



Standard Guide for Description of Polymer Pellet Defects¹

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1. Scope

1.1 This guide is a compilation of terms used to describe defects of polymeric pellets. Terms that are generally understood or defined adequately in Terminology [D883](#) or in other readily available sources are not included.

1.2 Not every term is applicable to every type of pellet. Terms which apply to transparent pellets, for example, do not always apply to translucent or opaque pellets.

1.3 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no known ISO equivalent to this guide.

2. Referenced Documents

2.1 *ASTM Standards:*²
[D883 Terminology Relating to Plastics](#)

3. Terminology and Definitions

3.1 Pellet Color Defects and Terms:

NOTE 2—Not all color defect terminology is applicable to all pellet types.

3.1.1 **discoloration**, *n—of a pellet*, any deviation from the product's normal color.

3.1.2 **opaque center pellet**, *n—pellet* that is translucent or slightly translucent and has a less clear/more opaque center by comparison to the remainder of the pellet.

3.1.3 **striped pellet**, *n—pellet* containing a stripe of a different color than the remainder of the pellet.

3.2 Pellet Contamination Defects and Terms:

3.2.1 **die pearls**, *n—non-degraded particles* that build up and break off of the die.

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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.

3.2.2 **drools**—see *die pearls*

3.2.3 **fin**, *n—very small particles, dust, or unattached tails.*

3.2.4 **foreign material contamination**, *n—of pellets*, any material in, on, or around the pellets that emanates from an external source and has a composition different than that of the pellet; also known as trash if it can be picked up separately.

3.2.5 **oxidized pellet**, *n—pellet* with a deep yellow, brown, red, or black particle present.

3.2.6 **polymer cross-contamination**, *n—of pellets*, unintentional mixture of two or more dissimilar resins or compounds; generally apparent by comparing key properties such as pellet geometry, color, opacity, or hardness.

3.2.7 **speck contamination on/in**, *n—of a pellet*, small pinpoint particles of discolored matter, internal or external, which can sometimes rub off; includes, but is not limited to: black, brown, yellow, or white specks.

3.3 Pellet Size and Shape Defects and Terms:

NOTE 3—Polymeric pellets are of many shapes. These include cylinders (formed by a strand pelletizer), spheres (underwater-face cut), and sliver-like pieces (hot-face cut).

3.3.1 **agglomerates**, *n—of pellets*, thoroughly fused accumulation of pellets.

3.3.2 **angel hair**, *n—thin, fiber or thread-like strands* of polymer.

3.3.3 **clumps**—see *agglomerates*

3.3.4 **clusters**, *n—of pellets*, three or more pellets fused together; only referred to as triples when there are three distinct pellets.

3.3.5 **daisy chains**, *n—of pellets*, two or more pellets joined together “chain-like” by strands of polymer; can be separated to form pellets with tails.

3.3.6 **doubles**—see *marriages*

3.3.7 **glob**—see *agglomerates*

3.3.8 **marriages**, *n—of pellets*, two pellets fused together.

3.3.9 **pellet non-uniformity**, *n—pellets* that deviate from normal size-range and shape; for example, undersized or oversized, over-length, not round, flattened on one or both ends, or smashed.

3.3.10 **snake skins**, *n—long, thin, film-like pieces* of polymer, or a build-up that looks like a shed snake skin when it comes free.

3.3.11 **streamers**—see *snake skins*

3.3.12 **tail**, *n*—*on a pellet*, a small thin extension attached to a pellet; usually exceeds half the length of a normal pellet.

3.3.13 *triples*—see *clusters*

3.3.14 *twins*—see *marriages*

3.3.15 *walnuts*—see *agglomerates*

3.4 Pellet Integrity Defects and Terms:

3.4.1 **cracks**, *n*—*in a pellet*, breaks, splits, or separations within the pellet that are visible to the unaided eye.

3.4.2 **foamed pellet**, *n*—*pellet* that contain voids due to entrapped water, volatiles, or other substances; typically white in appearance and sometimes larger than normal-sized pellets.

3.4.3 *foamy pellet*, *n*—see *foamed pellet*

3.4.4 *puffy pellet*, *n*—see *foamed pellet*

4. Significance and Use

4.1 This guide is intended to provide terminology for both suppliers and users of polymer pellets to ensure mutual

understanding in discussions concerning pellet defects. It is not an absolute standard but is to be referred to when issues with the quality and/or description of the polymeric materials arise.

4.2 The guide is categorized according to the best fit for the term and its description for ease of finding certain description types.

4.3 Some terms within this guide do not apply to all resin types. It is the user's responsibility to determine if the term and its subsequent definition are applicable to the material in question.

4.4 Other terminology relating to polymers that are not included in this document can be found in additional standards such as Terminology **D883**.

5. Keywords

5.1 color; contamination; defect; geometry; integrity; pellet; shape; size

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