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Standard Terminology for Waste and Waste Management¹

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1. Scope

1.1 This terminology contains standard definitions of terms used in the general area of waste and waste management. It is intended to promote understanding by providing precise technical definitions of terms used in the standards developed by Committee D34 and its subcommittees.

1.2 Terms used only within an individual standard, and having a meaning unique to that standard, may be defined or explained in the terminology section of that individual standard.

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

1.4 *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

- D1129 Terminology Relating to Water
- D4439 Terminology for Geosynthetics
- D4448 Guide for Sampling Ground-Water Monitoring Wells
- D4547 Guide for Sampling Waste and Soils for Volatile Organic Compounds
- D4646 Test Method for 24-h Batch-Type Measurement of Contaminant Sorption by Soils and Sediments
- D4790 Terminology of Aromatic Hydrocarbons and Related Chemicals

- D4874 Test Method for Leaching Solid Material in a Column Apparatus (Withdrawn 2021)³
- D5120 Test Method for Inhibition of Respiration in Microbial Cultures in the Activated Sludge Process (Withdrawn 2014)³
- D5231 Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste
- D5285 Test Method for 24-Hour Batch-Type Measurement of Volatile Organic Sorption by Soils and Sediments (Withdrawn 2008)³
- D5368 Test Methods for Gravimetric Determination of Total Solvent Extractable Content (TSEC) of Solid Waste Samples (Withdrawn 2014)³
- D5369 Practice for Extraction of Solid Waste Samples for Chemical Analysis Using Soxhlet Extraction (Withdrawn 2016)³
- D5468 Test Method for Gross Calorific and Ash Value of Waste Materials (Withdrawn 2016)³
- D5660 Test Method for Assessing the Microbial Detoxification of Chemically Contaminated Water and Soil Using a Toxicity Test with a Luminescent Marine Bacterium (Withdrawn 2014)³
- D5679 Practice for Sampling Consolidated Solids in Drums or Similar Containers
- D5680 Practice for Sampling Unconsolidated Solids in Drums or Similar Containers
- D5743 Practice for Sampling Single or Multilayered Liquids, with or Without Solids, in Drums or Similar Containers
- D5744 Test Method for Laboratory Weathering of Solid Materials Using a Humidity Cell
- D5745 Guide for Developing and Implementing Short-Term Measures or Early Actions for Site Remediation
- D5746 Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities
- D5759 Guide for Characterization of Coal Fly Ash and Clean Coal Combustion Fly Ash for Potential Uses
- D5792 Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives

¹ This terminology is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.94 on Terminology.

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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 The last approved version of this historical standard is referenced on www.astm.org.

- D5956 Guide for Sampling Strategies for Heterogeneous Wastes
- D6008 Practice for Conducting Environmental Baseline Surveys
- D6044 Guide for Representative Sampling for Management of Waste and Contaminated Media
- D6051 Guide for Composite Sampling and Field Subsampling for Environmental Waste Management Activities
- D6063 Guide for Sampling of Drums and Similar Containers by Field Personnel
- D6250 Practice for Derivation of Decision Point and Confidence Limit for Statistical Testing of Mean Concentration in Waste Management Decisions (Withdrawn 2018)³
- D6270 Practice for Use of Scrap Tires in Civil Engineering Applications
- D6311 Guide for Generation of Environmental Data Related to Waste Management Activities: Selection and Optimization of Sampling Design
- D6323 Guide for Laboratory Subsampling of Media Related to Waste Management Activities
- D6346 Guide for Accepting, Segregating, and Packaging Materials Collected Through Household Hazardous Waste Programs
- D6538 Guide for Sampling Wastewater With Automatic Samplers
- D6582 Guide for Ranked Set Sampling: Efficient Estimation of a Mean Concentration in Environmental Sampling (Withdrawn 2012)³
- D6661 Practice for Field Collection of Organic Compounds from Surfaces Using Wipe Sampling
- D6700 Guide for Use of Scrap Tires as Tire-Derived Fuel
- D6759 Practice for Sampling Liquids Using Grab and Discrete Depth Samplers
- D6842 Guide for Designing Cost-Effective Sampling and Measurement Plans by Use of Estimated Uncertainty and Its Components in Waste Management Decision-Making (Withdrawn 2015)³
- D6956 Guide for Demonstrating and Assessing Whether a Chemical Analytical Measurement System Provides Analytical Results Consistent with Their Intended Use
- D6982 Practice for Detecting Hot Spots Using Point-Net (Grid) Search Patterns
- E135 Terminology Relating to Analytical Chemistry for Metals, Ores, and Related Materials
- E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
- E456 Terminology Relating to Quality and Statistics
- E702 Specification for Municipal Ferrous Scrap
- E708 Specification for Waste Glass as a Raw Material for the Manufacture of Glass Containers
- E711 Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter (Withdrawn 2011)³
- E828 Test Method for Designating the Size of RDF-3 From its Sieve Analysis (Withdrawn 2009)³
- E850 Guide for Characterization of Inorganic Process Wastes for Use as Structural Fill (Withdrawn 2019)³
- E856 Definitions of Terms and Abbreviations Relating to Physical and Chemical Characteristics of Refuse Derived Fuel (Withdrawn 2011)³
- E868 Test Methods for Conducting Performance Tests on Mechanical Conveying Equipment Used in Resource Recovery Systems (Withdrawn 2013)³
- E884 Practice for Sampling Airborne Microorganisms at Municipal Solid-Waste Processing Facilities (Withdrawn 2021)³
- E889 Test Method for Composition or Purity of a Solid Waste Materials Stream
- E897 Test Method for Volatile Matter in the Analysis Sample of Refuse-Derived Fuel (Withdrawn 2011)³
- E929 Test Method for Measuring Electrical Energy Requirements of Processing Equipment (Withdrawn 2014)³
- E943 Terminology Relating to Biological Effects and Environmental Fate
- E949 Test Method for Total Moisture in a Refuse-Derived Fuel Laboratory Sample (Withdrawn 2011)³
- E953/E953M Practice for Fusibility of Refuse-Derived Fuel (RDF) Ash
- E955 Test Method for Thermal Characteristics of Refuse-Derived Fuel Macrosamples (Withdrawn 2017)³
- E959 Test Method for Characterizing the Performance of Refuse Size-Reduction Equipment
- E1138 Terminology for Technical Aspects of Products Liability Litigation (Withdrawn 1995)³
- E1248 Practice for Shredder Explosion Protection
- E1266 Practice for Processing Mixtures of Lime, Fly Ash, and Heavy Metal Wastes in Structural Fills and Other Construction Applications
- E1527 Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
- E1528 Practice for Limited Environmental Due Diligence: Transaction Screen Process

3. Significance and Use

3.1 This terminology defines terms and specialized meanings of terms in the subject areas of waste and management of waste.

3.2 This terminology is not intended for subjects other than waste and waste management. For terms applicable to other subject areas, the appropriate terminology standard(s) should be consulted. See the current edition of the Compilation of ASTM Standard Definitions⁴ and the list of terminology standards cited therein.

3.3 Standards relating to subcategories of waste or waste management may use terms defined more narrowly than those included here. The more specialized terminology standards relating to the applicable specific subcategory, or terms defined within individual standards, or both, should be consulted for the exact meaning intended within a given standard.

3.4 The Thesaurus on Resource Recovery Terminology (Special Technical Publication (STP) 832)⁵ contains many

⁴ *Compilation of ASTM Standard Definitions*, ASTM, 8th edition, 1994.

⁵ *Thesaurus on Resource Recovery Terminology*, ASTM STP 832, ASTM, 1983.

terms and may be useful for those not listed in terminology standards. However, a definition in a standard terminology shall be considered governing when the term is used in the sense or meaning defined therein.

3.5 Statistical terms are not defined in this terminology to the extent that the terms, when used regarding waste and management of waste, have the same meanings as in Practice E177 or Terminology E456.

3.6 Regulatory terms are often developed by regulatory agencies for special regulatory purposes and may have technical content or meaning different from terms defined herein. When a regulatory term exists that differs in meaning from a term given here, the regulatory term should be considered to take precedence for regulatory matters.

4. Terminology

accepts, *n*—the output stream from a materials separation device that contains the highest concentration (purity) of the components that the device is designed to separate.

accuracy, *n*—closeness of a measured value to the true or an accepted reference or standard value. **E135, D6311**

acid producing potential (AP), *n*—the potential for a solid material sample to produce acidic effluent, based on the percent of sulfide contained in that sample as iron-sulfide mineral (for example, pyrite or pyrrhotite). The AP is commonly converted to the amount of calcium carbonate required to neutralize the resulting amount of acidic effluent produced by the oxidation of contained iron sulfide minerals; it is expressed as the equivalent tons of calcium carbonate per 1000 tons of solid material. The AP is therefore calculated by multiplying the percent of sulfide contained in the material by a stoichiometric factor of 31.25. **D5744**

action level (AL)—the level above or below which will lead to the adoption of one of two alternative actions. **D6956**

adiabatic calorimeter, *n*—a calorimeter that has a jacket temperature adjusted to follow the calorimeter temperature as closely as possible so as to maintain zero thermal head. **D5468**

air drying—a process of partial drying of RDF-3 to bring its moisture content near to equilibrium with the atmosphere in the room in which the sieving is to take place. **E828**

air drying—a process of partial drying of RDF to bring its moisture content near to equilibrium with the atmosphere in which further reduction, division, and characterization of the sample are to take place. In order to bring about the equilibrium, the RDF is usually subjected to drying under controlled temperature conditions ranging from 30 to 40 °C. **E949**

analysis, *n*—the activity to determine the proximate and ultimate analysis, fuel value and size specification of TDF. **D6700**

analysis of variance (ANOVA), *n*—a statistical method of decomposing (or breaking down) the total variance and

estimating or testing its contributing component variances for statistical significance. **D6842**

analyte—the constituent to be measured. **D6956**

analytical unit, *n*—the actual amount of the sample material analyzed in the laboratory. **D6044**

applicable or relevant and appropriate requirements (ARAR)—those requirements, cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that show either a direct correspondence or address problems or situations sufficiently similar at a site to show that they are well suited for application. **D5745**

asbestos—six naturally occurring fibrous minerals found in certain types of rock formations. Of the six, the minerals chrysotile, amosite, and crocidolite have been most commonly used in building products. When mined and processed, asbestos is typically separated into very thin fibers. Because asbestos is strong, incombustible, and corrosion-resistant, asbestos was used in many commercial products beginning early in this century and peaking in the period from World War II into the 1970s. When inhaled in sufficient quantities, asbestos fibers can cause serious health problems. **D6008**

asbestos-containing material (ACM)—any material or product that contains more than 1 % asbestos. **D6008**

as-determined basis, *n*—analytical data obtained from an analysis sample after conditioning and preparation which represent the numerical values obtained at the particular moisture and ash level in the sample at the time of analysis.

ash, *n*—the residue remaining after ignition of a substance as determined by definite prescribed methods.

DISCUSSION—Ash may not be identical in composition or quantity with the inorganic substances present in the analysis sample before ignition.

as-received basis, *n*—test data calculated to the condition of the sample as it arrived in the laboratory and before any laboratory processing or conditioning.

attribute, *n*—a quality of samples or a population. **D5956, D6311**

auxiliary variable, *n*—the secondary characteristic or measurement of interest.

DISCUSSION—In ranked set sampling, information contained in an auxiliary variable is useful for ranking the samples. This ranking may mimic the rankings of the samples with respect to the values of the primary variable when there is correlation between the auxiliary variable and the primary variable. Auxiliary information may include visual inspection, inexpensive quick measurement, knowledge of operational history, previous site data, or any other similar information. **D6582**

balanced design, *n*—a statistical study where replication in each of the levels of ANOVA is identical. **D6842**

bead wire, *n*—a high tensile steel wire surrounded by rubber, which forms the bead of a tire that provides a firm contact to the rim. **D6270, D6700**