

Wait, Is That Clean?

Surface preparation is absolutely imperative for manufacturers who bond, seal, coat, paint, clean, or print. If the surface isn't prepared correctly, these applications risk failure, causing rework, recalls, or returns.

Surface Preparation Methods for Manufacturers

#1 Dyne Test Fluid

Process



An operator uses a brush or pen with an ink of known surface tension and applies it to the surface.



The user places dyne ink on the surface and subjectively interprets how the dyne chemicals bead up to determine how prepared the surface is for adhesion.

Weaknesses

Strengths

- ✗ Subjective testing means results may vary based on user training
- ✗ Dyne chemicals can be destructive to the part being tested
- ✗ Training the user is time intensive
- ✗ Results are often unrepeatable and unreliable
- ✗ User must have a certain amount of skill level
- ✓ Inexpensive

Most importantly:

- ✗ Dyne chemicals can be teratogenic which can lead to birth defects

#2

Water Break

Process

1

A user sprays or dips the part that needs to be tested with deionized water.

2

If the water sheets off, it has high surface energy. If it beads up, it has lower surface energy.

Weaknesses

Strengths

- User subjectively interprets the way the water sheets off of part to determine the surface cleanliness
- Not quantitative-only provides a go/no-go indication
- User must take part off of production line to perform test
- Dipping or spraying water can be destructive to part
- Process is messy and isn't easily performed in a production environment
- Mostly used on large sheets of metal without angles and undercuts
- Inexpensive

#3

Hand Held Surface Analyst

The Surface Analyst is a **fast, easy, accurate, and non-destructive** surface preparation gauge.

Unlike subjective legacy methods, the Surface Analyst provides a quantitative measurement and allows manufacturers to clean to a number and reduce product failure and waste.

Process

In 2 seconds, the Surface Analyst uses patented technology to place a drop of HPLC water onto a surface to determine how prepared that surface is for bonding, sealing, coating, printing, painting, or cleaning.

The 5 primary uses of the Surface Analyst:

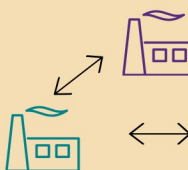
- Develop appropriate surface preparation processes to guarantee performance
- Verify condition of incoming surfaces from suppliers
- Confirm and document proper surface treatment in the lab and on the manufacturing floor
- Determine effect of aging on prepared surfaces
- Troubleshoot surface preparation processes

Cleaning to a Number

By having a number to clean to, manufacturers are able to:

1

Create a company-wide specification which can be used throughout many different manufacturing sites



Create a common language among many different manufacturing sites

2

3

Accurately predict good surface preparation and successful adhesion



Strengths

- Can be used in any environment including the lab and the manufacturing floor
- Can be used on most materials
- Takes measurements on multi-directional angles and on curved and rough surfaces
- Non-destructive to the user
- Non-destructive to the part being tested
- Provides a quantitative measurement
- Fast--takes 1 measurement in 2 seconds

Weaknesses

The Surface Analyst offers a spot check as opposed to an in-line inspection



The Surface Analyst™

Your factory floor handheld solution for reducing returns, rework, and recalls. In two seconds, measure any surface and determine if it is properly prepared. No more unacceptable failure rates, or lost productivity and materials.

Find out more at:

www.btglabs.com

- Guarantee proper bonding and printing on surfaces
- Verify uniformity of antimicrobial and lubricious coating on catheters with an audit trail
- Verify most surfaces including metals, polymers, composites, glass, non-woven textiles, and ceramics.

