



Standard Test Method for Sensory Evaluation of Low Heat Chilies¹

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1. Scope

1.1 This test method describes standardized procedures for the sensory evaluation of heat in low heat chili peppers ranging from 200 to 2500 Scoville heat units.

1.2 This test method is intended as an alternative to the Scoville heat test (see ASTA Method 21.0 and ISO 3513), but results can be expressed in Scoville heat units (S.H.U.).

1.3 This test method does not apply for ground red pepper or oleoresin capsicums.

1.4 The values stated in SI units are to be regarded as the standard.

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 and health practices and determine the applicability of regulatory limitations prior to use.* Specific precautionary statements are given in Section 8.

2. Referenced Documents

2.1 ASTM Standards:

E1083 Test Method for Sensory Evaluation of Red Pepper Heat²

2.2 ASTA Standard:

ASTA Method 21.0 Official Analytical Methods³

2.3 ISO Standard:

ISO 3513-1977 (E), Spices and Condiments—Chilies—Determination of Scoville Index⁴

¹ This test method 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 on Food and Beverage Evaluation.

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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 American Spice Trade Association, Box 1267, Englewood Cliffs, NJ 07632.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *approaching strong heat*—*N*-vanillyl-*n*-nonamide, 1.30 ppm. This is 13.0 cm on the 15-cm line scale. It is unusual to see a ground red pepper stronger than this. But in the event that a pepper with more than expected heat is tested, there remains the last 2 cm on the 15-cm line scale.

3.1.2 *low heat chilies*—variety of red pepper (capsicum) containing less than 0.1 % capsaicin (less than 2500 Scoville heat units).

3.1.3 *moderate heat*—*N*-vanillyl-*n*-nonamide, 0.80 ppm. This is a “moderate” amount of pepper heat. It reads 10 cm on the 15-cm line scale.

3.1.4 *rinse*—to purge the oral cavity with unsalted soda crackers and 20°C spring or distilled water by slowly chewing and swallowing the cracker, followed by swirling the water around in the mouth and swallowing. This procedure is repeated as often as is natural and comfortable for the panelist.

3.1.5 *Scoville heat units (S.H.U.)*—the commonly accepted unit for expressing heat levels in capsicum products (see ISO 3513 and Footnote 4). S.H.U. range from 0 to 1 500 000.

3.1.6 *slight heat*—*N*-vanillyl-*n*-nonamide, 0.40 ppm. This is a “slight” amount of pepper heat. It reads 5 cm on the 15-cm line scale.

3.1.7 *strong heat*—best defined by concept. Hotter than the 1.30 ppm *N*-vanillyl-*n*-nonamide sample. It reads 15 cm on the 15-cm line scale.

3.1.8 *threshold heat*—best defined by concept rather than by a standard dilution of *N*-vanillyl-*n*-nonamide. Threshold is that point where a panelist just barely senses burn and heat, or both. It reads 1.25 cm on the 15-cm line scale.

3.1.9 *zero heat*—*N*-vanillyl-*n*-nonamide, 0 ppm. No sensory heat. It reads 0 cm on the line scale.

4. Summary of Test Method

4.1 Ground low heat chili peppers are steeped in hot water with polysorbate-80 for 20 min, filtered, and the filtrate diluted in room temperature water. Trained panelists compare the heat in the pepper extract to a known concentration of a standard