

7.1 PETROCHEMICAL FABRIC TEST

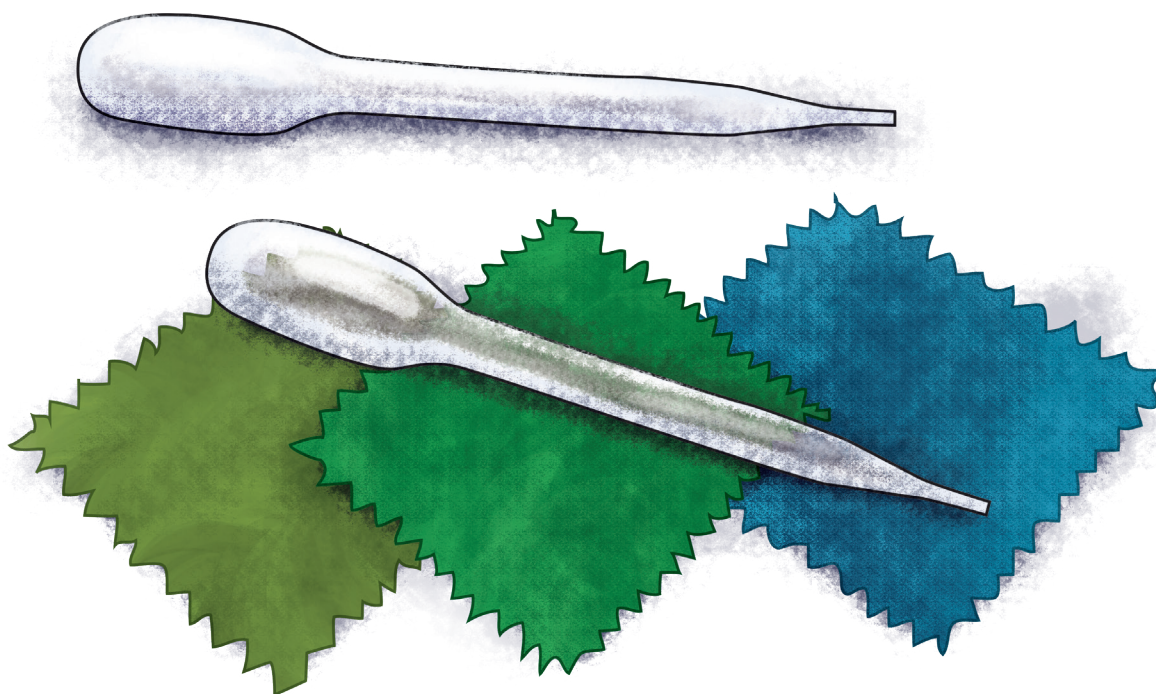
Which fabric is best for swimsuits?

MATERIALS

- Fabric samples of the following materials:¹
 - Polyester
 - Lycra®
 - Spandex
 - Lastol (Dow XLA)
 - Rayon
 - Nylon
 - Polyurethane
 - Polybutylene Terephthalate²
- Dropper bottles containing water and chlorine (calcium hypochlorite) at 1.0–3.0 ppm, with a pH of 7.2–7.8
- Other materials as requested by groups for testing the fabrics

DIRECTIONS

1. Distribute fabric samples to groups of 3-4.
2. Pose the question: Which fabric would make the best material for a swimsuit?
3. Have students design tests to determine the best-suited material for the rigors of swimming.
4. Brainstorm the conditions of a typical swimming pool.
5. Determine other requirements that swimsuits need to withstand.
6. Once their tests are designed and approved by you, or a committee of “safety regulators,” have students proceed to test each material on the aspects they determined above.
7. Have students collect qualitative and quantitative data about the durability and suitability of each material in a data table.
8. Have students graph the quantitative data to show which material performs the best.



1. It may be difficult to find fabric samples that include only one of the materials. Combined materials can be used.

2. “Polybutylene Terephthalate has a natural stretch similar to Lycra® and can be incorporated into sports wear.

On account of its chlorine resistance it is found especially in swim wear.” Wikipedia, “Polybutylene Terephthalate”