



Designation: E 1346 – 90 (Reapproved 2000)

Standard Practice for Bulk Sampling, Handling, and Preparing Edible Vegetable Oils for Sensory Evaluation¹

This standard is issued under the fixed designation E 1346; 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 practice covers the recommended procedures for bulk sampling, handling, and preparing edible vegetable oil (liquid at room temperature) prior to sensory evaluation.

1.2 This practice is consistent with the background information presented in ASTM STP 433,² ASTM STP 434,³ and ASTM STP 758.⁴ These should be consulted for supplemental guidance.

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

2. Referenced Documents

- 2.1 *AOCS Standard:*⁵
Method C 1-47 Sampling

3. Summary of Practice

3.1 This practice consists of the following basic steps: removing oil from bulk source, transporting and starting oil prior to evaluation, preparing oils for evaluation, presenting samples to panel, and cleaning glassware.

4. Significance and Use

4.1 This practice is designed for use by the oil processor or research laboratory for evaluation by a trained sensory panel, or for use by quality control (QC) and quality assurance (QA) personnel for sampling from a tank truck, car, or any other bulk transportation container, or by both.

4.2 The consistent use of this practice will provide representative samples for all sensory, chemical and physical analyses and will protect the oil from oxidation.

4.3 The objective of this practice is to ensure that the sample is representative of the sample source from the time of sampling until the time of evaluation and to protect oil quality during that time.

4.4 This practice addresses neither evaluation and scaling techniques, nor the sampling, handling, and preparing of solid fats.

5. Apparatus

- 5.1 *Liquid Zone Sampler,*⁵ or core sampler, or trier.^{6,7}
5.2 *Wide-Mouth Jars,* made of polyethylene terephthalate, 0.5 to 1.0 L.
5.3 *Amber Glass Bottles,* 250 mL to 1 L, with narrow-mouth tops that will withstand freezer temperatures.
5.4 *Plastic Caps with Liners,* or tape (PTFE pipe thread tape), to cover top of bottle opening before capping with new non-metallic screw type caps. Tape should be 2.5 cm in width or wider to completely cover bottle openings.
5.5 *Glass Funnels.*
5.6 *Glove Box* with inert gas nitrogen atmosphere, including an oxygen scavenging device.
5.7 *Glass Vial,* 50 mL. Use amber glass for flavor evaluation and clear glass for visual examination of oil.
5.8 *Standard Disposable Glass Pipets,* 10 mL, one per each sample.
5.9 *Circulating Waterbath,* with automatic timer, thermostat and rack.
5.10 *Waterbath Thermometer,* with range from 20 to 100°C in 1°C divisions, calibrated for 76 mm immersion, 305 mm long.

6. Precautions

6.1 Oil submitted for chemical and physical testing and for sensory evaluation should be from the same bulk sampling. Tank trucks, cars, or any other bulk transportation containers may be filled with as many as seven layers and each level of oil may be slightly different in quality. Oil samples should be handled in the same manner and time frame to ensure high data correlation.

¹ This practice is under the jurisdiction of ASTM Committee E-18 on Sensory Evaluation of Materials and Products, and is the direct responsibility of Subcommittee E18.06 on Food, Beverage, and Tobacco Evaluation.

Current edition approved March 30, 1990. Published May 1990.

² *Basic Principles of Sensory Evaluation, ASTM STP 433,* ASTM, 1968.

³ *Manual on Sensory Testing Methods, ASTM STP 434,* ASTM, 1968.

⁴ *Guidelines for the Selection and Training of Sensory Panel Members, ASTM STP 758,* ASTM.

⁵ Available from American Oil Chemists' Society, P.O. Box 3989, Champaign, IL 61826.

⁶ Available from Zone Devices, Inc., San Rafael, CA.

⁷ Available from Refinery Supply Co., Tulsa, OK.