guide does not cover practices for preservation by freezing which are covered in Practices E 1342.

1.4 The values stated in SI units are to be regarded as the standard.

1.5 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

E 1342 Practice for Preservation by Freezing, Freeze-Drying, and Low Temperature Maintenance of Bacteria, Fungi, Protista,

¹ This guide is under the jurisdiction of ASTM Committee E48 on Biotechnology and is the direct responsibility of Subcommittee E48.02 on Characterization and Identification of Biological Systems.

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