

Using LDO Probes in Concentrated NaOH

Introduction

In some specific applications it is necessary to measure the oxygen concentration in samples that contain NaOH (sodium hydroxide). This study checks the chemical resistance of body and sensor cap materials of the LDO probe in concentrated NaOH.



Figure 1: New LDO probe

Solution and Improvements

Measurements in 37% NaOH over a time period of four weeks show that the body is strongly attacked, while the rubber sealing and LDO cap are not damaged. The rubber sealing and LDO cap withstand the treatment with 37% NaOH and can be used even long-term in such samples.

Figure 2 photos show the damaged probe body from 37% NaOH.



Figure 2: Damaged LDO probes in NaOH

The LDO probe materials of the body (PPE = Polyphenylen-ether and PPO = Polyphenylenoxide) are resistant against concentrated NaOH solutions for a short time only. Long-term or frequent NaOH treatment may harm the body or integrated parts such as the temperature sensor.

Application Note: NaOH Exposure and LDO Probes



Figure 3: Damaged LDO probes after four weeks treatment in NaOH

Conclusion

The regular, short-term measurement in concentrated sodium hydroxide samples may cause slight damage of the probe body surface, but does not negatively influence the measurement function and accuracy of the LDO probe.

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