



Designation: ~~E1879~~–~~20~~ E1879 – 21

Standard Guide for Sensory Evaluation of Beverages Containing Alcohol¹

This standard is issued under the fixed designation E1879; 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 guide provides guidelines specific to the sensory and consumer evaluation of alcoholic beverages, including but not limited to beer, wine, coolers, cocktails, ready to drinks, liqueurs, hard ciders, hard seltzers, and distilled spirits.

1.2 This guide ~~addresses safety, legal, panel covers~~ assessor selection, sample preparation, ~~test procedures, and code of conduct specific to alcoholic beverages.~~ serving protocols, and evaluation recommendations for specific alcoholic products.

1.3 This guide does not recommend a specific test method.

1.3 ~~The guide does not purport to address all of the nuances of testing throughout the world. Different countries have different guidelines while some countries do not have their own guidelines. The definition of a standard drink (or unit of alcohol) also differs from country to country. This guide is generally focused on testing within the US (and to an extent Canada); and even within these regions, laws could change over time. This guide covers what is generally in place currently in these areas and is suggested for countries that generally have no guidelines of their own. This guide addresses safety, regulatory, and legal concerns, but does not cover all legal rules for alcohol and sensory evaluation around the world. It is the responsibility of the user to be aware of their current local laws and regulations, corporate policies and procedures, and apply them as needed. Some useful resources are also cited in this guide confirm they haven't changed since publication.~~^(1, 2)

1.4 This guide does not cover the evaluation of raw materials or specific test methods.

1.5 *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.*

1.6 *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](#)

[E1871 Guide for Serving Protocol for Sensory Evaluation of Foods and Beverages](#)

¹ This guide is under the jurisdiction of ASTM Committee E18 on Sensory Evaluation and is the direct responsibility of Subcommittee E18.06 on Food and Beverage Evaluation.

Current edition approved Feb. 1, 2020/Sept. 1, 2021. Published February 2020/November 2021. Originally approved in 1997. Last previous edition approved in 2017/2020 as E1879 – 17/E1879 – 20. DOI: 10.1520/E1879-20.10.1520/E1879-21.

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. Terminology

3.1 For definitions of terms relating to this standard, see Terminology [E253](#).

4. Significance and Use

4.1 ~~The procedures recommended in this guide can be used for the sensory evaluation of~~ This guide outlines considerations for selecting assessors who will evaluate alcoholic beverages and recommends procedures for the evaluation of specific alcoholic beverages.

4.2 This guide ~~provides~~ gives practical suggestions to maximize ~~panelist~~ assessor safety and to minimize the risks and liabilities of the person or corporation responsible for administering ~~the sensory evaluation~~ evaluations of alcoholic beverages.

4.3 This guide also provides practical suggestions when dealing with various government agencies that are involved in distributing alcoholic beverage provides examples of informed consent forms for both Central Location Tests and Home Use Tests (see [Appendix X2 – Appendix X4](#) test products).

4.4 This guide uses a research example ([Appendix X1](#)) to frame the safety and regulatory considerations when conducting sensory evaluations of alcoholic beverage products.

NOTE 1—See also [Appendix X1](#) and STP 913 (3).

5. Safety

5.1 *Medical Condition*—Potential ~~panelists~~ assessors must be in good medical condition with no serious health problems. Inform them that they should not participate on panels if they are taking prescription or over-the-counter medications, which medications that are contraindicated when combined with alcohol. It is recommended that women who are pregnant, may be pregnant, or nursing should not participate. Recruiting should be conducted in such a way to ensure that those not meeting these medical requirements are excluded from participation.

5.2 *Sample Size*—Limit the sample volume for evaluation to an amount which will ensure the respondent will not have a blood alcohol level greater than a legal limit (see A sufficient waiting period should be arranged before assessors are allowed to drive or operate heavy machinery after sampling test product(s). [8.3.1.3](#)).

5.3 *Home Use Testing*—All products should be stored in a place where they are only accessible to individuals of legal drinking age.

3.3.1 Home Use Tests (HUTs) with alcoholic beverages are often used to determine product acceptance and how products are typically used. Regulation of transportation and storage of high proof spirits is very important; it is the responsibility of the sensory professional to inform the assessor of all legal requirements regarding transportation and storage, including whether it will be the sensory professional or the assessor who is transporting/shipping the samples.

3.3.1.1 If shipping samples, consider shipping conditions (for example, time of delivery, temperature of shipment) and ensure receipt is by a person of legal drinking age.

3.3.1.2 Assessors should be instructed to store the samples in conditions and temperatures as close to typical storage as possible (see [3.3.1.3](#)).

3.3.1.3 In addition to an informed consent form (see [5.2.1](#)), it is recommended that the following statements accompany products used in Home Use Testing where applicable. Compliance with the guidelines given are necessary to ensure that the alcoholic beverage product being given is consumed in a responsible manner. Update this list based on local laws and regulations.

- (1) Do not open test product(s) until you arrive home.
- (2) If driving with test product(s) in your vehicle, store the test product securely, safely, and well out of reach of any potential user (for example, in a cardboard box in the trunk (boot) of your vehicle).
- (3) Do not drive or operate heavy machinery after sampling test product(s).
- (4) Do not leave the test product(s) in a place where it is accessible to individuals under the legal drinking age.

(5) (If there is a need to return used beverage containers or unused samples) All containers/unused samples must be returned to _____. You must _____. (The sensory professional shall include instructions based on local laws and regulations. This could be emptying containers, placing containers out of reach, and so forth.)

5.4 *Central Location or Intercept Testing: Recommended Serving Volumes:*

5.4.1 Alcohol is measured in units of standard drinks. However, the amount of alcohol in a standard drink differs between countries, so caution should be taken if sensory testing is being conducted across different countries (1, 2).³ It is easiest to convert between different countries’ standard drinks using grams (3). See Table 1 for examples of standard drink amounts from six different countries.

5.4.2 Standard drink equivalents are a unit of measurement frequently used to help consumers more easily understand the units of alcohol consumed. In the United States the standard drink of 14 grams of alcohol is 355 mL (12 oz) of 5 % beer, or 148 mL (5 oz) of 12 % wine, or 44 mL (1.5 oz) of 40 % distilled spirit (4). For several countries, the standard drink amount and the equivalent standard drink in the United States can be found in Refs. (3) and (5); examples for six countries are given in Table 1 (3, 5).

5.4.3 Limit the sample volume for evaluation to an amount which will ensure the respondent will not have a Blood Alcohol Concentration (BAC) greater than the legal limit.

5.4.3.1 BAC levels are either reported as the mass of alcohol per volume of blood (for example, United States, France, and Poland) or the mass of alcohol by mass of blood (for example, Norway and Russia). It is important to understand the units of BAC and know the BAC legal limit in countries, and regions within those countries, in which a sensory study is being conducted (6).

5.4.3.2 Tables 2 and 3 indicate how to calculate the BAC for males and females, respectively, based on weight and number of drinks consumed (7). It can be used to calculate the number of samples that can be served to assessors during a testing session.

5.4.4 Recommended serving volumes based on alcohol content can be calculated using the formula:

$$SV1 = \frac{SA2 \times SV2}{SA1} \tag{1}$$

where:

- SA1 = sample alcohol content,
- SV1 = total volume to be given to assessors = unknown,
- SA2 = “standard drink” alcohol content, and
- SV2 = “standard drink” volume.

NOTE 1—See Appendix X1 for further explanation and worked examples using the formula.

5.4.4.1 If sample volume would result in a BAC above the legal limit, testing should occur over multiple days.

5.4.4.2 Assessors should not have consumed alcohol the day on which they are participating in a sensory test containing alcoholic beverages.

TABLE 1 Standard Drink Amount Examples

Country	Standard Drink Amount (g)
Australia	10
Chile	14
France	12
Japan	19.75
South Africa	11.5
United States	14

^aLYFT is a trademark of Lyft, Inc.

FIG. X1.1 Sample Sponsor’s Statement of Policy

³ The boldface numbers in parentheses refer to the list of references at the end of this standard.

**TABLE 1 Blood Alcohol Concentration (B.A.C.) Chart
(Percent of Alcohol in Bloodstream)**

Your Weight (lb)	Number of Drinks ^A Consumed								
	1	2	3	4	5	6	7	8	9
100	0.029	0.058	0.088	0.117	0.146	0.175	0.204	0.233	0.262
120	0.024	0.048	0.073	0.097	0.121	0.145	0.170	0.194	0.219
140	0.021	0.042	0.063	0.083	0.104	0.125	0.146	0.166	0.187
160	0.019	0.037	0.055	0.073	0.091	0.109	0.128	0.146	0.164
180	0.017	0.033	0.049	0.065	0.081	0.097	0.113	0.130	0.146
200	0.015	0.029	0.044	0.058	0.073	0.087	0.102	0.117	0.131
220	0.014	0.027	0.040	0.053	0.067	0.080	0.093	0.106	0.119
240	0.012	0.024	0.037	0.048	0.061	0.073	0.085	0.097	0.109

**TABLE 2 Blood Alcohol Concentration (BAC, %)
Chart for Males**

Weight (lb)	Number of Standard USA Drinks ^A Consumed									
	1	2	3	4	5	6	7	8	9	10
100	.043	.087	.130	.174	.217	.261	.304	.348	.391	.435
125	.034	.069	.103	.139	.173	.209	.242	.278	.312	.346
150	.029	.058	.087	.116	.145	.174	.203	.232	.261	.290
175	.025	.050	.075	.100	.125	.150	.175	.200	.225	.250
200	.022	.043	.065	.087	.108	.130	.152	.174	.195	.217
225	.019	.039	.058	.078	.097	.117	.136	.156	.175	.195
250	.017	.035	.052	.070	.087	.105	.122	.139	.156	.17

^A One drink equals: 1 oz of 80 proof alcohol; 12 oz bottle of beer; 2 oz of 20 % wine; 3 oz of 12 % wine. Entries represent typical values in adults. standard USA drink of 14 grams of alcohol is 355 mL (12 oz) of 5 % beer, or 148 mL (5 oz) of 12 % wine, or 44 mL (1.5 oz) of 40 % distilled spirit.

TABLE 2 Recommended Serving Volume Per Sample in Liquid Ounces (29.6 mL)/Session

NOTE 1—Alcohol strength in U.S. proof is twice the content by volume. For example, a product labeled 80 % proof contains 40 % v/v alcohol.

Sample Proof Alcohol by Volume Number of Samples	1-oz	2-oz	3-oz	4-oz	5-oz
5	20.00	10.00	6.67	5.00	4.00
10	10.00	5.00	3.33	2.50	2.00
15	6.67	3.34	2.22	1.67	1.33
20	5.00	2.50	1.67	1.25	1.00
25	4.00	2.00	1.33	1.00	0.80
30	3.33	1.67	1.11	0.83	0.67
35	2.86	1.43	0.95	0.72	0.57
40	2.50	1.25	0.83	0.63	0.50
45	2.22	1.11	0.74	0.56	0.44
50	2.00	1.00	0.67	0.50	0.40
55	1.82	0.91	0.61	0.46	0.36
60	1.67	0.84	0.56	0.42	0.33
65	1.54	0.77	0.51	0.39	0.31
70	1.43	0.72	0.48	0.36	0.29
75	1.33	0.67	0.44	0.33	0.27
80	1.25	0.63	0.42	0.31	0.25
85	1.18	0.59	0.39	0.30	0.24
90	1.11	0.56	0.37	0.28	0.22
95	1.08	0.54	0.36	0.27	0.22
100	1.00	0.50	0.33	0.25	0.20
105	0.95	0.48	0.32	0.24	0.19
110	0.91	0.46	0.30	0.23	0.18

TABLE 3 Blood Alcohol Concentration (BAC, %) Chart for Females

Weight (lb)	Number of Standard USA Drinks ^A Consumed									
	1	2	3	4	5	6	7	8	9	10
100	0.05	0.101	0.152	0.203	0.253	.304	.355	0.406	.456	.507
125	0.04	0.08	.120	0.162	0.202	0.244	0.282	.324	.364	.404
150	0.034	0.068	0.101	0.135	0.169	0.203	0.237	.271	.304	.338
175	0.029	0.058	0.087	0.117	0.146	0.175	0.204	.233	.262	.292
200	0.026	0.05	0.076	0.101	0.126	0.152	0.177	.203	0.227	.253
225	0.022	0.045	0.068	0.091	0.113	0.136	0.159	.182	.204	0.227
250	0.02	0.041	0.061	0.082	0.101	.122	0.142	.162	.182	.2

^A One standard USA drink of 14 grams of alcohol is 355 mL (12 oz) of 5 % beer, or 148 mL (5 oz) of 12 % wine, or 44 mL (1.5 oz) of 40 % distilled spirit.

5.4.5 Central Locations Tests (CLTs) or Intercept Tests are often used for product evaluations under controlled conditions. Safety is essential in situations where consumers evaluate alcoholic beverage products at a central location. There are several steps that can be taken to ensure respondent safety. If possible, sensory testing should occur earlier in the day to allow a waiting period if assessors are driving after testing and need time for their BAC to reduce.

5.4.5.1 It is recommended that transportation of the assessors to and from the test location be provided. Some countries or states, or both, require it. Taxi, arranged services (for example, Uber, Lyft), or other public transportation vouchers may be provided; in more rural areas, participants may be asked to get a friend to pick them up from a short amount of time, then it slowly decreases at a rate of approximately 0.015 to 0.02 % per hour (see Table 4) the testing facility, in which case an extra incentive needs to be provided. In cases where a designated driver is used, a routine check to ensure such driver has a valid driver’s license is recommended.

(I) Example: a 150 lb female consumes two drinks resulting in a BAC of approximately 0.068 %. At the most conservative elimination rate of 0.015 %, it will take 4.5 hours after the drinking session for her BAC to go from ~0.068 to ~0.0 %. To be deemed ‘sober,’ BAC is required to be at 0.0 and legal levels of BAC for operating a vehicle vary by locale and can be as low as 0.0.

5.4.5.2 In cases when a waiting time is not attainable, or in locations where no amount of alcohol is deemed acceptable for driving, public transportation, a taxi, or a designated driver should be arranged.

5.4.5.3 Participants may not consume any alcohol prior to coming to the testing location. Consideration should also be given to how much alcohol may cause impairment, even if an assessor’s BAC is below the legal limit. Some individuals are more sensitive to the effects of alcohol and so both BAC and impairment limits should be considered when serving samples.

5.4.6 If there are concerns about assessors’ BAC before or after consuming products, their BAC may be measured, for example, with a breathalyzer.

5.5 Employee Panels:—When using employees as assessors, special consideration must be taken when their work involves the operation of equipment or any work task that can jeopardize the safety of others. Either do not allow these employees to be assessors or arrange with employee management “waiting times” after product evaluation before these employees can resume work involving these safety-related work activities.

5.5.1 When employees evaluate product(s) at their workplace, the sensory professional has additional control. This control involves scheduling panels such that employees can remain at the workplace until their blood alcohol content is reduced below legal limits (see Consider serving fewer samples so the assessor’s BAC is less than the legal limit if 8.3.1.3) to drive or operate machinery. Conducting sensory evaluations early in the day is highly recommended. they taste alcohol everyday as a function of their work.

3.5.1.1 Special considerations need to be taken when panelist’s work involves the operation of equipment or any work task that can jeopardize the safety of others. Either do not allow these employees to be panelists, or arrange with employee management “waiting times” after product evaluation before these employees can resume work involving these safety related work activities.

3.5.2 Limit the sample volume for evaluation to an amount which will ensure the employee will not have a blood alcohol level greater than a legal limit (see 8.3.1.3) or that will otherwise impair the user.

5.6 Safety Data Sheets (SDS) for ethanol should be stored on the study site premises and made available upon request to participants. Additionally, SDS should be available for compounds used as reference standards or for sensory training.

5.7 Additional resources specific to understanding the effects of age, weight, gender, and food consumption on rate of BAC change over time can be found in Ref. (9).

TABLE 4 Amount of Time to Reduce BAC (mg of alcohol per 100 mL of blood)

Hours since first drink	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Subtract from BAC	.015	.030	.045	.060	.075	.09

4. Regulatory

4.1 Investigate and meet federal, state/provincial, and local regulations whenever studies are to be conducted that include the storage, handling, shipping, serving, or consumption of alcoholic beverages.

4.2 Some jurisdictions or local communities do not allow testing of alcoholic beverage. Those jurisdictions that do allow testing of alcoholic beverage each have different regulations and procedures. The following guidelines are recommended:

4.2.1 Determine if the facility is required to have a liquor license or be bonded to conduct the study. This information is available from local agencies such as beverage control commissions and from federal agencies like the Tax and Trade Bureau (TTB). Check the situation in your local community as needed.

4.2.2 Research and meet state/provincial and federal regulations for the shipping, handling, receiving, storing, and disposing of alcoholic beverages. Some relevant agencies are state/provincial liquor control boards, the Tax and Trade Bureau (TTB), the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA), and the Canadian Food Inspection Agency (CFIA).

4.2.3 Research and meet regulations for the serving of alcoholic beverages. For example, some jurisdictions require the use of a certified bartender. See 8.3.1.3 for an example of legal consumption levels. Note that these levels may change from state to state and from country to country.

4.2.4 Store material safety data sheets (MSDS) for ethanol on the study site premises, and make available upon request from participants. Also make available MSDS sheets for compounds used as reference standards or sensory training.

6. Regulatory and Legal Liability

6.1 There is a risk of legal liability whenever Investigate and meet federal, state/provincial, and local regulations whenever studies on alcoholic beverages are tested. To minimize these risks, it is recommended that the guidelines into be conducted. Note that the type of 5.2 and alcoholic beverage 5.3 be used. (beer/malt, wine, or spirit) may influence the regulatory requirements or the government agency that has jurisdiction.

6.2 Look for regulatory information through government agencies. Some examples include:

6.2.1 Australia—Food Standards Australia New Zealand, Australian Taxation Office (ATO) (10, 11).

6.2.2 Chile—Servicio Agrícola y Ganadero (SAG) (12).

6.2.3 France—Republique Francaise Service-Public (13).

6.2.4 Japan—National Tax Agency (14).

6.2.5 South Africa: Department of Agriculture, Land Reform, and Rural Development (15).

6.2.6 United States—Federal Tax and Trade Bureau (TTB), state/local Alcohol Beverage Commissions (ABCs), Food and Drug Administration (FDA), and Occupational Safety and Health Administration (OSHA) (16-18).

6.3 Research and meet regulations for all aspects related to the sensory testing of alcoholic beverages, including:

6.3.1 Obtaining permits and filling required documents.

6.3.2 Preparing facility, such as posting government warnings for the consumption of alcoholic beverages on test premises.

6.3.3 Labeling of products. Some examples include mandatory disclosures on packaging, labelling each product container individually, or applying a “not for resale” label for Home Use Testing products.

6.3.4 Shipping and handling of samples including customs clearance if product is being shipped between regions or internationally.

6.3.5 Product procurement, such as any requirements that products must be purchased in the same regulatory jurisdiction (for example, product must be purchased in the state that it will be tested), and if prototypes can be tested or not.

6.3.6 Receiving product.

6.3.7 Storing product.

6.3.8 Serving product:

6.3.8.1 Alcohol serving certifications or use of a certified bartender may be required for those serving alcohol.

6.3.9 Serving food, which may be required in some locations but prohibited in others.

6.3.10 Travel of assessors, may require a designated driver or that assessors take a breathalyzer before, after or both for participation.

6.3.11 Disposing of unused packages.

6.4 Research and meet requirements on types of testing allowed which may also vary among locales in which testing is being conducted. Each of these may be allowed with or without compensation:

6.4.1 Testing with consumers at a market research facility.

6.4.2 Testing with consumers at a bar.

6.4.3 Testing with consumers in their home.

6.4.4 Testing using employees.

6.4.5 Testing using trained panelists.

6.4.6 Testing with bartenders.

6.5 Ethical review boards may be considered or required for example, Internal Review Board in the United States or a company's legal department.

6.6 ~~Consent Forms:~~ There is a risk of legal liability whenever alcoholic beverages are tested. To minimize these risks, it is recommended that a consent form be used for each product evaluation session or test. These may be required in some locales. Below is the information that should be in the consent form. Examples are provided in [Appendix X2 – Appendix X4](#).

6.6.1 Describe the nature of the study. For example, the sentence, “You may or may not be served beverages that contain alcohol,” can be used to obtain informed consent.

6.6.2 Outline the time period over which testing will be conducted.

6.6.3 Include all legally required alcohol warning information.

6.6.4 Indicate that for the candidate to participate in the study they must be in good health and are willing to participate as evidenced by the signing of the informed consent form.

6.6.5 ~~Prepare consent forms for each product evaluation session or test (see~~Indicate that participants may be excluded from the study for specific [Appendix X1 – Appendix X3](#))-reasons including pregnancy, taking prescribed medications, current illnesses, and alcohol abuse. Furthermore, indicate that if any of the exclusion circumstances arises during the course of the study it is the participant's responsibility to bring it to the organizer's attention. This is particularly important for long-term studies, where periodic reviewing and signing of consent forms may be necessary.

~~5.2.1.1 Describe the nature of the study. For example, the sentence, “You may or may not be served beverages that contain alcohol,” can be used to obtain informed consent.~~

~~5.2.1.2 Outline the time period over which testing will be conducted.~~

~~5.2.1.3 Include all the federal alcohol warning information (see [Appendix X1](#)).~~

~~5.2.1.4 Indicate that in order for the candidate to participate in the study they must be in good health and are willing to participate as evidenced by the signing of the informed consent form.~~

~~5.2.1.5 Indicate that participants may be excluded from the study for specific reasons including pregnancy, taking prescribed medications, current illnesses, and alcohol abuse. Furthermore, indicate that if any of the exclusion circumstances arises during the course of the study it is the participant’s responsibility to bring it to the organizer’s attention. This is particularly important for long-term studies, where periodic reviewing and signing of consent forms may be necessary.~~

~~5.2.1.6 Under certain circumstances, include a list of ingredients on the consent form mentioning all of the products to be tested. Such ingredients will be those required to be listed in accordance with your local regulatory regulations, for example caffeine, aspartame, capsicum, nuts, sulphites, or other allergens.~~

~~5.2.1.7 Include statements indicating that participants can be removed from the study without consent at any time. Statements should also be included stating that the participant can withdraw at any time.~~

~~5.2.1.8 Each participant is required to provide appropriate validation of legal age to consume alcoholic beverages. Record this validation on the consent form. Note that laws concerning legal drinking age vary from country to country and may vary within a country.~~

~~5.2.1.9 Upon completion of reading the consent form, ensure that the participant understands the form and has no questions. After being allowed ample time to review the contents of the consent form, the participant must sign and date the consent form in the presence of a witness.~~

6.6.6 Under certain circumstances, include a list of ingredients on the consent form mentioning all the products to be tested as per local regulatory regulations, for example level or range of alcohol, caffeine, aspartame, capsicum, sulfites, or specific allergens.

6.6.7 Include statements indicating participants can be removed from the study without consent at any time. Statements should also be included indicating the participant can withdraw at any time.

6.6.8 Each participant is required to provide appropriate validation of legal age to consume alcoholic beverages. If legal drinking age and legal purchase age are different in a particular locale, the higher should always be selected. Record this validation on the consent form. Note that laws concerning legal drinking age vary by country and may vary within a country.

6.6.9 Upon completion of reading the consent form, ensure that the participant understands the form and has no questions. After being allowed ample time to review the contents of the consent form, the participant must sign and date the consent form in the presence of a witness.

~~5.3 Other:~~

~~5.3.1 Review and follow the items described in [Section 3](#) to further reduce the risk of liability.~~

~~5.3.2 For in-home use studies, label each product as a test sample and not for sale.~~

~~5.3.3 Post government warnings for the consumption of alcoholic beverages on test premises and on test products.~~

7. Panel Assessor Selection

7.1 Consider safety, regulatory, and liability issues as discussed in [Sections 3–55](#) and [6](#) when selecting participants specifically for an alcoholic beverage panel testing. For general information on panel assessor selection criteria, consult [MNL 26](#) and [STP 758 ASTM MNL26 and STP758 \(419, 520\)](#).

7.2 *Special Considerations on Panel Selection Criteria:*

7.2.1 *Age*—All ~~panelists~~ assessors must be of legal drinking age. Confirm their age by using picture identification cards, such as a driver's license, passport, or other photo identification card ~~(only if date of birth is listed on the card)~~, listing the assessor's date of birth.

7.2.1.1 In some countries, legal drinking age and legal purchase age for alcoholic beverages may be different. The higher of the two should be used.

7.2.1.2 A table of legal drinking ages around the world can be found on the website for the International Alliance for Responsible Drinking (21). Some examples of ages in which persons can freely (that is, not in the presence of a consenting adult) consume and buy alcohol include:

- (1) Australia—18 years old.
- (2) Chile—18 years old.
- (3) France—18 years old.
- (4) Japan—20 years old.
- (5) South Africa—18 years old.
- (6) United States—21 years old.

7.2.1.3 For consumer or affective testing, ensure the time frame of past consumption or purchase behavior only includes time in which the consumers were of legal drinking age.

7.2.2 *Drinking Habits*—Product abuse is a criterion for exclusion for all alcoholic beverage tests. Assessors should arrive for testing having not had any alcoholic beverages the day of the sensory testing. Do not use individuals who indicate that they, on average, consume more than the recommended daily amount.

7.2.3 *Religious and Moral Considerations*—Do not use individuals if drinking alcoholic beverages interfere with or contradicts their religious or moral beliefs.

~~6.3 *Drinking Habits*—Product abuse is a criterion for exclusion for all alcoholic beverage tests. Do not use individuals who indicate that they consume more than two 1-oz drinks of high-proof spirits daily, one bottle of wine daily, a six-pack of beer a day, or a four-pack of wine breezers/coolers a day.~~

~~6.4 *Recruitment*—Contact the potential panelist directly (for example, e-mail, phone, 1:1 interview) to reduce the risk of including individuals with alcohol abuse problems. Also, the recruiter must be fully aware of the legal, safety, and specific panel considerations prior to running the test.~~

~~6.5 *Religious and Moral Considerations*—Do not use individuals if drinking alcoholic beverages interfere with or contradicts their religious or moral beliefs.~~

8. Sample Preparation

~~7.1 Proper sample preparation and presentation for sensory analysis is critical to generating consistent and meaningful information. Use of the sample preparation guidelines in 7.2 – 7.7.2 are therefore recommended.~~

~~8.1 In general, prepare samples based on~~ All test conditions and serving procedures are determined by the test objective, for example, a consumer study may require serving the test method, test design, and decision risk. For example, consumer studies may require preparing samples as they are most typically consumed, whereas a Quality Control (QC) based study may require the samples to be served diluted to a specific dilution. Evaluate alcoholic beverages at controlled temperatures: for sensory analytical testing at ambient temperature; for affective testing at temperature normally consumed: amount.

~~8.1.1 Present cold alcoholic beverage products at approximately 3 to 7°C. Conditions and procedures should remain consistent across testing whenever possible for comparison.~~

8.1.2 *Pretest*—Present ambient temperature alcoholic beverage products at approximately 21 to 24 °C. A practice session may be conducted with a few staff members or assessors to determine if the selected preparation methods are appropriate for the purposes of the test.

7.2.3 Present hot alcoholic beverage products at approximately 66 to 71 °C.

8.1.3 *Product Variability*—If ice is added to the alcohol product, the number and variability exists in all products. How product variability is handled depends on the objective of the test, the size of the ice cubes must be controlled. Ice cube trays can be used to accomplish this. Water recommendations listed under effect one is attempting to measure, and the risks associated with decision-making. Unless the test is designed to understand the extent of product variability, the test variables should be controlled to minimize variation of the stimuli to which each assessor is exposed. Variability should, however, not be minimized to the extent where the sample is 7.4.2 should also be used when making ice cubes, not representative of the typical variability found in the product. See Guide E1871 for more.

8.2 Product age should be consistent among all samples and as fresh as possible unless this conflicts with the purpose of the study.

8.3 Consider a product’s exposure to the environment. Sunlight, indoor lighting, air ingress, temperature, contact vibrations, and so forth can affect the physical nature of a product.

8.4 All storage containers should be inert. Further material considerations should be made based on the type of product.

8.5 For carbonated beverages, pretest to determine appropriate preparation and storage to avoid loss of carbonation. Ideally a new package will be opened after a pre-determined set of time or an unopened or newly opened package is served directly to the assessor. It is not recommended to combine smaller package types into a larger one (for example, several cans into a pitcher) as the carbonation will decrease more quickly. If it is necessary to combine smaller containers, ensure the larger container has a tight-fitting lid that will not allow CO₂ to escape.

8.5.1 Similar procedures should be conducted for nitrogenated beverages.

8.6 For beverages stored and served at hot or cold temperatures, consider how to maintain appropriate temperature. Insulated flasks or carafes are recommended for hot beverages to avoid imparting a “cooked” aroma, though hot plates or a hot water bath could also be used. For cold beverages, a refrigerator is recommended but an ice bath could also be used if the temperature can be regulated. Temperature measurements should be taken throughout testing and holding of samples to ensure consistency in served product temperature.

8.7 For room temperature products, ensure the room temperature is not fluctuating between and within testing days.

8.8 Dilution may be chosen for distilled spirits due to high proof; however, this dilution can affect the sensory properties in some products.

8.8.1 Dilution amount should be determined according to the percent alcohol in the product and should remain consistent throughout testing.

8.8.2 Dilute products with liquid that will impart minimal flavor, such as spring water, distilled water, or demineralized water. Diluents should be pre-screened to ensure they do not contribute flavors. Consider combining water containers into a common lot to minimize variability.

8.9 Alcoholic beverage products that are used with mixers can be presented straight or in the mix. When a mix is to be with the mixer (such as juice, cola or tonic water). When a mixer is used, it is recommended that to prepare a master batch of the mix be prepared to a volume that can be used for the entire study. mixer or common lot purchased for the entire study (best when mixer is carbonated, for example, cola or tonic water). If this is not possible, the mixer should be screened before use for flavor consistency and stability throughout the study.

7.4 *Dilution:*

~~7.4.1 In some alcoholic beverage products, dilution is recommended to reduce the ethanol bite and burn that can interfere with sensory analysis.~~

~~7.4.2 Common diluting liquids include spring water, demineralized water, or distilled water which all contribute little to the flavor of the alcoholic beverage product being evaluated.~~

~~7.4.3 Dilution levels should be determined according to the percent ethanol in the product.~~

~~7.4.3.1 In general, beer and wine products do not require dilution.~~

~~7.4.3.2 A 50/50 dilution is recommended for most distilled spirits. More or less dilution may be required depending on the proof of the sample.~~

~~7.5 Glassware:~~

~~7.5.1 Samples should be presented in clean, odor- and flavor-free containers that are consistent with common practices. For example, wine can be evaluated using wine glasses and brandy snifters.~~

~~7.5.2 Glass containers should be used whenever possible.~~

~~7.5.3 Containers made of other materials, including plastic resins, can be used as long as they are prescreened. Prescreening shall include interactions between container and alcohol that results in harmful chemicals or contributions of odor and flavor to the alcoholic beverage sample.~~

~~7.5.4 Containers may be chilled or heated to the same temperature that the alcoholic beverage will be evaluated to avoid extreme changes in the sample's temperature.~~

~~8.10 *Timing:* Home Use Tests (HUT) require different preparation to ensure assessor instructions for receiving and consuming the product are as clear as possible.~~

~~8.10.1 Consider how samples will be received by the assessor. For example, samples may be picked up by the assessor at a central location, delivered by the sensory professional, or shipped directly to the assessor.~~

~~8.10.2 Samples should be evaluated in a timely fashion and consistent with the product's use. If samples are being picked up by the assessor, ensure the instructions to place the product out of any person's reach in the vehicle and inform the assessor it should not be opened until they arrive home.~~

~~8.10.3 Samples that require heating or cooling should be presented for analysis as quickly as possible after preparation to ensure the evaluation is conducted within the acceptable temperature ranges as described in Consider providing a cooler if samples must remain cold. 7.2.1 – 7.2.3.~~

~~8.10.4 Some products, such as certain wines, should be allowed to sit for a standard amount of time after they are opened before they are presented for sensory evaluation. If samples are being shipped:~~

~~8.10.4.1 Ensure samples can be shipped legally. For example, in the United States some states do not allow alcohol to be shipped across their borders or directly to consumers.~~

~~8.10.4.2 Consider shipping conditions (for example, time of delivery, temperature of shipment), and ensure product is received by a person of legal drinking age.~~

~~8.10.5 Provide detailed instructions to the assessor for storing and consuming products, including storage away from those under legal drinking age.~~

~~8.10.6 Carbonated alcoholic beverages, such as beer, sparkling wine, and wine coolers, should be presented for evaluation as quickly as possible after preparation to reduce the risk of large changes in the carbonation which can dramatically alter the sensory attributes. If empty sample containers or unused product must be returned to the sensory professional, provide instructions to the assessor detailing how to return them (for example, shipping or dropping off at a specified location).~~