

SURFACE TENSION – SOAP FILM

MED 18.06



Material:

Item-no.	Qty.	Description
DM885-1L	1	Soap film apparatus, large ring

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Purpose

Making the term surface tension understandable.

Preparation

- we put about 2 caps full of soap solution from the bottle into the plastic plate
- afterwards we fill water in the plate (around 1 cm) and obtain a dilute solution by stirring

Experiment 1

We dip the ring in the diluted solution and carefully lift it up.

Again we dip the ring into the solution and lift it completely out of the plate.



Experiment 2

We tie a thread to the edge of the ring.

Afterwards we dip the ring with thread into the plate and then carefully pull it out.

The soap lamella behaves like a tight skin (like at a drum).

If we burst the lamella on one side of the thread, the tension is shown by the tension of the thread.

The same force acts on the thread at every point, you measure it as force per meter or centimeter.



Note

The surface tension can also be calculated from the radius and the size of the overpressure in soap bubbles.

$$p = 4 \cdot \sigma / r$$