

Chemical

Perspectives in Liquid Process Analytics



12 News

INGOLD

Leading Process Analytics

Oxygen Measurement in Waste Gas for Effective Explosion Protection

Real-time monitoring of the oxygen concentration in waste gas plays a key role in explosion prevention. Using amperometric oxygen electrodes there is above all no need for complex and costly sample handling systems!

About the company

The Langelsheim plant in Germany is the largest and most diversified facility of the Chemetall Group. The product spectrum ranges from specialty chemicals for surface treatment of metals to ultra pure metals and metal compounds of cesium, barium, titanium and zirconium. Production at the Langelsheim site includes 20 facilities of different types and sizes from which the majority is under the German Federal Emission Control Act.

Identification of potential explosion hazards.

Complying with the "Technical Guidance for Air Quality Control" a new waste gas incinerator was built. As safety has top priority at all Chemetall sites, the unit was equipped with two METTLER TOLEDO

oxygen analyzers which main purpose is to identify possible explosion hazards. When burning process off-gases, oxygen content in the feedstock must at all times be lower than 1 % by volume in order to rule out any risk of explosion or fire. Being intrinsically safe the oxygen electrodes were directly installed in two collector lines. With a lower range limit of 0,1 vol.-%, any ingress of air is detected in the earliest stage. If the oxygen level exceeds the threshold value, nitrogen is automatically fed to the system thereby diluting the flow and keeping safety uncompromised. Since oxygen could only enter the system due to leakage at certain valves, the cause of the problem can be located easily and countermeasures can be taken rapidly.



METTLER TOLEDO

Ease of Maintenance

In contrast to common alternative analytical methods for this application, the METTLER TOLEDO solution with InPro 6800 Gas electrodes does not require any sample conditioning, despite a process temperature of up to 60 °C (140 °F) and pressures down to -100 mbarg! This has resulted in significantly lower installation costs and maintenance requirements. Calibration of the electrodes is carried out using normal air and is completed in a matter of minutes. The rugged design guarantees longevity, also under tough conditions.



With all components being certified for use in hazardous area, the system is very compact and allows for field mounting. The transmitter is even equipped with a flash memory card for audit trail purposes recording events with time and date and registering calibration data.

Outlook

At the end of 2008 our new transmitter M420 will be released. This next generation transmitter will be fully compatible with our ISM® range of sensors. ISM® (Intelligent Sensor Management) offers full diagnostics, plug and measure functionality and truly enables preventive maintenance. For further details please contact your METTLER TOLEDO representative.



Oxygen sensor InPro 6800 Gas.

Basic features of InPro 6800 Gas

- Service in seconds with “Quick Disconnect” system
- Long life membrane
- Certified for use in hazardous area
- Measurement is not affected by moisture and most organic solvents



Transmitter O₂ 4220X.



Transmitter M420.

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