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LABORATORY OUTLINE:
HEAT TREATMENT OF ALUMNINUM ALLOY (cf. ASTM B918)

OBJECTIVE
To determine the effects of time and temperature on the precipitation hardening of Type 2024 aluminum.

EQUIPMENT REQUIRED
Heat treat furnaces (3)
Rockwell Hardness Tester
Tongs / Gloves
Metal Bucket

MATERAILS REQUIRED
Specimen (1/2 in. Diameter, ½ in. long), Type 2024 Aluminum (11)

PROCEDURE
Preheat Blue-M #1 to 950^{o}F; Preheat Blue-M #2 to 500^{o}F; and Preheat Hoskins to 250^{o}F. Note: it can take 1-2 hours for furnaces to come up to temperature.
Place all eleven specimens into Blue-M #1; hold for one hour
Quench all eleven specimens in agitated ice water
Measure the Rockwell B hardness of one of the as-quenched specimen; set this specimen aside for room temperature aging
Place five of the remaining as-quenched specimens into Blue-M #2 and five into Hoskins
Quench one specimen from each furnace, after 5,10, 15, 20, and 30 minutes
Measure Rockwell B hardness of each of the above specimens