

## **Fabrication Techniques and Properties of Overcoated Resorcinol-Formaldehyde Foam Shells\***

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Resorcinol-formaldehyde (R/F) shells have been fabricated using microencapsulation for use at the OMEGA facility. Fabrication techniques used in obtaining concentric shells (>95%) in density range of 100–150 mg/cc are discussed along with batch statistics. The R/F foam shells have been overcoated with permeation seal coatings deposited by two methods. In the first method, plasma polymer is coated directly on the R/F shells. In the second method, R/F shells are coated using a chemical interfacial polymerization technique. Properties of the overcoated shells important to target performance are gas retention, strength, and surface finish. The results of property measurements for each overcoated target system are presented. Comparison of the property measurements for each system are discussed with the goal of producing an optimum target for use at OMEGA.

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