Testing the Development of Staining of Instruments
Cleaned with an Ultrasonic Cleaning Solution

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Purpose:
To determine if cleaning with Optim 28 results in the appearance of corrosion or staining on a variety of instruments.

Materials:
- 3x new Curette De Gracey 11-12 DL/HEX (Nordent Manufacturing, Inc.) Made in USA
- 3x new Sickle Scaler SE 23 (Henry Schein, Inc.) Made in Pakistan
- 3x new Curette De Gracey 3 / 4 (Premium Instruments)
- 3x used Sickle Scaler MT 29 (Hu-Friedy)
  - Used Explorer DE 3CH (Henry Schein, Inc.)
  - Used Curette 13/14 C (Zeffiro Lascod)
  - Used G Hartzell & Son Scaler (DenMat Holdings LLC)
  - Used Star Dental Gracey G11-12 (DentalEZ, Inc.)
  - Used Columbia 13-14 Curette (Goldman Products, Inc.)
  - Used Columbia 13-14 Signature Seven Curette (Goldman Products, Inc.)
  - Used H5/33 Jacquette Scaler (Goldman Products, Inc.)
  - STATCLEAN Ultrasonic Cleaner (SciCan)
  - Optim 28 cleaner (SciCan)
  - De-ionized (DI) water

Conditions:
All Instruments were cleaned for 20 cycles at 40 °C for each condition
  a) 1.5x listed concentration (1:85.3), and 10-minute cleaning times.
  b) 2.0x listed concentration (1:64) and 10-minute cleaning times.

Methods:
All of the instruments were placed in the ultrasonic cleaning unit for 10 minutes, removed, rinsed with deionized water, and gently wiped dry immediately, before being evaluated for staining.

All instruments were inspected with the unaided eye to look for spots, stains and pits both prior to the start of the study and then at every 5 ultrasonic cleaning cycles. If any new such blemishes occurred after initiation of the study, they were photographed and the number of cycles noted at the point when they were observed. A photographic representation of any significant changes on the instruments is reported.
Results
No stains, pits or rust spots formed after 400 minutes of ultrasonic cleaning time using the higher than prescribed concentration of Optim 28 on any of the instruments tested. There were several instances of pre-existing stains on used instruments that were removed by cleaning with Optim 28.

Conclusion
Optim 28 does not cause noticeable staining of the instruments tested for up to 400 minutes of ultrasonic cleaning time, which is equivalent to 80 five-minute cycles.
Figure 4:
Goldman Signature 7 series, before Optim 28 cleaning.

Goldman Signature 7 series, after Optim 28 cleaning.

Figure 5:
Star Dental Curette, before Optim 28 cleaning.

Star Dental Curette, after Optim 28 cleaning.