



Designation: D 6338 – 9803

Standard Classification System for Highly Crosslinked Thermoplastic Vulcanizates (HCTPVs)¹

This standard is issued under the fixed designation D 6338; 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.

INTRODUCTION

This classification system is intended as a means for the callout of materials for the fabrication of parts or end-use items. It is not intended for material selection, which should be performed by those with special expertise in the materials field. Material selection should be made after careful consideration of: part performance and design; the environment in which the part must function; the material properties covered and not covered by this classification system; the desired service lifetime of the part; the fabrication process for the part; and material and fabrication costs.

1. Scope

1.1 This classification system covers highly crosslinked thermoplastic vulcanizates (HCTPVs) for extrusion, molding and other fabrication methods. HCTPVs are thermoplastic elastomers (TPEs) consisting of two or more polymer systems at least one of which is rubbery and highly (>95 %) crosslinked and at least one of which is thermoplastic, with each system having its own phase. The thermoplastic phase will tend to be continuous and the rubbery phase discontinuous. The high level of crosslinking and ultrafine particle size (ca 1 μm diameter) of the rubbery phase give rise to properties more closely approaching those of conventional thermoset rubber, when compared to the same thermoplastic/rubbery polymer composition with a lower level (≤95 %) of crosslinking. The HCTPV polymer compositions may contain fillers, reinforcing agents, plasticizers, resins, antidegradants, colorants and other beneficial constituents. Recycled HCTPVs are not covered in this classification system.

1.2 Included in this classification system are the properties necessary to identify the respective compositions. For specialized applications, other requirements may be needed to identify specific characteristics.

1.3 As given in ~~Practice E 380~~, IEEE/ASTM SI-10, values in SI units are to be regarded as standard.

NOTE 1—There is no equivalent ISO standard.

1.4 The following safety hazards caveat pertains only to the test methods portion, Section 12, of this classification system. *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:*

¹ This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic Materials.

Current edition approved ~~November 10, 1998~~ August 10, 2003. Published ~~Fe~~ October 2003. Originally approved in 1998. Last previous edition approved in 1998 as D 6338 - 98.