CPAC ENVIRONMENTAL SOLUTIONS

SterilizerNews

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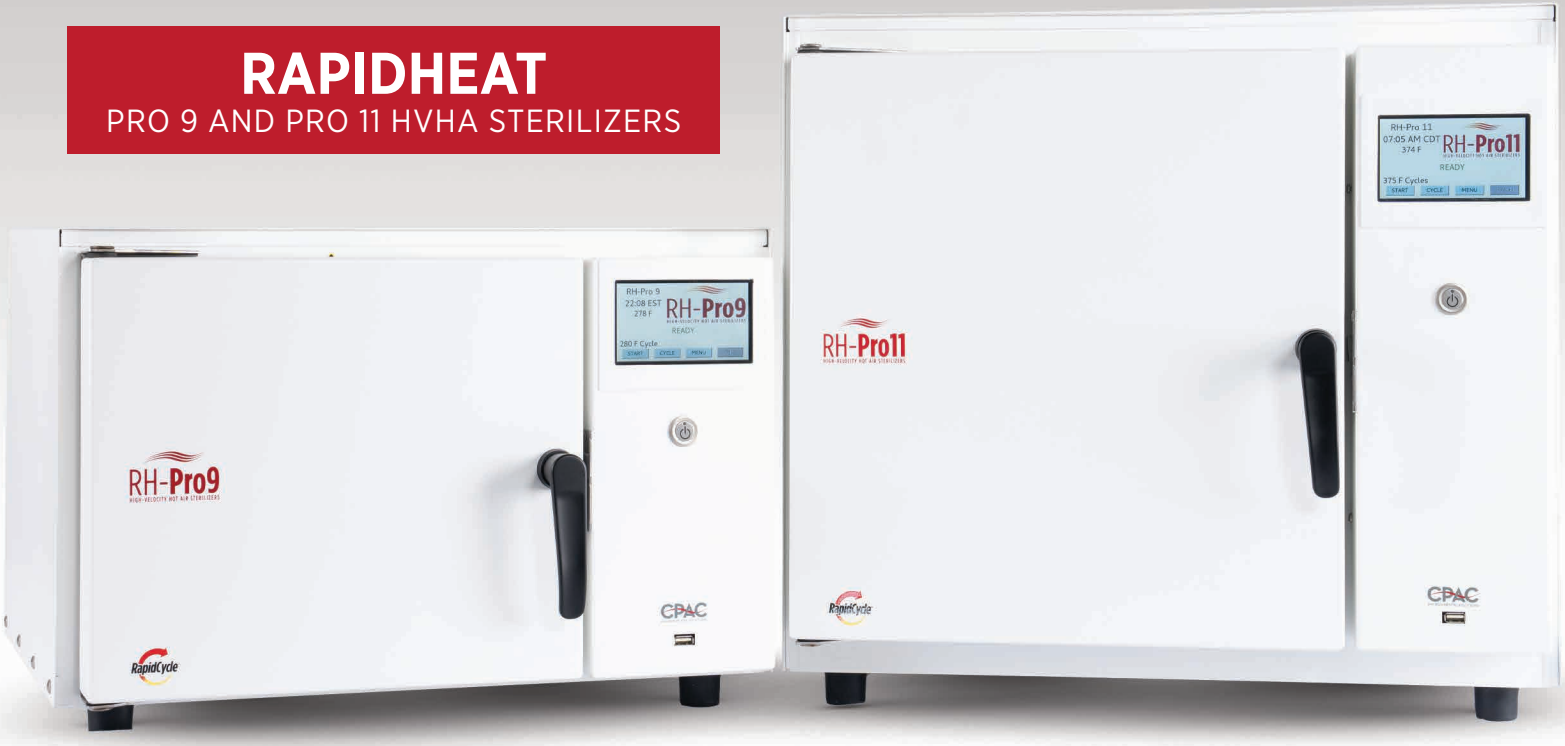
RAPIDHEAT
PRO 9 AND PRO 11 HVHA STERILIZERS



Scientific Research Confirms the Superiority of Dry Heat Sterlization

Performing both a literature review and innovative research a comprehensive examination was conducted analyzing the science behind dry heat sterilization. CPAC's White Paper, "RapidHeat™ High-Velocity Hot Air Sterilization: A Comparison to Steam Sterilization" recommends readers dismiss the dated facts or misinformation on dry heat sterilization. Much of what has previously been written about dry heat sterilization in medical and dental trade journals and in professional and governmental medical publications is extremely out of date, having been derived from early commercialized applications of the technology. The paper documents how incomplete and misleading information has perpetuated the idea that dry heat sterilization is limited in its application and requires excessively high temperatures and long cycle lengths. It addresses how new testing methods have revealed that RapidHeat™ sterilization at low temperatures can outperform steam sterilization, particularly at 320°F where the turnaround of a cycle is comparable to steam.

The study also includes references and comparisons to NASA's original research conducted during the 1960s and 1970s when the agency was attempting to determine the best method to decontaminate space vehicles before going to other planets. As a consequence of researching and applying all sterilization methods, NASA concluded that dry heat is the best sterilizing technology, labeling it as the "Gold Standard" for microbial reduction and its ability to penetrate encapsulated bioburden. This is an extremely important consideration if a device is not properly cleaned of debris or residue that may harbor microbial contaminants. Steam and chemicals have been proven unable to reliably penetrate and inactivate encapsulated bioburden.

Dr. Sig Slavik, Director of Research and Development at CPAC, performed High-Velocity Hot Air (HVHA) sterilization testing at equivalent steam sterilization temperatures ranging from 250°F to 320°F, temperatures significantly lower than RapidHeat's HVHA originally established operational temperature of 375°F. The time/temperature profiles of the 320°F cycle demonstrated that RapidHeat becomes equivalent to steam in total processing times without deterioration to medical instruments or to the steam sterilization pouch and instrument wrap commonly used to package the instruments. The following table shows a comparison of processing times between a CPAC's RapidHeat RH-Pro11 sterilizer and a comparable Midmark M11 sterilizer.

Pre-Programed (Wrapped/Pouched Instruments)	Sterilization Temperature		Hot Cycle Time: (Fill Time, Heat-up and Vent-Minutes)[2]		Sterilization Process Time (Minutes)[3]		Dry Time Minimum (Minutes)[4]		Total Process Time (Minutes)	
	M11[1]	Pro11	M11	Pro11	M11	Pro11	M11	Pro11	M11	Pro11
Small Instruments	270°F	320°F	15	0	3	47	30	0	48	47
Large Instruments	270°F	320°F	17	0	5	52	30	0	52	52
Wrapped Cassettes	250°F	320°F	14	0	30	62	30	0	74	62
Handpieces	270°F	320°F	16	0	6	35	30	0	52	35
	M9[1]	Pro9	M9	Pro9	M9	Pro9	M9	Pro9	M9	Pro9
Small Instruments	270°F	320°F	11	0	3	42	30	0	44	42
Large Instruments	270°F	320°F	12	0	5	46	30	0	47	46
Wrapped Cassettes	250°F	320°F	10	0	30	53	30	0	70	53
Handpieces	270°F	320°F	11	0	6	29	30	0	47	29

1) M11 and M9 data extracted from Midmark published on-line documents
2) Hot Cycle and Dry Time sequence is not applicable to RapidHeat HVHA technology
3) Sterilization Processing Time for RapidHeat HVHA technology begins at the initiation of the Processing Cycle
4) No Drying Cycle required for RapidHeat HVHA technology.

The complete series of studies are revealed in the white paper with D-value analyses that demonstrate superior effectiveness of RapidHeat HVHA sterilization when compared to steam:

- **More precise and consistent temperature measurement and control**
- **Rapid and conductive heating kills all viable microbial contaminants**
- **Precise temperature stability throughout the sterilization process**
- **HVHA superiority validated through NASA research comparison**

About RapidHeat HVHA Sterilizers - Features and Benefits

CPAC Equipment, Inc. manufactures tabletop RapidHeat Sterilizers designed for use by healthcare, dental, and veterinary professionals. They are manufactured in two sizes featuring a rectangular chamber for uniform capacity with various time/temperature cycles and a touch screen operation for ease of use.

FEATURE	BENEFIT
Dry Sterilizing Environment	Eliminates Instrument Corrosion & Wet Loads
Simple Mechanical Design	Easy Operation with Minimal Maintenance and Repair
High Temperature Cycles	Fast Turnaround for Immediate-Use
Low Temperature Cycles	Option for Heat-Sensitive Instruments
Environmentally Sustainable	Uses 65% Less Energy than Steam & NO Water