

Cleaning Chemical Compatibility

Eliminate Polymer Device Cracking Caused by Aggressive Cleaning Agents and Disinfectants

Manufacturers of diagnostic machines, infusion pumps, medication management systems, mechanical ventilators, dental equipment and other devices are faced with a growing problem...chemical induced cracking of the polymer housings. The cleaning solvents and disinfecting agents used in hospitals and other healthcare-related facilities can result in a phenomenon known as Environmental Stress Cracking (ESC) of the polymer.

ESC can lead to failure of the device through ingress of fluids and loss of electrical connections. The amount of time required to cause cracking is dependent on the chemistry of the cleaning/disinfecting agent, the polymer system used and the design/assembly of the device.



ABS test specimens cracked by exposure to a quaternary disinfectant

SES Offers an Affordable Approach to Identify Damage-Producing Cleaners

Stress Engineering has developed comprehensive, affordable test methods to identify cleaners that can damage polymer components. Acting as an independent third party testing agency, we perform an array of tests using the solutions submitted. Testing is also completed with reference cleaners to provide a baseline for comparison.

All Parties Benefit from Our Services

For a device manufacturer:

It is critical to provide your customers with a list of cleaners compatible with your device. Restricting the use of damaging cleaners protects your brand and reduces warranty issues related to chemical attack.

For the cleaner/disinfectant manufacturer:

It is critical to have your product listed as an acceptable cleaning agent on as many devices as possible so that hospitals and labs can easily use your products. SES can efficiently conduct screening tests on an array of commonly used, medical grade plastics. The results of this testing will provide your sales force with the quantitative evidence needed by device manufacturers to approve cleaners.

Upcoming Events

[SPE Medical Plastics Minitec](#)

Biodegradable/Resorbable Polymers: Recent Themes and Challenges in the Medical Device Industry

Technical Presentation by Rob Klein, Associate II with SES

February 4, 2019 | immediately precedes MD&M West

Sheraton Park Hotel at the Anaheim Resort

[MD&M West 2019](#)

February 5-7, 2019 | Anaheim Convention Center | Anaheim, CA

SES Medical - Booth #2097

Polymer Laboratory at Stress Engineering - Booth #2095



Missed our latest newsletter?

Click [here](#) to read about Reliability for Combination Products and Custom Sensor Development for IIoT and Machine Learning Applications.

Stress Engineering Services Inc. provides expert engineering consulting services for:

- **New Product Development**
- **Material Science & Engineering (Full Polymer & Metallurgical Labs)**
- **Systems Engineering**
- **Risk Assessment**
- **Human Factors**
- **Sustaining Engineering**
- **Failure Analysis**
- **Package Development**
- **Verification Testing**
- **Equipment Validation & Development**

Our services help clients achieve not only technical success in avoidance or remediation of failures, but also commercial success in removing costs, risk and time from their process and product designs.

PHARMACEUTICAL | SURGICAL DEVICES | DRUG DELIVERY | MEDICAL EQUIPMENT
OCULAR | IMPLANTS | DENTAL | DIAGNOSTIC DEVICES | ENT | VETERINARY | VASCULAR

To learn more about Stress Engineering Services Inc., visit our [website](#) or contact us at 513-336-6701.

ISO 13485:2016 & ISO 9001:2015 Certified
ISO 17025:2005 Accredited for Several Test Methods
ISTA Certified Testing Laboratory Member

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