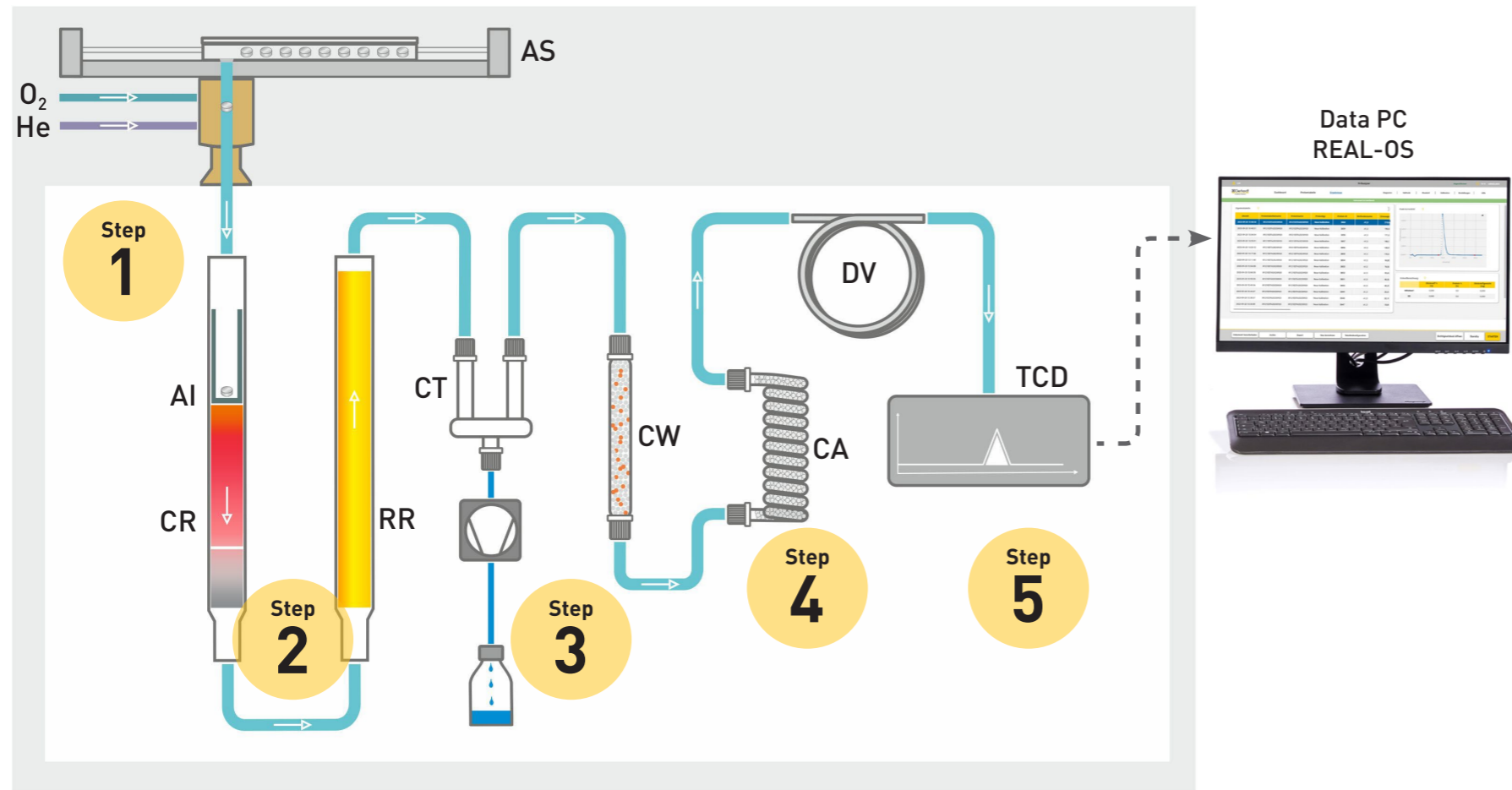
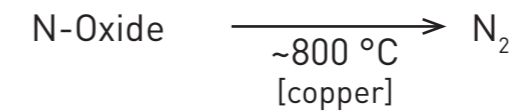
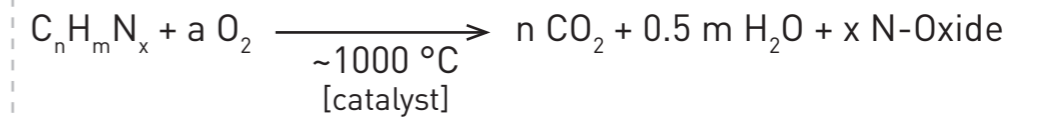


N-Realyzer

Precise and fast analysis results thanks to intelligent technology



- | | | | |
|----|--------------------|-----|---------------------------------|
| AS | Autosampler | CW | Chemical absorption trap |
| AI | Ash insert | CA | CO ₂ adsorption trap |
| CR | Combustion reactor | DV | Delay volume |
| RR | Reduction reactor | TCD | Thermal conductivity detector |
| CT | Condensation trap | | |



Step 1

The sample enters the Dumas system via autosampler (AS). In the combustion reactor (CR) at temperatures from approx. 1000°C an exothermic reaction takes place between oxygen (O₂), the tin foil and the sample. The sample is completely combusted with the help of oxidation catalysts.

Step 2

After combustion, the oxygen flow is switched back to helium (He) which serves as the carrier gas for the rest of the analytical process. The reduction into N₂ takes place on a copper surface in the reduction reactor (RR).

Step 3

The byproduct water is then separated by a condensation trap (CT) and the chemical absorption trap (CW). CW is an absorbent with colour change for the separation of residual moisture from the gas flow.

Step 4

Carbon Dioxide CO₂ is separated from the gas into a CO₂ adsorber / desorber system (CA). The CO₂ adsorbent is regenerated in the degassing furnace. The delay volume (DV) homogenises the gas flow that reaches the thermal conductivity detector (TCD).

Step 5

The remaining gas mixture passes the TCD leading to an output signal which is proportional to the nitrogen concentration in the combusted sample. Standard samples with a known concentration of nitrogen (eg. EDTA) are used for the calibration of the detector.