



## QSense Sensors for Assessment and Optimization of Cleaning Efficiency

QSense® sensor selection for cleaning analysis includes a wide range of surface materials commonly used in industry and research to assess and optimize cleaning performance. The sensors enable the monitoring of key processes such as cleaning dynamics, surface etching, and residual analysis.

This selection includes surface materials and coatings from various material groups, such as metals, ceramics, glass, polymers, and functionalized surfaces, designed to mimic diverse practical applications.

### Suggested Sensors

- Stainless steel SS2343 (equivalent to AISI 316)
- Soda-lime glass
- Cellulose
- Corn oil
- Nylon
- Polyethylene Terephthalate (Polyester mimic)

### QSense QCM-D in Cleaning Analysis

QSense helps you to answer:

- **What happens during the cleaning process?** QSense QCM-D monitors detergent activity, soil/material uptake and removal, as well as structural changes, providing a time-resolved view of cleaning and etching processes.
- **How does the cleaning process evolve under specific conditions?** The method tracks the interaction of cleaning agents with surfaces under different conditions such as pH, temperature, and exposure time, revealing aspects like soil wetting, dissolution, and re-deposition.
- **What does the surface/soil look like after cleaning?** The technology measures residual material on the surface post-cleaning, indicating whether the surface is fully cleaned or if contaminants remain

Sensor Name	Material	Delivery Time	Application
Qsx 303 – SiO <sub>2</sub>	Silicon Dioxide	1 week	Semiconductors, Medical and dental, Food industry
Qsx 304 – SS2343	Stainless Steel 2343	1 week	Biomedical implants, Marine environments, Food processing equipment
Qsx 315 – Cr	Chromium	4-6 weeks	Electroplating, Aeronautics
Qsx 319 – Fe	Iron	4-6 weeks	Electronics, Structures, Steel production & processing
Qsx 328 – SiN	Silicon Nitride	4-6 weeks	Cutting tools, Biomedical implants, CMP
Qsx 330 – ZrO <sub>2</sub>	Zirconium Dioxide	4-6 weeks	Dental implants, Optical coatings
Qsx 331 – AF	Amorphous Fluoro-polymer (Teflon)	4-6 weeks	Medical coatings, Optical sensing, Gas separation membranes
Qsx 336 – Borosilicate	Borosilicate glass	4-6 weeks	Laboratory equipment, Pharmaceutical, Packaging, Cookware and bakeware
Qsx 337 – Soda Lime	Soda lime glass	1 week	Windowpanes and glass doors, Food & beverage containers, Automotive windshields
Qsx 342 – Cooking Oil	Used cooking oil	4-6 weeks	Used cooking oil stains mimic
Qsx 343 – Mixed Starch	Soil stain mimic	4-6 weeks	Soil stains mimic
Qsx 344 – Egg Yolk	Egg yolk stain mimic	4-6 weeks	Egg yolk stains mimic
Qsx 345 – Coffee with Milk	Coffee with milk stain mimic	4-6 weeks	Coffee with milk stains mimic
Qsx 346 – Cellulose	Cellulose	4-6 weeks	Textile and fibers
Qsx 349 – Corn Oil	Corn oil sensor	4-6 weeks	Corn oil stains mimic (Tougher than cooking oil)
Qsx 900 – Nylon	Nylon	4-6 weeks	Clothing and textiles
Qsx 900 - PET	Polyethylene Terephthalate	4-6 weeks	Clothing and textiles, Polyester fiber mimic

## About us

At Biolin Scientific we are committed to empower professionals in Surface and Interface science and engineering to reach outstanding results faster and easier. Our instruments and sensors are tailored for advanced analysis of thin film properties and surface and interface phenomena at the nanoscale. Trusted by top universities and industrial labs worldwide, our premium solutions help solve complex challenges and drive progress in scientific research and product development.

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