

# RESOLUTIONS

MACPoll Workshop on Zero Gases

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VSL, Delft, The Netherlands

1. The very demanding specifications in the standard are relevant for measuring background levels; for urban levels they are less relevant
2. Water vapour specs for zero gas should be lowered for SO<sub>2</sub>, CO and NO<sub>x</sub>.
3. Production of zero gas is not seen as an issue, the demonstration of the compliance with specs is more difficult and economically significant
4. Certification programme of “critical impurities” in zero gas batches or process accreditation with check by NMIs could be a solution in order to make the realisation of zero gas cost effective

5. Traceable measurements for CRMs and zero-gas generators can be obtained by some spectroscopic methods regarded as “absolute” and other validated methods that do not need zeroing. These results can be used to check on zero-gas composition with other sensitive analytical techniques.
6. Oxygen content of zero-air should be specified due to its effect on UV analysis.
7. To be able to use new emerging techniques it should be specified in the standard that impurities affecting these techniques should be named and its maximum allowable fraction should be stated by which the same uncertainty levels can be achieved as with existing techniques.
8. It is advisable to have one zero gas including all specs from the different EN standards

9. Zero-gas is a non specific name and should be renamed as zero-gas standard
10. No QA/QC procedures are in place currently for zero gas generators. A certification /verification procedure is required especially if the generator efficiency is suspected to be changing in time.
11. Recommendations for the handling procedures for all types of zero-gas should be established