Problem Scenario: You Can Take the Pressure

Read the problem scenario below.

Design a new capsule that will be able to reach the bottom of the Mariana Trench and return slowly to the surface. Your specific responsibility is to explore the effects of pressure on the buoyancy of materials. Develop and test a prototype that remains slightly positively buoyant in up to 10 feet (3 meters) of water. You will need to follow the engineering process to design the capsule and to create a prototype that can be tested in a 4-inch (10.2 centimeter) wide water column.

Problem
• Design a capsule that can remain slightly positively buoyant in up to 10 feet (3 meters) of water.

Constraints
• Capsule prototype must fit within a 4-inch (10.2 centimeter) wide water column.
• Capsule must be able to be submerged in water.
• Capsule may not be tethered in any way.
• Capsule prototype must be made from the available materials.