























Clean-Trace™ Test

-  **(EN) Surface Protein Allergen Test**
-  **(FR) Test Surface Protein Allergen**
-  **(DE) Oberflächen Protein Allergen Test**
-  **(IT) Test Surface Protein Allergen**
-  **(ES) Test Proteínas Alergénicas en Superficie**
-  **(NL) Oppervlakte allergenen eiwittest**
-  **(SV) Surface Protein Allergen Test**
-  **(DA) Overflade Protein Allergen Test**
-  **(NO) Protein allergentest til overflate**
-  **(FI) Surface Protein Allergeeni pintatesti**
-  **(PT) Teste de Proteína Alergênicas de Superfície**
-  **(EL) Τεστ Επιφανειών Protein Αλλεργιογόνου Πρωτεΐνης**
-  **(PL) Test do detekcji alergenów na powierzchni**
-  **(HU) Felszíni Fehérje Allergén Teszt**
-  **(CS) Alergenový test Povrchový protein**
-  **(RO) Proteine de suprafață Test alergenice**
-  **(RU) Тест для определения белка (аллергена) на поверхности**
-  **(TR) Yüzey Protein Alerjen Testi**
-  **(JA) アレルゲン残留測定**
-  **(ZH) 表面过敏原采样棒**



Clean-Trace™

Product Instructions

Surface Protein Allergen Test

Product Description and Intended Use

The 3M™ Clean-Trace™ Surface Protein Allergen Test is based on the Biuret reaction. Under alkaline conditions the copper ions (Cu²⁺) form a complex with peptide bonds of protein and become reduced to Cu⁺. Bicinchoninic acid (BCA) under alkaline conditions is a highly sensitive, stable and specific reagent which forms a purple complex with Cu⁺. The test provides an estimation of protein by means of a color change. The 3M Clean-Trace Protein Allergen Test is a sensitive protein detection swab, with a detection limit of approximately 3 µg of total protein (using Bovine Serum Albumin as control). The absolute limit will vary with the protein composition of samples tested. When testing surfaces, equipment and rinse solutions, it is important to note that a residue may contain a mixture of allergenic and non-allergenic proteins, as well as non-protein materials.

To provide some guidance on the interpretation of results, testing at 3M has shown that a positive 3M Clean-Trace Protein Allergen Test result could equate to the presence of the following approximate minimum amounts of allergenic products:

Reference Material

Allergen Detection Limit	Material Used	Protein Content (%)
Egg 10-20 µg	NIST SRM8415 Whole egg powder	30
Milk 10-20 µg	NIST SRM8435 Whole milk powder	25.9
Peanut 25-50 µg	NIST SRM2387 Peanut butter	22.2
Gluten 40 µg	Gluten flour (locally sourced)	~83
Soy 20-40 µg	Soy flour (locally sourced)	~46.5
Almond 20-40 µg	Whole almond (locally sourced)	~19.5
Buckwheat 20-40 µg	Buckwheat flour (locally sourced)	~13

The 3M Clean-Trace Protein Allergen Test can be used to detect protein residues on surfaces and in solution, and thereby determine if cleaning has been effective in eliminating proteins, including potentially allergenic proteins. However, the interpretation of results will vary, depending on the specific application, so it is recommended that users validate the method for their specific requirements.

⚠ Warnings

Consult the Safety Data Sheet for additional information and local regulations for disposal.

⚠ Cautions

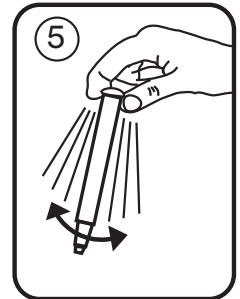
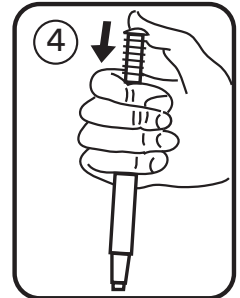
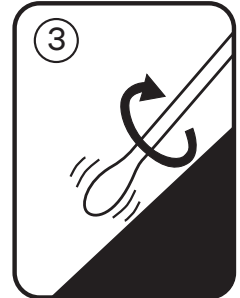
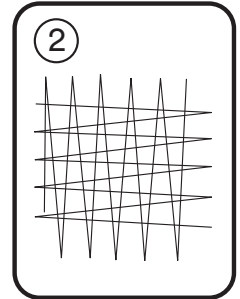
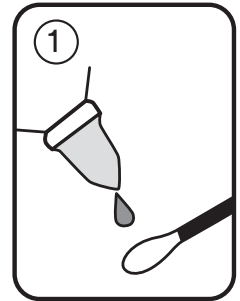
Protein is a common substance. It is present on skin, hair and on many surfaces. Do not touch the swab or the surface to be tested.

Do not use the 3M Clean-Trace Protein Allergen Test past expiry date.

The 3M Clean-Trace Protein Allergen Test detects protein and so will not detect residues of products with low or zero protein present.

Although the 3M Clean-Trace Protein Allergen Test is very sensitive, a surface cannot be considered allergen-free on the basis of a 3M Clean-Trace Protein Allergen Test result.

There is minimal interference with most common sanitizers at normal concentrations. However high concentrations of alkaline cleaners may cause false negative results in some instances. Peroxide based disinfectants can cause a false positive color change reaction with the 3M Clean-Trace Protein Allergen Test.





User Responsibility

Users are responsible for familiarizing themselves with product instructions and information. Visit our website at www.3M.com/foodsafety, or contact your local 3M representative or distributor for more information.

When selecting a test method, it is important to recognize that external factors such as sampling methods, testing protocols, sample preparation, handling, and laboratory technique may influence results.

It is the user's responsibility in selecting any test method or product to evaluate a sufficient number of samples with the appropriate matrices and microbial challenges to satisfy the user that the chosen test method meets the user's criteria.

It is also the user's responsibility to determine that any test methods and results meet its customers' and suppliers' requirements.

As with any test method, results obtained from use of any 3M Food Safety product do not constitute a guarantee of the quality of the matrices or processes tested.

Limitation of Warranties / Limited Remedy

EXCEPT AS EXPRESSLY STATED IN A LIMITED WARRANTY SECTION OF INDIVIDUAL PRODUCT PACKAGING, 3M DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. If any 3M Food Safety Product is defective, 3M or its authorized distributor will, at its option, replace or refund the purchase price of the product. These are your exclusive remedies. You must promptly notify 3M within sixty days of discovery of any suspected defects in a product and return it to 3M. Please call Customer Service (1-800-328-1671 in the U.S.) or your official 3M Food Safety representative for a Returned Goods Authorization.

Limitation of 3M Liability

3M WILL NOT BE LIABLE FOR ANY LOSS OR DAMAGES, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS. In no event shall 3M's liability under any legal theory exceed the purchase price of the product alleged to be defective.

Storage and Disposal

For maximum shelf life, store between 2-25°C (36-77°F). Alternatively, swabs are stable for 14 days when shipped or stored at elevated temperature; for this storage option do not exceed 35°C (95°F). Expiry date and lot number are noted on each pouch. After use, may contain microorganisms that may be a potential biohazard. Follow current industry standards for disposal.

Instructions for Use

Before beginning the test procedure, ensure the dry bath, water bath, or incubator is turned on and set for 55°C (131°F).

1. Place the 3M Clean-Trace Protein Allergen Test at room temperature for at least 10 minutes before use. Grip the sample stick handle and remove the swab from the device. On dry surfaces use the moisturizer provided and apply 4 drops to the swab OR apply 4 drops to the surface to be tested [figure 1].
2. Swab the test area. Where practical, swab an area approximately 10 cm by 10 cm and swab the area in one direction and then swab the area in the opposite direction [figure 2]. Apply pressure on the swab and rotate the swab as the sample is collected to ensure repeatable and effective sampling [figure 3]. To test a solution, dip the swab into the sample and remove any excess liquid on the side of the vessel.

Note: Test for the presence of sanitizing agent (e.g. pH check) in liquid samples if a solution is tested.

3. Reinsert the sample stick into the test with the handle inserted to the original position of the unused test. At this point you can either activate and measure immediately, or, if it is more convenient, the 3M Clean-Trace Protein Allergen Test may be labeled and left un-activated for up to four hours before activation and measurement of multiple swabs simultaneously.
4. To process the sample, push down firmly on the top of the 3M Clean-Trace Protein Allergen Test sample stick handle [figure 4]. The handle will slide into the device tube and the top of the handle should be level with the top of the device tube when fully depressed. Grip the top of the device and shake rapidly side-to-side for at least five seconds to mix the sample and reagent [figure 5]. The solution will turn mint green.
5. Place the 3M Clean-Trace Protein Allergen Test into a heating block that has been preheated to 55°C (131°F). Heat for 15 minutes at 55°C (131°F). Compare the color of the swab and the solution against the 3M Clean-Trace Protein Allergen Test label. Record the strongest color change in the solution or swab as the end result.

**How to best utilize 3M Clean-Trace Surface Protein Allergen Test**

Do	Do Not
Hold the 3M Clean-Trace Protein Allergen Test in the VERTICAL position on activation and shake rapidly from SIDE TO SIDE for at least 5 seconds.	Activate when not in the vertical position, do not shake up and down, do not shake aggressively.
Incubate 3M Clean-Trace Protein Allergen Test vertically.	Incubate 3M Clean-Trace Protein Allergen Test horizontally.
Read 3M Clean-Trace Protein Allergen Test at 15 minutes.	Record any color change after 15 minutes.

Interpretation

The color of the test reaction will indicate the level of protein residues on the surface. By comparing the color produced against the 3M Clean-Trace Protein Allergen Test label an estimation of the surface cleanliness can be made.

- Green indicates a Pass result - Clean, no further action required.
- Grey is inconclusive – Re-clean and Re-test is recommended.
- Purple indicates a Fail result - Re-clean and Re-test.

On heating the mint green color fades and becomes clear with a blue tint for negative samples; the green color returns on cooling shortly after removal from the heating block. To aid interpretation, comparison to a negative control is recommended.

For further information, contact 3M Food Safety Technical Services.

Explanation of Symbols

www.3M.com/foodsafety/symbols

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