SI Analytics

a xylem brand

AVSPro III

Precision and reliabilty in viscometry

AVSProIII 200701.pptx

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Basic description

AVS Pro III

Automatic viscometry system

- Max. operation reliability
- Max. safety for operators
- Max. accuracy and reproducibility
- Allows unattended 24-hour operation
- PC controlled
- Easy to use
- Different configurations available:

  E.g. 2-place or 4-place, rinsing with next sample or solvent, filtration,…

  depending on demands

Three different sample racks

56x 20 ml sample tubes

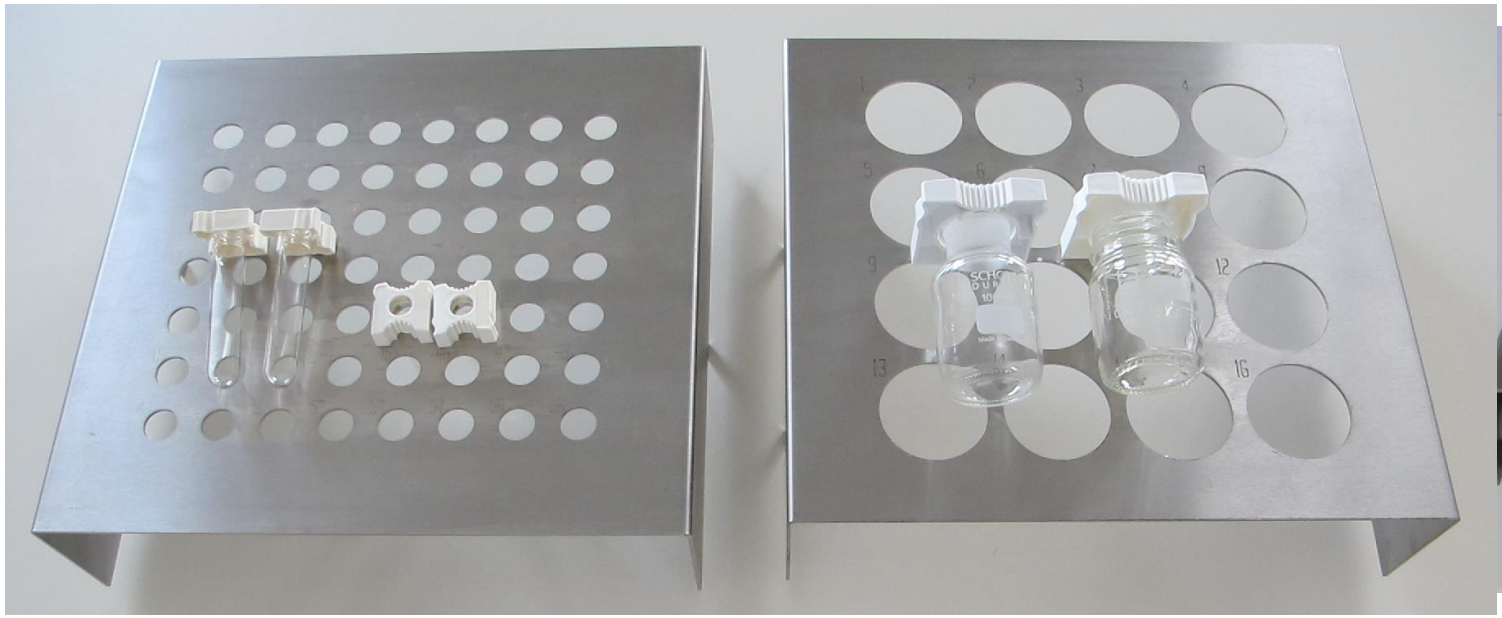
Mostly for oil applications /
rinsing with solvent

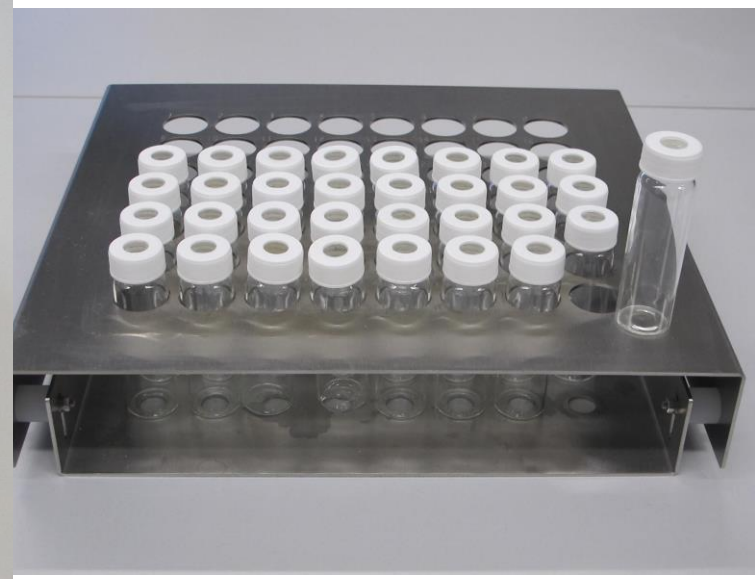
16x 100 ml sample bottles

For polymer application /
rinsing with sample solution

56x 40 ml sample bottles

For polymer application /
rinsing with solvent

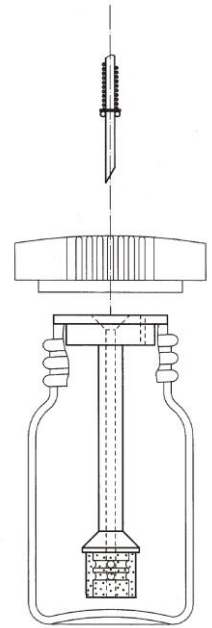




ProClean – Innovative filtration accessory

Properties

- Sample preparation and filtration in one way - without additional handling of aggressive solutions
- Avoids hygroscopic effects



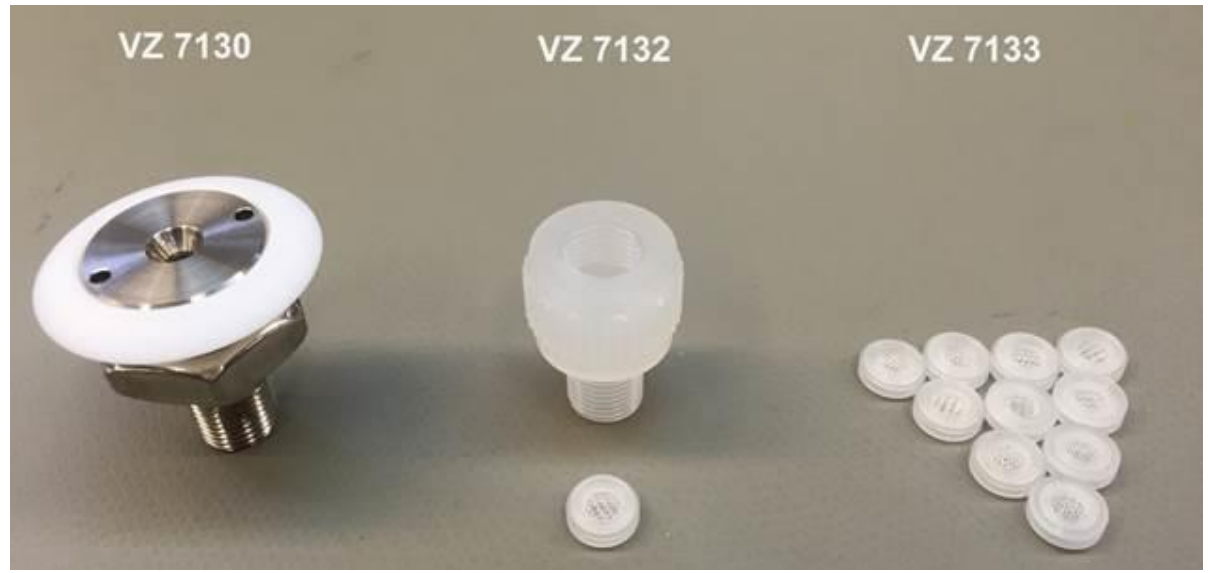
Applications

- All solutions containing fillers, particles or fibers

Inline filter – for small amount of particles

Properties

- The Inline filters are mounted in the filling line, between docking station and filling tube.
- The small filter can only catch a small quantity of particles. After a certain time, depending on particle load, the filter VZ 7133 has to be cleaned or replaced.



Applications

- Suitable for virgin (not reinforced) polymer samples, with just few particles inside. Not suitable for reinforced polymers.

Sample preparation using burette

Easier with automatic sample preparation:
Balance and piston burette Titronic® 500

Advantage: Easy handling

- No volumetric flasks required –
  only Standard bottles
- Sample weight not fixed to certain value
- Automatic calculation of dosing volume

Amount of additivs is substracted by internal burette software:

E.g.: Content of 10% glass fibres, weighted sample 250 mg

⟹ Corrected sample weight: 225 mg

Rinsing with next sample

Typical applications:

- Polyamide / sulfuric acid (ISO 307)
- PET or PBT / phenol / dichloro benzene (ISO 1628-5) in Micro-Ubbelohde viscometer

Advantages

- Simpler configuration than working with solvent rinsing
- No drying necessary – short rinse time
- Can be combined with ProClean filtration system

Rinsing with external solvent

Basics and applications

- For very viscous samples, when next sample rinsing is not sufficent – e.g. oil applications.
- PET or PBT / phenol / dichloro benzene or other solvents according to ISO 1628-5, when using Ubbelohde viscometer of standard size

Advantages

- Sample amount: Only 1 filling of viscometer necessary
- Thorough cleaning of viscometer by rinsing solvent(s)
- Sample rack with 56 position can be used
- Less consumption of toxic / expensive reagents like phenol / dichloro benzene

Disadvantages

- Somewhat bigger setup and more expensive
- Cannot used together with ProClean filtration system

1 2

Rinsing stations for up to two rinsing solvents

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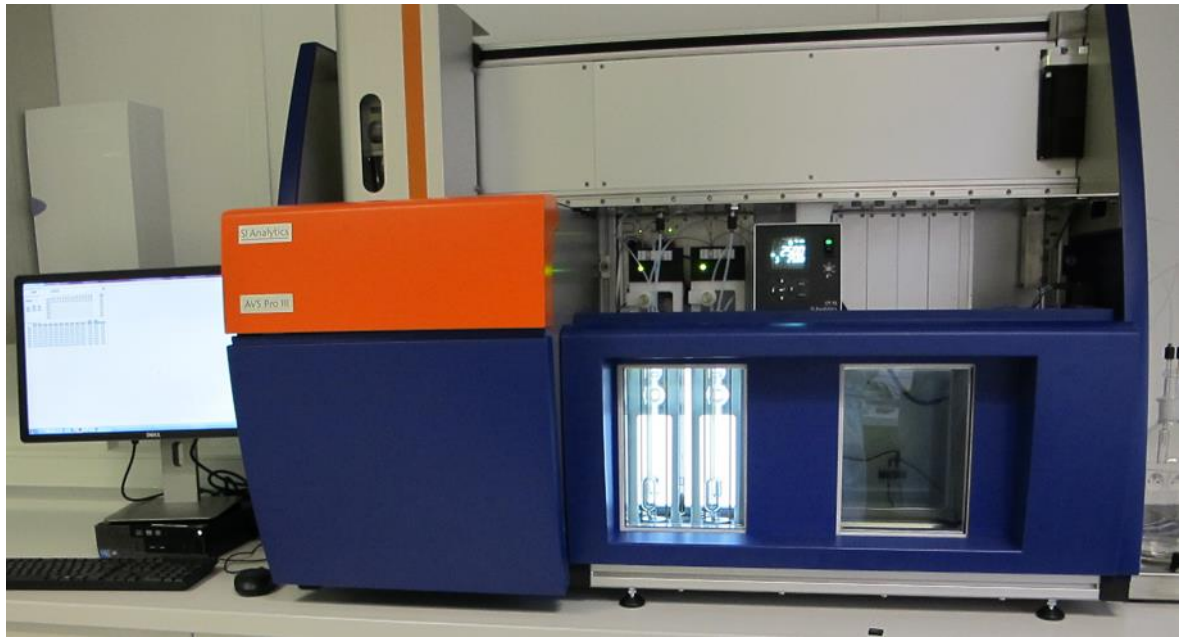
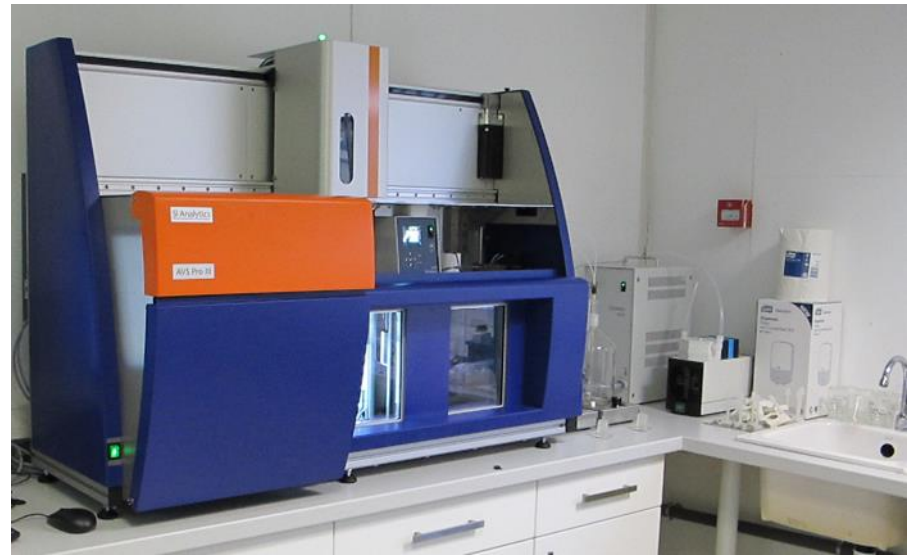
Typcial configurations / applications

AVSPro III, rinsing with next sample

Application PA / sulfuric acid (ISO 307)





Equipped with 2 meas. positions – but as extension to 3rd and 4th position was planned for future,
a thermostatic bath with 4 positions is already installed (France, 2015).

AVSPro III, rinsing with next sample

PET / phenol / dichlorobenzene (ISO 1628-5)

Micro-Ubbelohde viscometer

2 waste bottles for
2 measuring positions

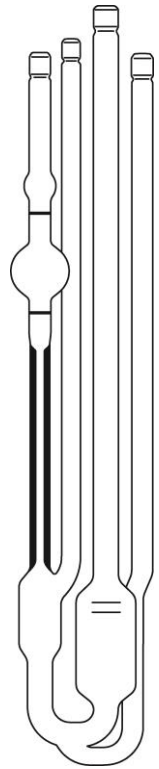
Cooler CK 310 for
counter cooling

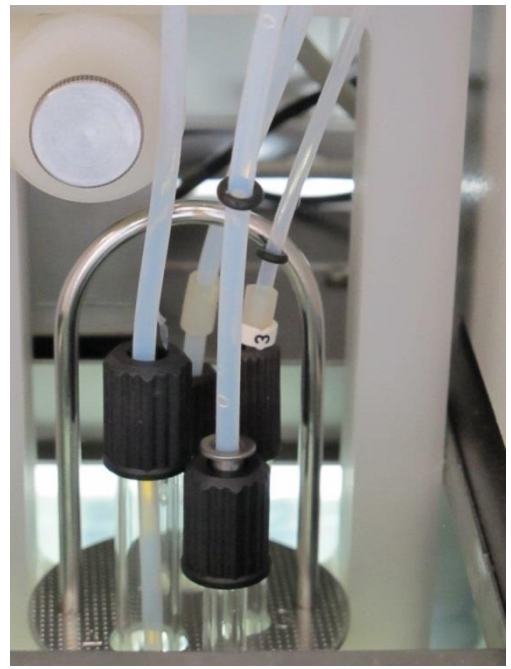
In this case, customer preferred rinsing with next sample instead of solvent rinsing.

AVSPro III, rinsing with solvent

PET / phenol / dichlorobenzene (ISO 1628-5)

Customized adapter to use 40 ml sample vials.

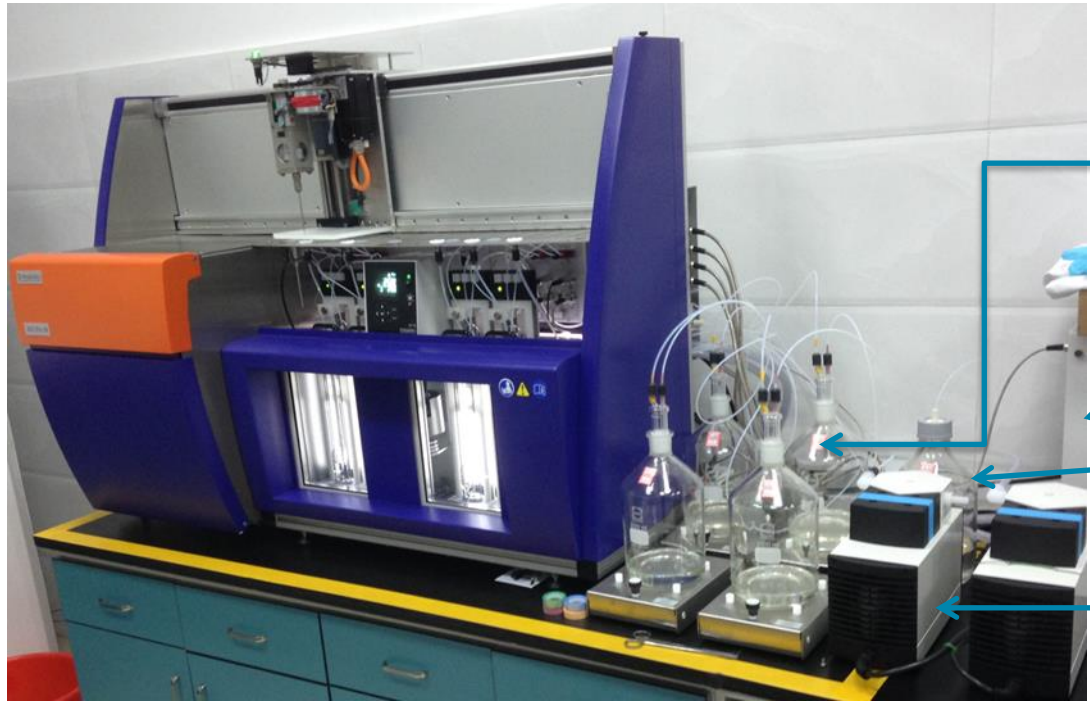




Use of 4-tube-viscometer with screw neck connection ensures save operation and complete drying after solvent rinsing.

AVSPro III, rinsing with solvent

PET / phenol / dichlorobenzene (ISO 1628-5)



4 waste bottles for 4 measuring positions

Cooler CK 310 for counter cooling

Bottle for rinsing agent chloroform

2 vacuum pumps for rinsing and drying

Rinsing solvent: chloroform (China, 2014).

As rinsing is done with external solvent, only sample volume for 1x filling of Ubbelohde viscometer is required.

AVSPro III, rinsing with solvent

PET / phenol / dichlorobenzene (ISO 1628-5)

Bottle for rinsing agent dichoromethane

4 waste bottles for 4 measuring positions

This system is configured with 56 x 40 ml sample rack.
Cooler and vacuum pumps are positioned below the hood.