



Designation: ~~D4979~~ – ~~12~~ D4979 – 19

## Standard Test Method Practice for Physical Description Screening Analysis in Waste<sup>1</sup>

This standard is issued under the fixed designation D4979; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### 1. Scope

~~1.1 This test method is used to identify wastes by describing certain physical properties. It has been developed as a rapid but effective means for visually screening wastes when received in the laboratory or during collection at the sampling site.~~

~~1.2 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. Specific hazard and warning information is given in 9.1.6.~~

### 2. Referenced Documents

~~2.1 ASTM Standards:<sup>2</sup>~~

~~D5681 Terminology for Waste and Waste Management~~

### 3. Terminology

~~3.1 Definitions:~~

~~3.1.1 For definition of terms used in the document refer to Terminology D5681.~~

~~3.2 Definitions of Terms Specific to This Standard:~~

~~3.2.1 screening analysis—a preliminary qualitative or semiquantitative test that is designed to efficiently give the user specific information about a waste that will aid in determining waste identification, process compatibility, and safety in handling.~~

### 4. Summary of Test Method

~~4.1 Samples are inspected and the physical appearance is recorded, including color, turbidity, viscosity, physical state, layering, and any other observable attribute (for example, texture).~~

### 5. Significance and Use

~~5.1 This test method is intended for use by those in the waste management industries to aid in describing the physical characteristics of waste.~~

~~5.2 This test method has two uses. One is to visually screen wastes being received at the laboratory to identifying discrepancies between the waste, manifest, and historical descriptions. The other use is to visually examine soil and water samples while they are being collected. This information, along with professional judgment during sample collection, can be used to increase the knowledge of the site contamination by increasing or reducing the number of samples collected based on visible indication of contamination or lack of visible indication of contamination. For example, if a soil or groundwater sample is collected “up gradient” of the area of known or suspected contamination to obtain site background concentrations, and the sample appears contaminated, the up gradient area can be relocated during that sampling event. Visual observation could also show that the sampling parameters need to be increased or decreased. This may reduce or eliminate the need for additional sampling trips to the field.~~

### 6. Interferences

~~6.1 Opaque sample containers require removal of a representative sample sufficient for complete observation. It is recommended that a representative portion be transferred to a clean, dry, clear container.~~

<sup>1</sup> This test method practice is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.05 on Screening Methods.

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## 7. Apparatus

7.1 *Disposable Spatula or Eye Dropper.*

7.2 *Clear Glass Sample Containers.*

## 8. Sampling

8.1 Samples should be obtained in clear glass containers.

8.2 Liquid samples may require time to stabilize (that is, until layers reform).

8.3 It may be helpful to pick up the sample container and tilt, rotate, swirl, invert it or to manipulate the sample with a clean, disposable spatula or eye dropper.

8.4 In the laboratory, if necessary, allow the sample to come to room temperature in a sealed container. For example, frozen material should be allowed to thaw completely.

## 9. Procedures

9.1 Inspect the waste sample and describe the physical attributes noting the following areas:

9.1.1 *Color*—Describe the visual color of the sample. If more than one color is present, list colors in decreasing order of prominence. Additional descriptive terms may be useful (for example, purple with swirls of blue and flecks of yellow).

9.1.2 *Turbidity*—Describe liquid samples or liquid portions of samples in terms of clear (transparent), cloudy (translucent), or opaque.

9.1.3 *Viscosity*—Describe the viscosity of liquids and sludges. Describe viscosity in reference to viscosity like water, medium viscosity like syrup or motor oil, or high viscosity like molasses or warm tar. Tip the container sideways or invert to note the viscosity. If a sample is tipped 90° for 5 s and has no visible flow, report it as such.

9.1.4 *Physical State*—Describe as liquid, solid, sludge, powder, granular, etc. Note any unusual physical attributes. Note the general range of particle size, (fine to coarse) and the presence of larger chunks. The presence of any free liquids must be noted, as must the presence of (or for stabilized wastes, the absence of) sorbants (absorbants and adsorbents) as a sole treatment. Such sorbants might include sawdust, ground or whole corn cobs, or vermiculite.

9.1.5 *Layering*—Describe any layering in terms of rough percentages of the total sample. Record the color, turbidity, and physical state of each layer. Describe multilayered samples by listing the layers and their percentages from the top downward (that is, 5 % golden transparent medium-viscosity liquid over 90 % black opaque low-viscosity liquid over 5 % blue translucent low-viscosity liquid):

NOTE 1—The presence of oil, water, or heavier fractions such as halogenated solvents can be confirmed by noting the solubility or insolubility of each phase and, if insoluble, noting if it is heavier or lighter than water.

9.1.6 *Odor*—Note only obvious incidental odors noticed during sample handling. (**Warning**—Intentional smelling of samples must *not* be performed under any circumstances!)

9.2 All descriptions must be recorded in a complete and concise manner.

## 10. Precision and Bias

10.1 No statement is made about either the precision or bias of this test method since the results of the test are based on visual observations only.

## 11. Keywords

11.1 color; physical description; screening analysis; turbidity; viscosity

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