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Standard Guide for Sensory Claim Substantiation¹

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INTRODUCTION

Formats or standards for testing related to sensory claim substantiation cannot be considered without a frame of reference of where that format or standard would fit within the legal framework that surrounds the topic. Product sensory claims tests are performed for three basic reasons: (1) *Comparison of Products*—Determines how one product compares to another, usually a competitor or earlier version of itself. (2) *Substantiation of Claims*—Enables marketing personnel to use positive references through advertising or packaging, or both, in the presentation of the product to the consumer. (3) *Test Performance*—Ascertains and establishes the tested product performance within the scope of its intended use.

The risk associated with each claim is assessed when considering claims substantiation. Compelling and aggressive claims are sure to be scrutinized closely by competitive firms, and if inconsistencies are found through competitive test data, the claims could be challenged in one or more of the following venues: (1) National Advertising Division (NAD) of the Advertising Self-Regulatory Council (ASRC), (2) one or more media, such as print, broadcast, or electronic media, (3) Consumer Advocacy Organizations, and (4) Civil or Federal courts. No single test design or standard test will prevent challenges. The criteria used by each of the potential forums are not identical and are constantly evolving. With the introduction of new technologies coupled with changing consumer demands, testing processes and protocols that were sufficient five or ten years ago may not hold up under today's criteria and scrutiny. Testing requirements of the future can only be a matter for speculation. The one constant is that, as advocates of their clients' positions, attorneys will defend their clients' testing processes and protocol while questioning with great detail every aspect of their competitor's protocol in the attempt to sway the arbiter to agree that their clients are in the right. Legal counsel should be part of any team developing claim substantiation.

This guide demonstrates what a group of professionals who are skilled in the science of testing consider appropriate from a scientific and technical standpoint, and represents an effective method for both defendant and challenger to determine the viability of a sensory claim. The key word is "appropriate." If a particular aspect of a test, or method, is not appropriate for a specific application, it should not be used. Care should be taken to clearly define the reasons and data supporting a deviation from the standard, as any departure invites scrutiny. Since departures are inevitable, the word "should" is used in this guide to indicate when other techniques may have applications in certain unusual circumstances. Whenever a test protocol has been completed, it should be critiqued for weaknesses, including whether experts in the relevant field would consider the research objectively designed, conducted, and analyzed, using procedures that give accurate and reliable results. If weaknesses are found, corrective action should be taken, since the competition may point out any weakness or discrepancy and challenge the study.

While the scientific and technical community identifies the appropriateness of a research method used to support a sensory claim, the legal community evaluates substantiation for legal claims using "reasonableness" as the criterion. With the importance of having a legal "reasonable basis" for a claim, the question remains, "What is reasonable?" Unfortunately, there is no specific answer to that legal

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question, as it will depend on the type of claim, product application and use, applicable regulations where the product is sold, and other factors. These considerations, market pressures (such as timing), and testing budgets can influence and impact the protocols to support a specific claim. This guide provides principles and considerations that need to be addressed for good sensory and consumer testing practices.

1. Scope

1.1 This guide covers reasonable practices for designing and implementing sensory tests that validate claims pertaining only to the sensory or perceptual attributes, or both, of a product. This guide was developed for use in the United States and must be adapted to the laws and regulations for advertisement claim substantiation for any other country. A claim is a statement about a product that highlights its advantages, sensory or perceptual attributes, or product changes or differences compared to other products in order to enhance its marketability. Attribute, performance, and hedonic claims, both comparative and non-comparative, are covered. This guide includes broad principles covering selecting and recruiting representative consumer samples, selecting and preparing products, constructing product rating forms, test execution, and statistical handling of data. The objective of this guide is to disseminate good sensory and consumer testing practices. Validation of claims should be made more defensible if the essence of this guide is followed.

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1.2 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

E253 Terminology Relating to Sensory Evaluation of Materials and Products

E1885 Test Method for Sensory Analysis—Triangle Test

E2164 Test Method for Directional Difference Test

2.2 ASTM Publications:³

ASTM Manual MNL 13 Descriptive Analysis Testing for Sensory Evaluation

ASTM Manual MNL 26 Sensory Testing Methods: Second Edition

STP-913STP913 Physical Requirement Guidelines for Sensory Evaluation Laboratories

3. Terminology

3.1 Definitions:

3.1.1 Terms used in this guide are in accordance with Terminology E253. Additional terms are listed below.

3.2 ~~Definitions—Definitions of Terms Specific to This Standard:~~ Terms used in this guide are in accordance with Terminology E253. Additional terms are as follows:

3.2.1 ~~attribute difference rating test—test, n—~~this test also determines if one or more specific attributes differ between two samples. ~~The samples; the intensities of the attributes are measured on rating scales showing several degrees of intensity. One intensity; one or more specific attributes of the product that relate to the claim are rated. Samples rated; samples are presented, and the panelists' task is to evaluate and assign each test sample an intensity to reflect the amount of the designated attribute(s).~~

3.2.2 ~~attribute difference tests—tests, n—~~in these test methods, the attribute of interest is defined prior to testing, and the panelists are trained to be able to identify the attribute in question and select or rate the relative intensity of that attribute. ~~It attribute; it is not necessary to evaluate every occurring attribute, only the attributes being addressed in the claim.~~

3.2.3 ~~ceiling effects—effects, n—~~this typically occurs when the majority of the scores occur toward the top of a rating scale. ~~When scale; when the products are well-liked, there is not a sufficient amount of scale available to the respondents to differentiate the products. Variation products; variation in rating scores is compressed, making mean-based statistical tests misleading. Therefore, misleading; therefore, analysis should be performed using a more robust statistical model that does not have distributional requirements and is less prone to outlier influence such as multinomial logistic regression.~~

3.2.4 ~~central location testing (CLT)—(CLT), n—~~method of testing that provides maximum control over product preparation and usage. ~~Central usage; central location testing assures that the participant actually evaluated the product in question and provides his or her own opinion immediately following evaluation, rather than relying on past usage or recollection of a CLT.~~

3.2.5 ~~comparative claims—claims, n—~~designed to compare similarities and differences between two or more products. The basis for comparison can be within the same brand, between two brands, or between a brand and other products in the category.

3.2.6 ~~equivalence claims—claims, n—~~in equivalence claims, two products are claimed to be equivalent in one or more particular feature.

3.2.7 ~~experimental error—error, n—~~variability between the ~~panelist~~. ~~This error can be accounted for by using more than one panelist to test each sample.~~

3.2.8 ~~home use testing (HUT)—(HUT), n—~~refers to tests that allow respondents to use the products in a more natural environment, rather than the controlled environment.

3.2.9 ~~measurement error—error, n—~~repeatability within the individual ~~panelist~~. ~~This error can be accounted for by having each panelist test a particular sample more than once.~~

3.2.10 ~~monadic or single product tests—tests, n—~~product tests where only one product is experienced and rated.

3.2.11 ~~pattern effect—effect, n—~~any pattern in order will be detected quickly.

3.2.12 ~~product variability—variability, n—~~batch-to-batch variation. This error can be accounted for by testing multiple and representative batches of a product.

3.2.13 ~~self-administered questionnaire—questionnaire, n—~~questionnaires independently completed by the respondent are referred to as self-administered.

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

3.1.14 *superiority claims*—a superiority claim is supported if a statistically significant proportion of the respondents prefer the advertiser's product.

3.2.14 *superiority claims—claims, n*—superiority claims assert a higher level of performance or liking relative to another brand. ~~Superiority brand; superiority~~ claims can be opposed to competitive brands (for example, "cleans better than brand Z") or opposed to an earlier formula of the brand (for example, "now more cleaning power than ~~before~~"); a superiority claim is supported if a statistically significant proportion of the respondents prefer the advertiser's product.

3.2.15 *unsurpassed claims—claims, n*—in unsurpassed claims, the claim stated indicates that the product(s) selected for comparison is not better/higher (or greater than) in some way to the target product(s) for which the analysis is executed.

4. Basis of Claim Classification

4.1 A fundamental step in advertising claim substantiation is creating an explicit statement of the claim prior to actual testing. The statement is then forwarded to all parties concerned in the substantiation process. Concerned parties could include marketing, marketing research, legal, consumer testing, sensory evaluation, research suppliers, etc. The statement is essential as it can encourage collaboration in terms of corporate resources, confirms the selection of appropriate test methods, and has the potential to maximize the chance of making reliable business decisions about the proposed claim, pending the results of substantiation research. Collaboration among all involved parties prior to executing substantiation research is critical in achieving the best results. All involved parties should meet and agree (perhaps several times) prior to implementing the substantiation research.

4.2 Familiarity with the general classification of advertising claims is important in developing clear statements of claims at an early stage and for developing a rational plan for testing. This familiarity also facilitates the process of selecting appropriate testing methods, among the many types of methods available to the consumer/sensory science professional. Each method answers specific questions and may support one type of claim but not another. Therefore, the consumer/sensory science function provides an important source of information and experience in claim substantiation and will provide much of the definition of testing methodology. There are multiple ways to support claims depending on the characteristics of the claim. Two approaches are consumer based and trained panel based evaluations.

4.3 Advertising claims can be divided into two fundamental classifications: ~~Comparative~~ comparative and ~~Non-Comparative~~ non-comparative. The distinction between the two classifications is whether a comparison is made relative to an existing product (advertiser's or competitor's) or to itself.

4.4 *Comparative Claims—Claims*—Comparative claims are designed to compare similarities and differences between two or more products. The basis for comparison can be within the same brand, between two brands, or between a brand and other products in the category.

4.4.1 Comparative claims generally take one of three forms: superiority, equivalence, or unsurpassed. Superiority, equivalence, or unsurpassed claims are further sub-classified into two central areas of application: hedonic and attribute/perception. Hedonics broadly concern measuring the degree of liking and preference—~~either preference; either~~ liking overall or liking that is limited to one or more specific attributes. Attribute/perception claims apply to intensity when measuring one or more specific product attributes.

4.4.2 *Equivalence Claims*—Equivalence claims are claims that assert equivalent levels of performance or liking when comparing a particular product to another product. In general, equivalence claims are made relative to a market/category leader. Two products are not claimed to be exactly equal in one or more particular features; rather, the products are claimed to be sufficiently similar as to be equivalent from a practical perspective.

4.4.2.1 *Hedonic—Hedonic*: "~~Tastes as good as brand X.~~"

(1) "Tastes as good as brand X."

4.4.2.2 *Attribute/Perception*: "~~Our product reduces odors as much as brand X.~~"

(1) "Our product reduces odors as much as brand X."

(2) "Our product lasts as long as brand X."

(3) "Our cake is as moist as the leading brand."

"Our product lasts as long as brand X."

"Our cake is as moist as the leading brand."

4.4.2.3 *Overall Equivalence*: "~~We're just the same, except for the price.~~"

(1) "We're just the same, except for the price."

(2) "You'll never know the difference between us and brand X."

"You'll never know the difference between us and brand X."

4.4.3 *Unsurpassed Claims*—In unsurpassed claims, the claim stated indicates that the product(s) selected for comparison is not better/higher (or greater than) in some way to the target product(s) for which the analysis is executed. Examples of unsurpassed claims include the following types:

4.4.3.1 *Hedonic*: "~~No other product is better than our product.~~"

(1) "No other product is better than our product."

(2) "No other product is more liked for butter flavor."