

Temperature Stability of FIBERLite Rotors At Different Rotor Speeds and Run Times in RC-6 Plus Centrifuge

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Temperature measurements were made with samples using the F14-6x250y ml and F10-6x500y ml carbon fiber rotors spinning at 13,000 and 14,000 rpm, and 9,000 and 10,000 rpm respectively in the Thermo (Sorvall) RC-6 PLUS Superspeed centrifuge for 30 min, 60 min, 90 min and 120 min with each rotor. The rotors were pre-cooled to 4°C and the temperature in the centrifuge was set to control each rotor sample temperature at 4°C to simulate biological studies. To simulate non-biological studies the centrifuge temperature was set at 20°C and each rotor sample temperature was pre-cooled at 20°C.

A thermister probe was placed in the tubes containing water that was used as the sample. Before and after each run the sample temperature was measured and recorded for both temperature studies. The tests showed that the average sample temperature change during the runs was approximately +/-1.5°C from the initial temperature. This indicated that the sample temperature was controlled safely for typical centrifugation experiments.

Figures A and B show profile curves of the temperature change during run times and rotor speeds with the rotor while the Tables show the temperature tests done with the rotors. The Table data also show the initial starting temperature at 4°C and 20°C before the run and the actual sample or run temperature after the run at the rotor speeds tested.



Rotor Model: F14S-6x250y



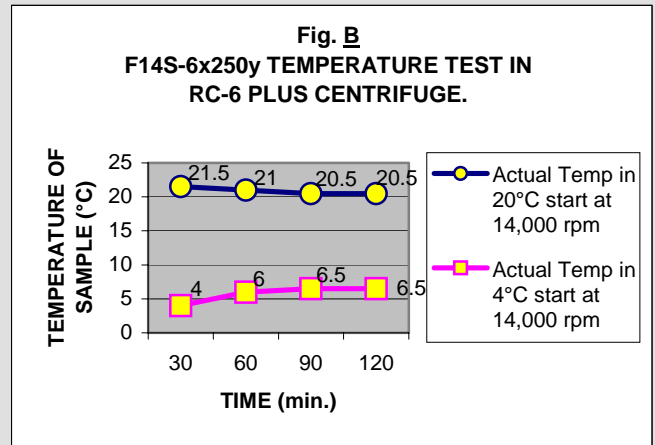
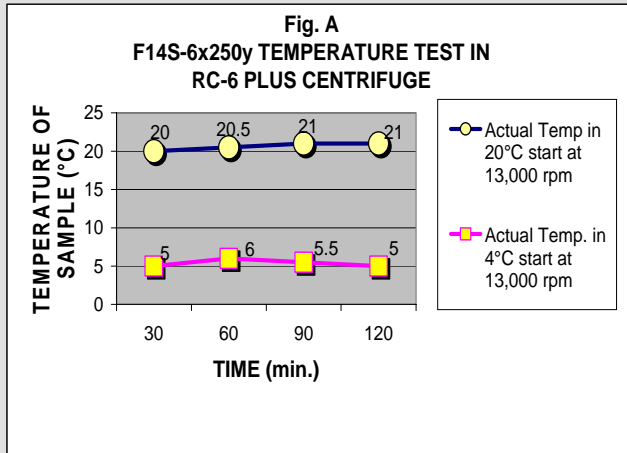
Rotor Model: F10S-6x500y

For Further Information:

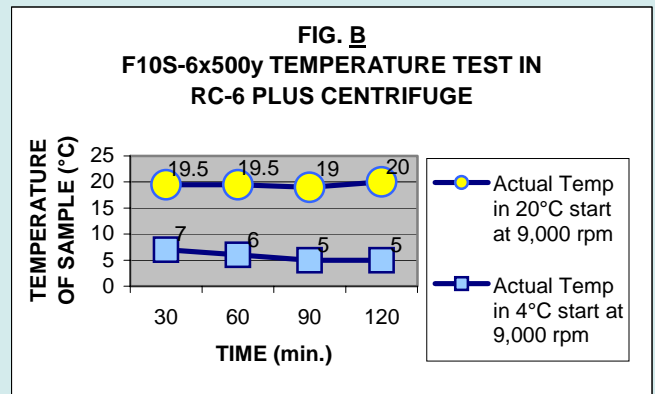
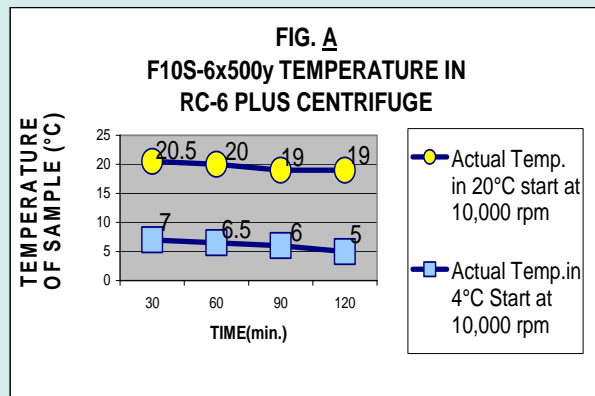
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F14S-6x250y



F10S-6x500y



ROTOR SPEED (RPM)	RUN TIME (MIN.)	TEMPERATURE OF SAMPLE (C)	ACTUAL SAMPLE TEMPERATURE (C)
10000	30	4	7.0
10000	60	4	6.5
10000	90	4	6.0
10000	120	4	5.0
9000	30	4	7.0
9000	60	4	6.0
9000	90	4	5.0
9000	120	4	5.0
10000	30	20	20.5
10000	60	20	20.0
10000	90	20	19.0
10000	120	20	19.0
9000	30	20	19.5
9000	60	20	19.5
9000	90	20	19.0
9000	120	20	20.0

Table: F10S-6x500y

ROTOR SPEED (RPM)	RUN TIME (MIN.)	INITIAL TEMPERATURE OF SAMPLE (C)	ACTUAL SAMPLE TEMPERATURE (C)
14000	30	4	4.0
14000	60	4	6.0
14000	90	4	6.5
14000	120	4	6.5
13000	30	4	5.0
13000	60	4	6.0
13000	90	4	5.5
13000	120	4	5.0
14000	30	20	21.5
14000	60	20	21.0
14000	90	20	20.5
14000	120	20	20.5
13000	30	20	20.0
13000	60	20	20.5
13000	90	20	21.0
13000	120	20	21.0

Table: F14S-6x250y