

# Instruction for professional Widder-Alcoholmeter

**Combined-Alcoholmeter 35 – 45 % vol Temp. 20 C = 68 F with Thermometer**

## **General:**

The alcoholmeter measure alcohol / water liquid only.

According to the strength the alcoholmeter sinks in more or less. A body in a liquid lose as much weight as the weight of displaced liquid ( = **principle of Archimedes** )

As the expansion of liquid is subject to temperature all alcoholmeters are made for an certain temperature. (stated on the scale) Therefore you have to use the instrumente all time at that temperature. If it is not possible use the encl correction schedule and correct your reading.

## **Before use make sure:**

- That you use an Alcoholmeter with thermometer( = combined alcoholmeter) To be able to make temp correction. An alcoholmeter with incorporated thermometer is more accurate acc. to DIN standard!
- That the alcoholmeter and test jar is clean and free of oil or oil film ! Clean the alcoholmeter before and after use with linen cloth.
- Make sure that the thermometer thread (liquid in the thin capillary ) is not separated! If see Thermometer thread is separated
- The diameter of the test jar must be so large that the alcoholmeter can float well !
- The liquid you test have to be clear and free of solids contents !
- The clean alcoholmeter should be held at the thin part above the paper scale only.
- Make sure that liquid temperature and test-room temperature similar. If not store it in the test-room for about 1-2 hours. Keep it in a closed bottle or similar!

## **In use:**

- You finished instruction a to g ??
- Poure the prepared liquid into the test jar, leaving at least 2" = 5 cm from the rim free. Close the test jar with the palm of the hand and shake 5 times backwards and forwards.
- The alcoholmeter is now dipped slowly into the alcohol mixture until it floats freely. If bubbles are on the body of the alcoholmeter take it out and dippe it into the alcohol slowly again up to there is no bubble! The alcoholmeter should not float up and down! The meniscus will get more wetting as it is correct and liquid film make the weight of the alcoholmeter higher!
- Take reading at eye level at the spot where the thin part (stem) intersects the liquid, i.e. at the level of the liquid surface.
- Note the reading and the reading of the built-in thermometer! If temperature reading is different than 20 C look in the correction schedule and find the real strength of alcohol !

## **Using the correction schedule:**

Example of reading Thermometer 12 oC, Alcohol 44,5 %

This show an actual strength of alcohol of 47,6 % vol

You followed our instruction ! So keep in mind that an undamaged alcoholmeter give you correct reading only! Protect the alcoholmeter at heat, cold, concussion !

## **Thermometer thread is separated:**

All the **Widder** Thermometers have an expansion bulb = on top of the capillary !

Heat up the temperature of thermometer **very very slowly** so that the liquid **flow slowly** in the expansion bulb.

Bump the thermometer bulb ( = mini tank of the liquid – at the bottom of the lower part of the alcoholmeter)

several times against a soft surface! Naturally some liquid must be all time at the lower part of the expansion bulb!

Be **carefull not to over heat the thermometer it can explode and thermometer + alcoholmeter is damaged!**

**Mercury steam is dangerous** ! If you do not want - make it like an fever thermometer (medical thermometer)

swing several times (take much longer)