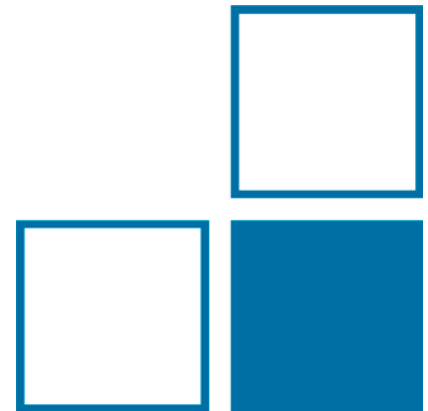


# Ethanol solutions for saturation-type generators

CRMs and local standard solutions

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## Definition of Certified reference material (CRM)

Reference material, accompanied by documentation issued by an authoritative body and providing one or more specified property values with associated uncertainties and traceabilities, using valid procedures. (VIM 5.14).

## Metrological functions of CRM:

- use of CRM as a standard to verify, calibrate and test measuring instruments;
- use of CRM to certify measurement procedures and/or to determine their uncertainties in the course of measurement; and
- use of CRM to calibrate measuring instruments in the course of measurement procedures.

## **Local standard solutions:**

Solutions prepared by the lab following their own defined procedures.

Typically, the reliability is based on the preparation procedure, analysis of the actual composition of the solution is not part of the routine.

## **Metrological comparability of measurement results**

“Comparability of **measurement results** that are metrologically traceable to the same reference”

### **→ Aim of test is crucial:**

- If traceability of the results is the aim, e.g. for verification or comparisons, CRMs should be used
- If results shall be consistent within a closed system, e.g. within a lab/ a batch of measurements , local standard solutions are sufficient

| CRM   | Local standard solutions  |
|---|---|
| For all measurements where the correct result is crucial, e.g. for verification | For measurements where results are compared with each other, but the absolute value is not important, e.g. most tests for type approval |
| Measurement uncertainty is given by the manufacturer                            | Measurement uncertainty has to be calculated for every batch  |
| High costs  | Lower costs   |
| period of supply and storage life has to be taken into account                  | Preparation just time for the measurements  |
| Guaranteed time of storage life   | Storage life is difficult to judge  |
| Only a limited range of concentrations commercially available                   | High flexibility in preparation, All kinds of concentrations and additional substances can be realized                                  |



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