



Standard Guide for Descriptive Analysis of Shampoo Performance¹

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1. Scope

1.1 The objective of this guide is to provide procedures which may be used in the design, execution, and analysis of studies to quantitatively assess the objective sensory attributes of shampoos. This is one of many appropriate techniques used in the hair-care industry. These attributes can then be used to define performance of shampoos and to provide direction in product formulation, research guidance testing, and claim substantiation. This guide includes the sensory properties involved in dispensing a product, as well as the attributes pertinent to shampooing tresses, half and whole heads. Although this guide is specific to shampoos, the procedures should be applicable to most hair-care products.

1.2 Guidelines are provided for the definition of terminology, procedures for manipulation of products, identification/selection of hair type, and judge training. References for rating scales are not provided in this guide. The user should be aware that some sensory practices may require the use of attribute references (anchors) when training the judges.

2. Referenced Documents

2.1 ASTM Standards:

E 253 Terminology Relating to Sensory Evaluation of Materials and Products²

2.2 Other Documents:

ASTM Manual 26 Sensory Testing Methods: Second Edition³

ASTM STP 758 Guidelines for the Selection and Training of Sensory Panel Members³

ASTM Manual 30 Relating Consumer, Descriptive, and Laboratory Data to Better Understand Consumer Responses³

ASTM Manual 13 Descriptive Analysis Testing for Sensory Evaluation³

21 CFR 50.25⁴

3. Terminology

3.1 Definitions:

3.1.1 *cosmetologist*—a licensed, trained professional who has been certified by state or government agencies to apply hair-care products to human heads. These individuals may be alternately described as beauticians, stylists, hairdressers, or cosmetologists.

3.1.2 *subjects*—those individuals recruited to participate in a study for the quality or condition of their hair, to serve as sample carriers.

3.1.3 *trained panel*—a group of judges who have been formally trained to evaluate the visual and tactile properties of shampoo or hair, using a standard descriptive analysis method which quantifies attributes on a rating scale over a set time period. The number may vary depending on the complexity of the test and the skill of the judge.

4. Equipment

4.1 The following equipment may be used during the evaluation process:

4.1.1 General:

4.1.1.1 *Light Source*—A consistent light source is recommended for use during evaluation of shine or luster. It is important to control the amount of light as well as the angle and distance from the hair.

4.1.1.2 *Water Source*—Temperature and hardness should be consistent. If controlled temperature sinks are used, they should all have the same, consistent flow rate.

4.1.1.3 *Blow Dryer*—Specifications should be documented (that is, wattage, voltage, power level, air velocity, and temperature).

4.1.1.4 *Syringes/Pipettes, Petri Dishes.*

4.1.1.5 *Towels* (cloth or paper, or both).

4.1.1.6 *Combs*—It is recommended that all combs be identical in material and construction (that is, tooth length, thickness, and distance between teeth). They should be appropriately cleaned before each use. For evaluations on subject heads, combs must be sanitized properly prior to use with each test subject.

4.1.1.7 *Thermometer.*

4.1.1.8 *Hygrometer.*

4.1.2 *Additional Equipment for Evaluation on Tresses:*

¹ This guide is under the jurisdiction of ASTM Committee E18 on Sensory Evaluation of Materials and Products and is the direct responsibility of Subcommittee E18.07 on Personal Care and Household Evaluation.

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² *Annual Book of ASTM Standards*, Vol 15.07.

³ Available from ASTM Headquarters, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

⁴ *Code of Federal Regulations*, available from U.S. Government Printing Office, Washington, DC 20402.