World Calibration Centre
for Aerosol Physics

Short audit physical aerosol properties – Checklist

Version 2.0 AW/TT 2014

Station name: _____

Date: _____

Auditors: _____

- Manuals for instruments available on site yes no
- Written logbooks for each instrument yes no
- General impression excellent good fair poor

Comments:_____
_____
_____
_____

Note: All flow rates of inlet and instruments should be measured!

Type of reference flow meter: _____ Serial number: _____

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Aerosol inlet:

Inlet: PM10 NOAA other_____

Material: stainless steel conductive tubing other _____

Design: vertical ____meters horizontal ____meters bends _____

tube diameter: ____ mm flow rate: ____l/min

Calculated Reynolds number (use *aerocalc)*: _____

Calculated residence time in tube: _____

Aerosol dryer: yes no type:_____

Relative humidity of aerosol: _____% RH not available

Inlet according to recommendations: yes no

Comments:_____
_____
_____
_____

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Absorption:

Aethalometer MAAP PSAP Other: _____ n/a

Type: _____ Serial number: _____

Wavelengths: _____

Firmware version:_____

Software version: _____

Data format: _____(e.g. scientific=12 for MAAP)

Last calibrated: _____ by _____

Nominal flow rate:_____ measured flow rate: _____ at____hPa, ____C

Flow rate indicated on front panel: _____

Indicated concentration with absolute filter: _____

Current transmission: _____ %

Last filter change:_____ at _____ % transmission

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_____
_____
_____
_____

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Scattering Coefficients:

Nephelometer: TSI Ecotech Radiance Research Other: _____ n/a

Type: _____ Serial number: _____

Wavelengths: _____

Firmware version:_____

Software version: _____

Gases for span check: CO_2 SF_6 n/a

Last zero check: _____ last span check: _____

Last calibrated: _____ by _____

If possible ask for calibration of the instrument by station personnel.

Compare new calibration constants with previous calibrations recorded in logbooks.

Nominal flow rate:_____ Measured flow rate: _____ at____hPa, ____C

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_____
_____
_____
_____

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Mass concentration:

TEOM Filter based Other: _____ n/a

TEOM:

Type: _____ S/N control unit: _____ S/N sensor: _____

Firmware version:_____

Software version: _____

Temperature settings: Sample:_____ Sensor:_____

Indicated concentration with absolute filter: _____

Separate inlet yes type:_____ no

Nominal sample flow rate: _____ measured: _____ at____hPa, ____C

Sample flow rate indicated on front panel: _____

Nominal bypass flow rate: _____ measured: _____ at____hPa, ____C

Bypass flow rate indicated on front panel: _____

Nominal total flow rate: _____ measured: _____ at____hPa, ____C

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_____
_____
_____
_____

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Filter based measurements:

Nominal sample flow rate: _____ measured: _____ at____hPa, ____C

Volume calculated from Gas meter Flow rate and time

Filter weighing on site: yes no

If filter weighing on site: Weighing room temperature: _____

Weighing room rH: _____

Type of microbalance: _____ S/N: _____

If weighing off site: Filter shipping documented yes no

Data submitted to data centre: yes no

Comments:_____
_____
_____
_____

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Particle number size distribution:

Type of instrument:_____ Manufacturer:_____S/N: _____

Type of charger_____ Nominal Activity_____ Date manufactured_____

Aerosol dryer: yes no Type_____

Sheath air dryer: yes no Type_____

Temperature sensor aerosol: yes no

Temperature sensor sheath air: yes no

Humidity sensor aerosol: yes no

Humidity sensor sheath air: yes no

Nominal sheath air flow rate _____ l/min

Measured sheath air flow rate: _____ at____hPa, _____C

Nominal aerosol flow rate _____l/min

Measured aerosol flow rate: _____ __at____hPa, _____C

Indicated concentration with absolute filter: _____

Instrument built according to recommendations: yes no

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_____
_____
_____
_____

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Particle number concentration

Type of instrument:____________ Manufacturer:_______________S/N: ______

Nominal ______flow rate: _________measured: ___________ at____hPa, _______C

Last flow calibration:______________________

Last efficiency calibration:_____________ Material :_______ Which lab: ___________

Indicated concentration with absolute filter: ___________________________________

Condition of instrument: excellent good fair poor

Nominal ______flow rate: _________measured: ___________ at____hPa, _______C

Last flow calibration:______________________

Last efficiency calibration:_____________ Material :_______ Which lab: ___________

Indicated concentration with absolute filter: ___________________________________

Condition of instrument: excellent good fair poor

Nominal ______flow rate: _________measured: ___________ at____hPa, _______C

Last flow calibration:______________________

Last efficiency calibration:_____________ Material :_______ Which lab: ___________

Indicated concentration with absolute filter: __________________________________

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:____

____

____

____

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Cloud condensation nuclei concentration

Type of instrument:_____ Manufacturer:_____S/N: _____

Supersaturations used: 0.1 0.2 0.3 0.5 1.0 other: _____

Software status lights green: yes no:_____

Aerosol _____flow rate: _____measured: _____ at____hPa, _____C

Total _____flow rate: _____measured: _____ at____hPa, _____C

Indicated concentration with absolute filter: _____

Last flow calibration:_____

Last supersaturation calibration:_____ Material $(NH_4)_2SO_4$ other:_____

Last OPC calibration (optional):_____

Condition of instrument: excellent good fair poor

Data submitted to data centre: yes no

Comments:_____
_____
_____
_____

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General remarks:

_____
_____
_____
_____
_____
_____

Date:_____ Signature:_____