



Designation: E2979 – 22

Standard Classification for Discarded Materials from Manufacturing Facilities and Associated Support Facilities¹

This standard is issued under the fixed designation E2979; 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 This standard classifies discarded materials from manufacturing facilities and associated on-site support facilities.

1.2 This classification system is based on classification, location, disposition, and treatment.

1.3 This classification does not purport to address or supersede proper waste disposal required by laws and regulations.

1.4 *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.*

1.5 *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

[E2114 Terminology for Sustainability Relative to the Performance of Buildings](#)

[E2987/E2987M Terminology for Sustainable Manufacturing](#)

2.2 *Federal Standard:*³

[40 CFR Part 261 Identification and Listing of Hazardous Waste](#)

¹ This classification is under the jurisdiction of ASTM Committee E60 on Sustainability and is the direct responsibility of Subcommittee E60.13 on Sustainable Manufacturing.

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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 Available from U.S. Government Publishing Office (GPO), 732 N. Capitol St., NW, Washington, DC 20401, <http://www.govinfo.gov>.

3. Terminology

3.1 *Definitions*—For definitions of terms used in this classification, refer to Terminologies [E2114](#) and [E2987/E2987M](#).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *aerobic digestion, n*—process in which microorganisms break down organic material(s) in the presence of oxygen.

3.2.2 *anaerobic digestion, n*—process in which microorganisms break down organic material(s) in the absence of oxygen.

3.2.3 *hazardous material, n*—material that, because of its quantity, concentration, or characteristics, is capable of: (1) causing, or significantly contributing to, an increase in mortality or to an increase in serious irreversible, or incapacitating, illness or injury, or (2) posing a present or potential hazard to human health or to the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

3.2.3.1 *Discussion*—The U.S. Environmental Protection Agency (US EPA) has developed a list of materials that are considered hazardous material and has developed criteria and test methods to determine if the material has hazardous characteristics. These listings and testing criteria can be found in 40 CFR 261.

3.2.4 *landfill, n*—disposal site for the deposit of materials onto or into land under controlled or regulated conditions.

3.2.5 *non-process discarded material, n*—material generated and disposed of at a manufacturing facility that is unrelated to a manufacturing process.

3.2.5.1 *Discussion*—Examples include, non-process materials from office activities, construction or demolition projects, or ground maintenance.

3.2.6 *process discarded material, n*—material generated and disposed of at a manufacturing facility that is related to a manufacturing process.

3.2.6.1 *Discussion*—Disposal of nonconforming process materials that cannot be reworked or raw material packaging are examples of process discarded material.

3.2.7 *regulated material, n*—discarded material that is officially classified by relevant local, national, or international agencies or jurisdictions having statutory authority to establish waste classification.

3.2.8 *re-use, n*—materials that have not reached their useful end of life and are transferred to an entity that can use the material or product again in its current state.

3.2.8.1 *Discussion*—Computers or laboratory equipment donated to school and off-spec finished goods donated to a technical school are examples of re-use.

3.2.9 *special material, n*—class of materials having unique regulatory disposal requirements because of potential human or environmental impacts that shall be managed to minimize the risk of harm to the environment or human health, or both.

3.2.9.1 *Discussion*—Fluorescent light bulbs, lithium batteries, asbestos, radioactive materials, halon, and pesticides are examples of special material.

4. Significance and Use

4.1 This classification can be used to classify material outputs from manufacturing facilities and associated support facilities. This classification does not include classification of emissions to air or water.

4.2 This classification can be used to classify discarded materials for marketing claims associated with discarded materials generation and development of consistent tracking metrics for manufacturing facilities.

5. Basis of Classification

5.1 Materials shall be classified according to the steps in this section. See [Fig. 1](#) and [Table 1](#) for further guidance on classification.

5.2 *Step 1: Type of Material*—Discarded materials shall be classified into one of the following:

5.2.1 Non-Process Discarded Material

5.2.2 Process Discarded Material

5.3 *Step 2: Classification*—Discarded materials shall be further classified according to classification status.

5.3.1 *Regulated Material*

5.3.1.1 Special

5.3.1.2 Hazardous or

5.3.2 *Unregulated*

5.4 *Step 3: Location*—Materials shall be further classified according to the location of disposition.

5.4.1 On-site or

5.4.2 Off-site

5.5 *Step 4: Disposition*—Materials shall be further classified into one of the following final arrangement types:

5.5.1 Re-use

5.5.2 Recycle or

5.5.3 Treatment

5.6 *Step 5: Treatment*—Treatment for materials include the following types of material treatment facilities:

5.6.1 Landfill

5.6.2 Incineration

5.6.3 Anaerobic digestion

5.6.4 Aerobic digestion and

5.6.5 Other

6. Classification

6.1 All discarded materials shall be classified per [Section 5](#) using abbreviations detailed in [Table 1](#).

6.1.1 For example, process discarded material sent from one manufacturing facility to another for recycling would be classified as PUFR [Process discarded material (P), Unregulated (U), Sent off-site (F), for Recycling (R)].

6.2 Additional classification may be included and shall be tracked separately.

6.2.1 For example, discarded materials may be further classified based on the presence of feedstock energy content for the purpose of life-cycle inventories.

7. Keywords

7.1 discarded materials; waste; waste treatment

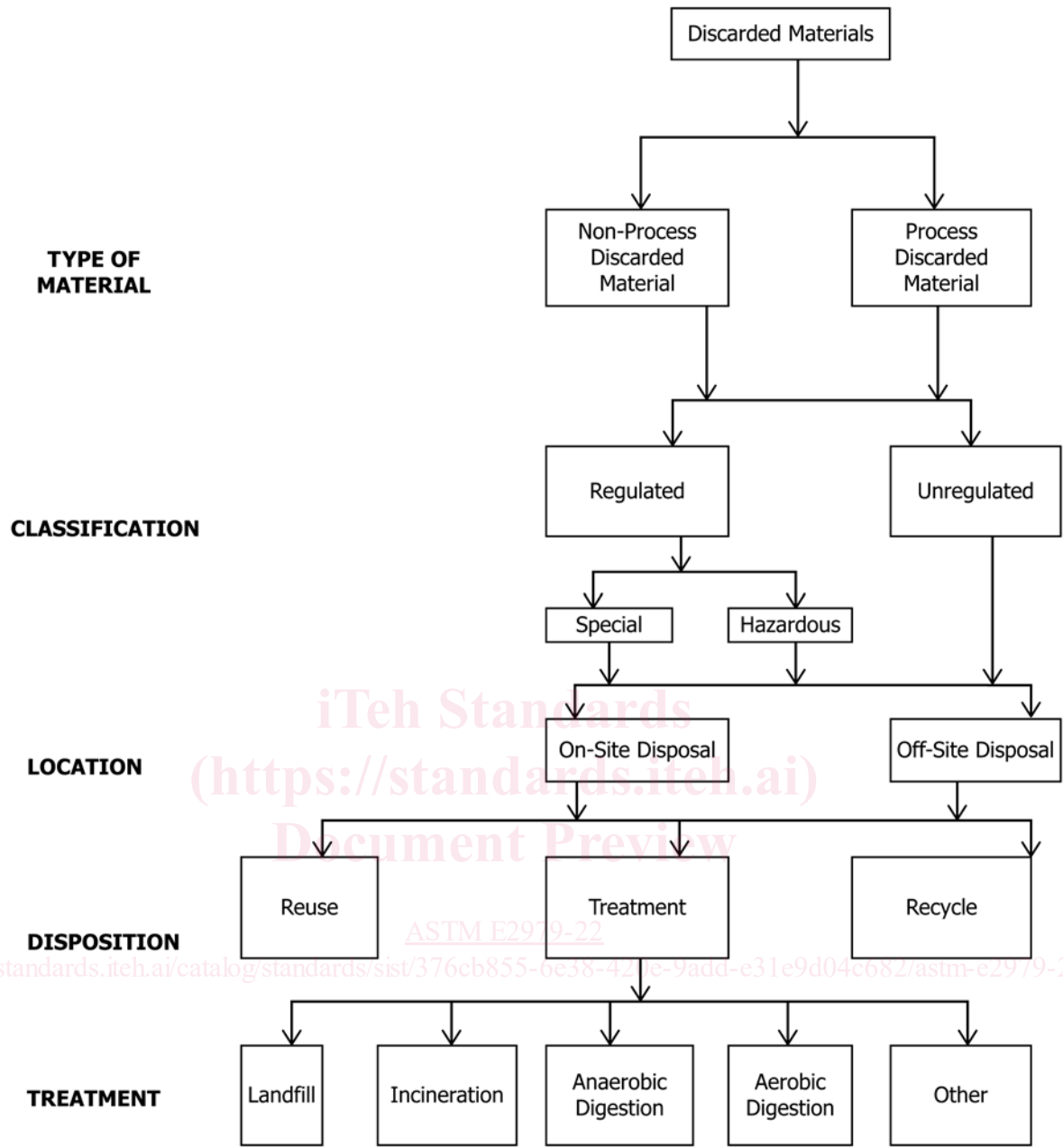


FIG. 1 Manufacturing Facility Discarded Material Classification Flowchart

TABLE 1 Discarded Materials Classification System

1. Discarded Materials	2. Classification	3. Location	4. Disposition	5. Treatment
Process Discarded Material (P)	Regulated (R)	On-site (O)	Re-use (U)	Landfill (1)
Non-Process Discarded Material (D)	Special (1)	Off-site (F)	Recycle (R)	Incineration (2)
	Hazardous (2)		Treatment (T)	Anaerobic digestion (3)
	Unregulated (U)			Aerobic digestion (4)
				Other (5)