



# Barrier and Surface Properties

## WATER VAPOR AND OXYGEN PERMEABILITY AND CONTACT ANGLE MEASUREMENT

### KEY WORDS

PERMEABILITY,  
CONTACT ANGLE,  
SURFACE  
PROPERTIES

### DESCRIPTION

The University of Aveiro has the necessary facilities for determining the barrier and surface properties of polymeric materials. Permeability tests are performed under controlled temperature and relative humidity conditions, using specialized equipment for water vapor transmission rate (WVTR) and oxygen transmission rate (OTR), in accordance with international standards (ASTM and ISO). Contact angle measurements are carried out using goniometric systems equipped with high-resolution cameras and automated software for droplet analysis. These measurements can be performed using different test liquids.

### AVAILABLE TECHNIQUES AND/OR EQUIPMENT

- Water vapor permeability measurement (WVTR)
- Oxygen permeability measurement (OTR)
- Analysis of contact angle using a goniometer

### APPLICATIONS

- Evaluation of packaging materials
- Development of functional coatings
- Study of nanocomposites
- Quality control of materials

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