

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 equipment use for 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 test kits, on Neogen's Web site at 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 of the 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

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

Genetic Modification

- CP4 (Roundup Ready®)

Ruminant By-products

- Meat and Bone Meal, Feed

Read instructions carefully before starting test


for
Peanut Allergen**PEANUT ALLERGEN**

Food allergens are proteins in food that can create an immune response in sensitive individuals. Once ingested, food allergens can cause a number of reactions, ranging in severity from hives and itching to anaphylaxis. Anaphylaxis is a severe allergic reaction, involving vomiting, diarrhea, difficulty breathing, swelling of the mouth and tongue, and a rapid drop in blood pressure.

An estimated 3.5 to 4 percent of adults, and 6 to 8 percent of children, are sensitive in some degree to food allergens. More than 12 million people in the United States alone are known to have a food allergy, with an allergy to peanuts being one of the most prevalent.

Food manufacturers protect those with food allergies by clearly labeling their products with a list of ingredients. Testing for the presence of peanut components ensures food manufacturers that an unlabeled—and potentially dangerous—ingredient did not make its way into a food product.

INTENDED USE

Reveal for Peanut Allergen is intended for the qualitative analysis of peanut residue in food products (e.g., cookies, crackers, chocolate bars, ice cream and cereals), clean-in-place rinses, and on environmental surfaces.

INTENDED USER

This test kit is designed for use by quality control personnel and others familiar with foods possibly contaminated by peanuts or peanut products. Since technique is very important, operators should be trained by a Neogen representative or someone who has successfully completed the Neogen training.

ASSAY PRINCIPLES

Reveal for Peanut Allergen is a single-step lateral flow immunochromatographic assay. The extract is wicked through a reagent zone, which contains antibodies specific for peanut protein conjugated to colored particles. If peanut is present, it will be captured by the conjugated antibodies. The peanut-antibody-particle complex is then wicked onto a membrane which contains a zone of antibody specific for peanut protein. This zone captures the complex allowing the particles to concentrate and form a visible line. If no peanut is present, no line will form. The membrane also contains a control zone where an immune complex present in the reagent zone is captured by an antibody, forming a visible line. The control line will always form regardless of the presence of peanut, ensuring the strip is working properly.

STORAGE REQUIREMENTS

Store kit components at room temperature (18–30°C, 64–86°F) to assure full shelf life.

MATERIALS PROVIDED

1. 25 lateral flow test strips in a sealed stay-dry tube
2. 25 transfer pipettes
3. 25 sample tubes
4. 4 foil pouches of 10 mM PBS dry powder extraction solvent; each pouch contains enough powder to prepare 1 L of extraction solution
5. 2 bottles of 50 g extraction additive
6. Plastic 3 g scoop to measure extraction additive

MATERIALS RECOMMENDED BUT NOT PROVIDED

1. High-speed blender with a 250 mL jar (Neogen item #9493/#9477)
2. Allergen Extraction Kit (Neogen item #8429)
3. Allergen Environmental Swabbing Kit (Neogen item #8432S)
4. Scale capable of weighing 5 ± 0.1 grams (Neogen item #9427)
5. Water bath, hot plate or equivalent heat source capable of maintaining $60^{\circ}\text{C} \pm 1^{\circ}$
6. Thermometer
7. 1 L bottle to prepare extraction solution (Neogen item #9472)
8. Waterproof marker
9. Distilled or deionized water
10. Timer (Neogen item #9426)
11. Graduated cylinder capable of measuring 125 mL (Neogen item #9368)
12. Whatman #4 filter paper (Neogen item #9429)
13. Reveal AccuScan III System (Neogen item #9590) *optional*



620 Leshler Place, Lansing, MI 48912
800/234-5333 (USA/Canada) or 517/372-9200 • fax: 517/372-2006
e-mail: foodsafety@neogen.com • www.neogen.com

PRECAUTIONS

1. The test strips must remain sealed inside the stay-dry tube before use.
2. Samples to be tested for **peanut must be extracted separately** from samples to be tested for other food allergens. Extraction additives are specifically designed for each food allergen.
3. This test kit's components (e.g., extraction reagents) may contain milk, egg, peanut and/or soy protein. If allergic to any of these compounds, use this product with caution.
4. The testing environment should be clean and dust-free.
5. Do not use kit components beyond expiration date.
6. Treat labware and test liquids (e.g., sample extract) as if they contain peanut.
7. To avoid cross-contamination, use clean labware for each sample, and thoroughly wash all labware between samples.

PROCEDURAL NOTE

Prepare extraction solution. Add one foil pouch containing 10mM Phosphate Buffered Saline (PBS), to 1 L distilled or deionized water. Swirl to mix thoroughly. Cover and store any unused portions refrigerated at 2-8°C (35-46°F). **Note:** Discard unused portions of extraction solution when the test kit has been used completely.

SAMPLE PREPARATION AND EXTRACTION

Test samples should be collected according to accepted sampling techniques (if necessary, see Neogen's Food Allergen Handbook). Food and food ingredient samples can be extracted using either a water bath or blender extraction method. Instructions for both methods follow. To extract food allergen residues from swabs, use the environmental swab extraction method in this section.

Water bath extraction method

1. Prepare the extraction solution as described in the procedural note.
2. Obtain a representative sample. If the sample is of a larger particle size, grind it to a very fine particle size.
3. Transfer 5 g of sample, or 5 mL of liquid sample, to an extraction bottle.
4. Add one level scoop of peanut extraction additive to the bottle.
5. Pour 125 mL of the preheated (60°C / 140°F) extraction solution to the bottle, and cap the bottle.
6. Extract by shaking (150 rpm) in a water bath at 60°C (140°F) for 15 minutes. Remove the bottle from the bath.
7. Let material sit for 10 minutes to enable some of the sample to settle.
8. Use a disposable pipette to transfer approximately 0.5 mL of the supernatant to a sample tube.
9. The sample is now ready for testing.

Blender extraction method

1. Prepare the extraction solution as described in the procedural note.
2. Preheat the extraction solution to 60°C (140°F).
3. Obtain a representative sample. If the sample is of a larger particle size, grind it to a very fine particle size.
4. Transfer 5 g of sample, or 5 mL of liquid sample, to a 250 mL blender jar.
5. Add one level scoop of peanut extraction additive to the blender jar.
6. Pour 125 mL of the preheated (60°C, 140°F) extraction solution into the jar and blend at high speed for 2 minutes.
7. Let material sit for 10 minutes to enable some of the sample to settle.
8. Filter the extract by pouring at least 5 mL through a Whatman #4 filter and collecting the filtrate as a sample. **Alternative:** Centrifuge at 14,000 rpm for 5 minutes (20 minutes for lower speeds).
9. If necessary, use a disposable pipette to transfer approximately 0.5 mL of the supernatant to a sample tube.
10. The sample is now ready for testing.

Environmental swab extraction method

1. Prepare the extraction solution as described in the procedural note.
2. Transfer 125 mL of the extraction solution to a separate container, and add one level scoop of peanut extraction additive to the container. Prepare a fresh mixture of extraction solution and peanut extraction additive daily. **Note:** Prepare 125 mL of the mixture for every 25 environmental swabs to be tested.
3. Preheat the mixture of extraction solution and peanut extraction additive to 60°C (140°F). Shake container to fully dissolve additive.
4. Gather the sample with a swab, using one of the following methods:

For dry surfaces: Open a new swab and wet with extraction solution. Swab a 10 x 10 cm area by using a crosshatch technique.

For wet surfaces: Open a new swab and swab a 10 x 10 cm area by using a cross-hatch technique. Do not moisten swab prior to use. Return the swab to its original tube once sampling is complete. Remember to label each tube.

5. Remove the swab from its tube, and add 5 mL of extraction solution with additive at 60°C to the tube. Mix by placing the swab back into the tube and shaking for 2 minutes by hand (inverting tube), or for 30 seconds with a Vortex mixer.
6. Remove the swab from its tube.
7. Using a disposable pipette, transfer approximately 0.5 mL of the supernatant to a sample tube.
8. The sample is now ready for testing.

TEST PROCEDURE

1. Place a strip with the sample end down into each sample tube.
2. Allow each strip to develop in the sample tube.

INTERPRETATION OF RESULTS

Visual Results:

Positive results: If a line forms in the test zone and another line forms in the control zone **within 10 minutes** (2 lines total), the sample is positive (greater than 5 ppm). A positive sample may be determined as soon as 2 lines are visible on the strip. If there is no line in the control zone, the test is invalid and the sample should be retested with another strip.

Negative results: If after the **full 10 minutes** there is no visible line in the test zone, but a visible line in the control zone, the sample is negative (less than 5 ppm). If there is no line in the control zone, the test is invalid and the sample should be retested with another strip.

Reader Results:

Reveal AccuScan III

Test strips should be read in the Reveal AccuScan III Reader within 1 minute of completion of the 10 minute incubation. The AccuScan III Reader will report the following value based on the results.

Negative: <5 ppm; Positive: >5 ppm

Notes:

- **Visual observations made after 15 minutes may be inaccurate due to over-development of the device.**
- Positives can be confirmed by Neogen's Veratox for Peanut Allergen.*

*Contact Neogen or visit www.neogen.com for more information on these products.

PERFORMANCE CHARACTERISTICS

Reveal for Peanut Allergen is designed to screen for peanut protein at 5 ppm. At this concentration level, the user should expect to see a positive line in the test zone and a line in the control zone. Matrix effects may impact the intensity of the line in the test zone.

