



Stainless Steel Test Panel Tip Sheet

The following information is intended to help our customers understand the following three points: 1) proper initial preparation, 2) proper continuing maintenance, and 3) retiring used test panels.

It is very important to remove the vinyl covering on the test panel as soon as they are received. The flexible vinyl film contains a plasticizer that can migrate into the adhesive and contaminate the panel over time. The longer the vinyl covering is left in place, the more likely the plasticizer will migrate onto the panel. We highly recommend that the vinyl covering is removed from *all* panels upon receipt.

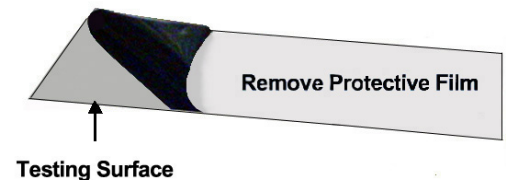
For the purpose of identification and traceability, ChemInstruments test panels are stenciled with a lot number including month and year on the back, “non-test” side, of the panel. A Certificate of Conformance will be issued for every test panel order.

All ChemInstruments test panels meet the requirements as specified in the Pressure Sensitive Tape Council test methods manual Appendage B Section 2.6 and ASTM D 3330 Section 6.3. These methods specify type 304 stainless steel with a bright annealed finish. The content of the stainless steel complies with the specifications required by ASTM A666. The surface roughness shall be 50 ± 25 nm (2.0 ± 1.0 μ m.) arithmetical average deviation from the mean profile. The thickness shall be no less than 1.1 mm (0.043 in.). The dimensions for a typical Peel Adhesion panel are 50 by 125 mm (2 by 5 in) with the machine direction parallel to the 125mm direction.

It is the customer’s responsibility to regularly inspect the test panels to comply with established standards (ASTM, PSTC...) and to continuously maintain the test panels in an effort to collect accurate test data.

Initial Preparation for New Test Panels **

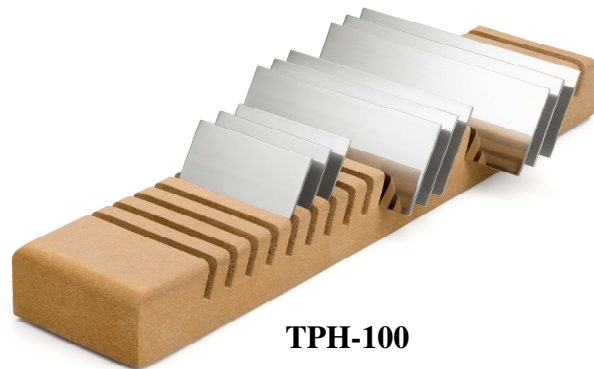
1. New test panels are protected with a plastic film that must be removed as soon as they are received.
2. It is important that the new panel be cleaned after removal of the protective vinyl film. New panels have residual contaminates on the test surface from the finishing process as well as adhesive residue from the protective vinyl film.
3. All new panels should be cleaned by wiping in the machine direction with a strong solvent such as Methyl Ethyl Ketone or Acetone. Apply solvent to the testing surface in a fume hood or other well ventilated area. Wipe with an absorbent, suitable lint free material which contain no additives dissolvable in the solvent of choice. Place the panel in an oven at 350° F (~175° C) for about 1 hour. The initial wash will remove some of the impurities and the heat exposure will bake off residual contaminants from the surface. After the panels have cooled, clean them again with n-Heptane and MEK to clean off any remaining residue.
4. At this point we recommend using Contrex® AP. The cleaner comes in powder form offered by Decon Labs (also available through distributors VWR, Fisher Sci., or Amazon). Follow safety indications on the container, wear safety glasses and nitrile gloves as a minimum. Gloves also prevent fingerprints on the test surface. The powder was diluted as instructed on the container, 15 grams Contrex powder / 1900 milliliter DI Water – mix to assure all the powder is dissolved.
5. Use solvent of your choice for 10 additional washes as outlined above in point number 3 to remove any additional contaminates. Refer to PSTC Appendage C or ASTM D 3330-00 (2010) Section 6.3 Panel, 7.0 Select Solvents and Section 11.1 for comprehensive cleaning instructions.
6. If panels still show contamination or smearing, repeat cleaning process with different solvent.



**ChemInstruments performs steps 1-3 as a service with all Super Panels. User must still perform points 4-6 upon receipt of all Super Panels.

Continued Cleaning and Maintenance

1. When cleaning panels, ASTM D3330 states in paragraph 11.1, “Dispense one of the solvents listed in 7.2.1 onto the panel, wiping it to dryness with fresh absorbent cleaning material. Repeat for a total of three solvent washes. Final wipe shall be MEK or Acetone. The panel shall be allowed to dry at standard conditions for at least 10 minutes. If cleaned panel is not used within 10 hours, it should be cleaned again prior to use.”
2. The following guidelines are recommended for routine cleaning based on the adhesive being tested:
 - a. Solvent Adhesive – use MEK, followed by Heptane, then MEK
 - b. Emulsion Adhesive – use Warm water sonicator, then MEK, followed by Heptane, then MEK
 - c. Silicone Adhesive – use Xylene, followed by Toluene
3. Handle test panels by the edges whenever possible. This will help keep skin oils out of the testing area of the panels.
4. It is advisable to mark the “grip” end of each panel when using a tensile tester to do adhesion testing. One should avoid gathering data from a scratched or roughened surface.
5. Panels showing stains, discoloration, or many scratches are not acceptable. The useful life of a test panel is determined by the number of tests, cleaning and storage conditions of the panel. The customer is responsible for inspecting and determining the suitability of a test panel prior to use.
6. If you stack your panels when not using them, put soft lint free tissues between the panels to avoid scratching the testing surface. ChemInstruments also manufactures a **Test Panel Holder** for storing these panels in a vertical position.



Retire Used Test Panels

1. Even with cautious care, test panels can become damaged from accidental scratches, drops, or difficult to clean adhesive applications (epoxy or cyanoacrylate type).
2. Panels showing stains, discoloration, or any scratches are not acceptable and should be replaced.
3. Test panels can be closely monitored in lab environments with limited personnel. Lab settings with several analysts and multiple shifts may require panel inspection by a quality staff member on a regular basis. A plan should be written based on the frequency of use and risk assigned to the product under test.

Super Panels

In our work with stainless steel panels over the years, we have tried to improve the initial performance of the test panels by improving the consistency of the surface. To do this we have added an additional buffing step to our process. This buffing process allows us to have a tighter initial surface roughness range. The surface roughness on these panels are 37.5 ± 12.5 nm (1.5 ± 0.5 μ m.) arithmetical average deviation from the mean profile. This is half of the range used for ASTM D3330. If you are interested in more information on these panels please contact us.