



SciLog DN 3130: SciCon Conductivity Sensor, Post Autoclaving Sensor Response

Objective: Test SciCon Sensor Response after Repeated (4) Autoclave Cycles. Sterilization Conditions: Sterilization Temperature; 257°F (125°C), Sterilization Time: 30 min. Pressure: 19psi, Drying Time: 30 min. Conductivity Test Solution: 12.99mS (KCl)

SciCon, Luer Sensor ID	Pre-Autoclave Response mS	Post Trial 1 Response mS	Post Trial 2 Response mS	Post Trial 3 Response mS	Post Trial 4 Response mS
C1-240061-0208	12.86	12.91	12.94	12.84	12.80
C1-240058-0208	12.96	12.93	12.96	12.67	12.77
C1-240406-0208	12.93	12.99	12.41	12.66	12.60
C1-240059-0208	13.08	13.06	13.09	12.93	13.20
C1-240062-0208	13.02	12.97	13.14	13.01	13.09
Group Average	12.97	12.97	12.91	12.82	12.89
Group SD*	0.08	0.06	0.29	0.16	0.25

* SD = Standard Deviation

Test Protocol: Prior to autoclaving, factory-calibrated SciCon conductivity sensors (5) were removed from inventory and tested against a conductivity solution (12.99 mS) in a temperature equilibrated glove box. The "out-of-box" sensor response data is listed as "Pre-Autoclave" in the table above. The 8-pin sensor connectors were sealed with autoclavable tape (Cole-Parmer P/N: EG-08277-62) The sensors were placed into paper bag (6 1/2"x 4" x12 3/8") and placed in a Tuttnauer EZ9 Autoclave. The following conditions were maintained throughout the four autoclaving trials: 1.Sterilization Temperature: 257°F (125 °C); 2.Sterilization Time: 30 min; 3.Sterilization Pressure: 18 psi, 4.Drying Time 30 min.

After each trial, the SciCon sensors were allowed to cool for one hour inside the temperature controlled (25.0 °C) glove box. 12.99 mS test solution was re-circulated through the five, in-line sensors assembly for 30 min before reading the conductivity values. The SciCon sensor response data (displayed by the SciPres Monitor) is listed in the table above as "Post-Trial 1", "Post-Trial 2", "Post-Trial 3" and "Post Trial 4."

Post-autoclave sensor response tests were carried out with the original factory calibration. No sensor re-calibration were made before, during or after the three trials.

Summary: All SciCon sensors survived the four autoclave trials. However, sensor accuracy becomes increasingly compromised after multiple autoclave cycles. ***For accurate performance, SciCon sensors should not be autoclaved more than two times.***

NOTE: SciLog sensors have been designed for disposable, single-use applications. However, with proper care, the sensors can be re-used repeatedly while maintaining good accuracy and precision. If required, sensors can be re-calibrated.

CAUTION: Do Not Exceed Maximum Pressure of 60 psi

Released 5/5/08, SciLog Metrology, KS

Karl G. Schick, Ph.D.
VP Engineering