

**CUSTOMER SERVICE**

Neogen Customer Assistance and Technical Service can be reached between 8 a.m. and 6 p.m. Eastern time by calling 800/234-5333 or 517/372-9200 and asking for a Neogen sales representative or Technical Services. Assistance is available on a 24-hour basis by calling 800/234-5333. Training on this product, and all Neogen test kits, is available.

**MSDS INFORMATION AVAILABLE**

Material safety data sheets (MSDS) are available for this test kit, and all of Neogen's Food Safety test kits, at [www.neogen.com](http://www.neogen.com), or by calling Neogen at 800/234-5333 or 517/372-9200.

**WARRANTY**

Neogen Corporation makes no warranty of any kind, either expressed or implied, except that the materials from which its products are made are of standard quality. If any materials are defective, Neogen will provide a replacement product. Buyer assumes all risk and liability resulting from the use of this product. There is no warranty of merchantability of this product, or of the fitness of the product for any purpose. Neogen shall not be liable for any damages, including special or consequential damage, or expense arising directly or indirectly from the use of this product.

**TESTING KITS AVAILABLE FROM NEOGEN****Natural Toxins**

- Aflatoxin, DON, Ochratoxin, Zearalenone, T-2/HT-2 Toxins, Fumonisin, Histamine

**Foodborne Bacteria**

- *E. coli* O157:H7, *Salmonella*, *Listeria*, *Listeria monocytogenes*, *Campylobacter*, *Staphylococcus aureus*

**Sanitation**

- ATP, Yeast and Mold, Total Plate Count, Generic *E. coli* and Total Coliforms, Protein Residues

**Food Allergens**

- Almonds, Crustaceans, Eggs, Gliadin, Hazelnut, Lupine, Milk, Mustard, Peanuts, Sesame, Soy, Walnut

**Genetic Modification**

- CP4 (Roundup Ready®)

**Ruminant By-products**

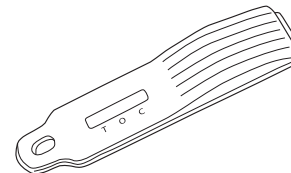
- Meat and Bone Meal, Feed

**Read instructions carefully before starting test**

# Reveal 3-D Hazelnut Test

**INTRODUCTION AND INTENDED USE**

The Reveal® 3-D Hazelnut Test is uniquely designed with 3 lines of detection and can be used virtually anywhere to screen environmental swabs and rinses for the presence of significant levels of hazelnut. The test's 3-D technology ensures greater reliability with screening than ever before.



The Reveal 3-D Hazelnut Test is intended for use ONLY in an industrial food manufacturing/preparation context or for food labeling enforcement testing. Because of the problems of adequately sampling and extracting hazelnut, it is NOT SUITABLE for the testing of foods to be consumed in the home or in a restaurant by allergic individuals. The test detects significant (low parts per million; ppm) levels of hazelnut content in rinses and in environmental swabs.

**DETECTION LIMIT**

The test utilizes highly specific antibodies to detect hazelnut protein. Hazelnut can be detected in from various surfaces using the provided environmental swabs or from rinses. Utilizing the environmental swabs supplied, levels of 20 µg / 100 cm<sup>2</sup> of hazelnut extract can be detected.

When analyzing rinses, hazelnut residues are detectable at a level of 5-10 ppm. The presence of cleaners and sanitizers can affect LOD in rinses.

**CROSS REACTIVITY**

The test was used to analyze a panel of potentially cross reacting commodities including nuts, apricot, seeds, legumes and grains. Of these, whole walnut gave a clear cross reactivity with the test (down to 60 ppm walnut). Other samples (pecan, pine kernel, pistachio, wheatgerm, poppy and cocoa) gave low positive results but are not considered to be cross contamination, results are possibly due to contamination at source. Further information is available in the Reveal 3-D Hazelnut Customer Validation Report, available on request.

**TEST PERFORMANCE**

The Reveal 3-D Hazelnut Test has undergone rigorous validation to evaluate the specificity, sensitivity, robustness and intra- and inter-batch variability of the test method on rinses and environmental swabs. A Customer Validation Report is available on request.

**SAMPLE COMPATIBILITY**

The Reveal 3-D Hazelnut Test is designed to detect hazelnut on environmental surfaces and in rinses. While every effort has been made to validate as many variables as possible, there may be some sample types that are not suitable for testing.

The validation of certain food ingredients may be applicable for the Reveal 3-D test format. However, it is recommended that a more broadly inclusive test method, like Veratox Hazelnut, be used for food ingredients. Existing commodity validations should be revalidated when suppliers or the manufacturing process has been changed. Please contact your Neogen representative or distributor for additional details.

**REAGENTS AND MATERIALS**

The Reveal 3-D Hazelnut Test pack contains the following:

1. An instruction leaflet
2. One foil pouch, containing 10 blue Reveal 3-D Hazelnut Test devices
3. Ten sachets containing Extraction Solution Type 3
4. Ten sample tubes and caps
5. Ten individually packaged, sterile swabs with break-off tips

**SAMPLING TECHNIQUE****1. Clean-in-Place Rinse Water**

As only a small amount of material (0.25 mL) is required for the Reveal 3-D Hazelnut Test, it is important to test a representative portion of liquid.

**2. Environmental Swabbing**

The swabs supplied are intended to be used for the collection of environmental samples from which the presence of hazelnut can be tested. This method can be used to validate the adequacy of cleaning and/or to identify problem areas, e.g. unwanted build-up of hazelnut in processing equipment.

**3. Food Samples**

Contact your Neogen representative or distributor for additional details.



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e-mail: [foodsafety@neogen.com](mailto:foodsafety@neogen.com) • [www.neogen.com](http://www.neogen.com)

**PRECAUTIONS**

1. For environmental testing in an industrial food manufacturing/preparation, or labeling enforcement context only.
2. Do not use any part of the test beyond the expiry date.
3. Do not open the foil pouch until just before use.
4. Always store the kit between 2–8°C (35–46°F); avoid freezing.
5. Ensure the foil bag is tightly sealed after removal of a device.

**TEST STORAGE / SAMPLE STABILITY**

Store the Reveal 3-D Hazelnut Test kit between 2–8°C (35–46°F), and use within the expiry date stated on the outer label. Extracted samples should be used within 3 hours of extraction.

**LIMITATIONS**

A negative test from a surface or rinse cannot exclude the possibility that the food or swabbed surface has hazelnut present since it may be distributed unevenly on the surface or in the rinse and may be below the limit of detection of the test.

The Reveal 3-D Hazelnut Test is **QUALITATIVE** and should only be used as a preliminary screen for the presence of hazelnut. The validity of results obtained with the test should preferably be viewed in conjunction with data from a quantitative assay.

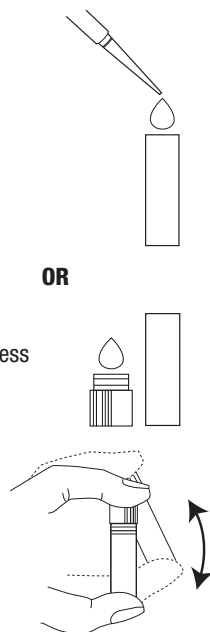
**RINSE SAMPLING**

Remove the following and allow to equilibrate at room temperature before use (20-30 minutes out of refrigerator):

- 1 x sample tube
- 1 x "Type 3" buffer sachet
- 1 x Reveal 3-D Hazelnut Test device (in foil pouch)

1. Carefully tear/cut off the top of the "Type 3" buffer sachet and add the entire contents to the sample tube.
2. Add the 0.25 mL (250µL) sample to the sample tube. If a pipette is unavailable, 0.25 mL may be crudely estimated by half-filling a white sample tube cap. Note: Test results will be less accurate.
3. Secure the white cap and shake for one minute.

**PROCEED TO SAMPLE TESTING**



**SWAB SAMPLING**

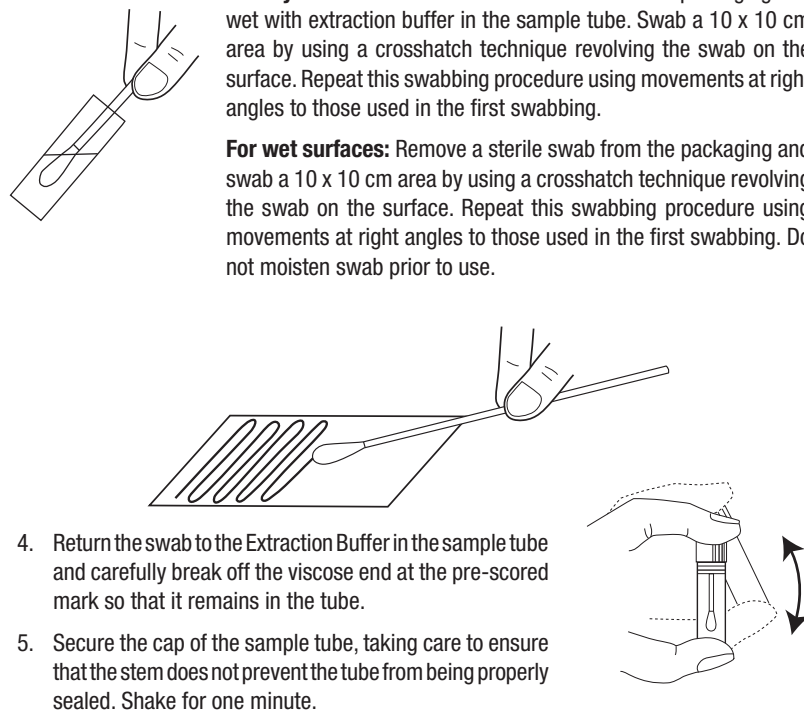
Remove the following and allow to equilibrate at room temperature before use (20–30 minutes out of refrigerator):

- 1 x sample tube
- 1 x "Type 3" buffer sachet
- 1 x Reveal 3-D Hazelnut Test device (in foil pouch)
- 1 x sterile swab

1. Carefully tear/cut off the top of the "Type 3" buffer sachet and add the entire contents to the sample tube.
2. Estimate a swabbing area of approx. 10 cm x 10 cm. Alternatively use the swab to collect samples of contamination from problem areas e.g. of processing equipment.
3. Gather the sample with the swab, using one of the following methods:

**For dry surfaces:** Remove a sterile swab from the packaging and wet with extraction buffer in the sample tube. Swab a 10 x 10 cm area by using a crosshatch technique revolving the swab on the surface. Repeat this swabbing procedure using movements at right angles to those used in the first swabbing.

**For wet surfaces:** Remove a sterile swab from the packaging and swab a 10 x 10 cm area by using a crosshatch technique revolving the swab on the surface. Repeat this swabbing procedure using movements at right angles to those used in the first swabbing. Do not moisten swab prior to use.



4. Return the swab to the Extraction Buffer in the sample tube and carefully break off the viscose end at the pre-scored mark so that it remains in the tube.
5. Secure the cap of the sample tube, taking care to ensure that the stem does not prevent the tube from being properly sealed. Shake for one minute.

**PROCEED TO SAMPLE TESTING**

**SAMPLE TESTING**

1. Remove the lid and fill it with the liquid from the tube. Any froth should remain in the tube.
2. Dip the head of the Reveal 3-D device into the liquid in the lid. Ensure that the cavity is saturated with the liquid.
3. Leave the cavity saturated until you see the liquid running in the test window.
4. Place device on a flat surface and allow test to develop for 5 minutes.

**Note:** It is essential to place the device flat on a level surface as soon as the liquid has entered the test window to stimulate flow through the device.

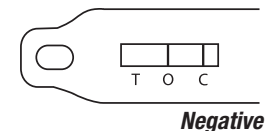
**GO TO READING RESULTS**

**READING RESULTS**

Liquid will flow into the test window; read the result **FIVE MINUTES** after dipping. If distinct lines are **NOT** visible at positions O and C, refer to numbers 3 or 4 below.

**1. NEGATIVE Result**

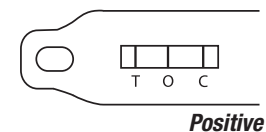
No line at position T (test): Level of Hazelnut undetectable. (See LIMITATIONS section).



**Negative**

**2. POSITIVE Result**

Any intensity of line at position T (test): level of Hazelnut above detection limit.



**Positive**

**3. HIGH Results**

No line is visible at position O (overload) and a line is faintly visible or absent at position T: **sample is OVERLOADED with Hazelnut.**



**4. INVALID Results**

If no line appears at position C (control), then the test may be invalid.