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Standard Guide for Selection of Substitute, Non-hazardous, Particulate Solid Filling Substances for Packagings Subjected to the United Nations Performance Tests¹

This standard is issued under the fixed designation D8135; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 The purpose of this guide is to clarify the selection, use and description criteria of non-hazardous particulate solid substitutes used to replace hazardous materials for the purpose of performance testing packagings. This includes identification of the physical parameters of substitute non-hazardous solid test fill materials that may affect packaging performance and test results and should be considered when selecting and describing a test fill material that conforms to the requirements of the Hazardous Materials Regulations (HMR). This guide is intended for use with package testing procedures for particulate solid materials that have flow characteristics. It is not intended for use with hazardous articles.

1.2 This guide provides information to assist packaging users, manufacturers, and performance testing service suppliers regarding the types of physical properties that should be considered when selecting substitute filling substances for the testing, certification and manufacture of packagings under the United Nations packaging protocols (UN Recommendations on the Transport of Dangerous Goods-Model Regulations) as adopted by US DOT in 49 CFR HMR.

1.3 This guide provides the suggested minimum information concerning the physical characteristics of the filling substances that should be documented in the certification test report and notification to users to allow for test repeatability and analysis, and to provide guidance to the user of a packaging of pertinent physical differences between potential hazardous lading and the filling substance with which the packaging was tested.

1.4 This guide does not purport to address regulatory requirements regarding the compatibility of filling substances with transport packagings. Compatibility requirements must be assessed separately, but it should be noted that under certain national and international dangerous goods regulations, the

selection of the filling substances for package performance testing may be prescribed with respect to chemical compatibility requirements.

NOTE 1—Under the US HMR determination of packaging compatibility with a particular hazardous fill material is “the responsibility of the person offering the hazardous material for transportation” as prescribed in 49 CFR § 173.24(e).

1.5 When testing packaging designs intended for hazardous materials (dangerous goods), the user of this guide shall be trained in accordance with 49 CFR §172.700 and other applicable hazardous materials regulations such as the ICAO Technical Instructions, IMDG Code, other applicable national or international dangerous goods regulations that govern the testing, manufacture and use of packagings authorized for the transportation of dangerous goods, and carrier rules such as the IATA Dangerous Goods Regulations.

1.6 The units of measurement are consistent with the HMR.

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

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D4919 Guide for Testing of Hazardous Materials (Dangerous Goods) Packagings

D6393 Test Method for Bulk Solids Characterization by Carr Indices

¹ This guide is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.22 on Hazardous Materials.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.