

# iSensPro's Non-Intrusive Sensors: Your First Line of Defense Against CUI

Corrosion Under Insulation (CUI) is currently the subject of increased focus for the upstream and downstream oil and gas and petrochemical industries. This persistent issue poses significant risks to the structural integrity of pipelines and static equipment, making effective monitoring and mitigation critical. Over 10% of maintenance cost is due to CUI, over 20% of oil and gas accidents is due to CUI and also 60% of pipe failures is due to CUI.

iSensPro offers peace of mind and cost reduction to its industrial colleagues by preventing and predicting CUI on existing and new installations. We provide a unique, non-intrusive, patented sensor-technology for 24/7 data monitoring.

## Continuous Monitoring: A Game Changer

Monitoring plays a critical role in the oil and gas industry, encompassing everything from pipeline integrity and static equipment performance to environmental compliance. For instance, a 2022 study reported that real-time monitoring reduced pipeline leaks by 35% in high-risk areas, showcasing its pivotal role in preventing costly and hazardous incidents

Effective maintenance practices and inspections are necessary to minimize the risk of CUI developing over time. Today, inspections are mainly risk-based and involve manual interventions at high costs, with still high uncertainties resulting in unnecessary maintenance actions or incidents.

Continuous monitoring of moisture, coating degradation, and corrosion provides accurate data, allowing asset owners to take action at the right time, improving asset integrity and reducing maintenance costs.

Discover iSensPro's solution, a comprehensive monitoring solution designed to monitor and inspect insulated assets.

While some solutions focus narrowly on specific challenges like CUI prediction, iSensPro



stands out by precisely detecting the moisture (content) and the actual corrosion (incl. corrosion rate) under insulation in real time.

## Key Features of iSensPro

### 1. Continuous Monitoring

At the heart of iSensPro is our battery-fed network, capable of gathering data continuously across a broad spectrum of operational parameters. Whether it's detection of liquid or gas, moisture or CUI, iSensPro provides an unparalleled depth of insight which helps to improve plant

productivity, lower costs of inspection, labor and scaffolding, reduce unplanned downtime.

### 2. Precise Detection

Unlike systems that rely on predicting potential corrosion issues, iSensPro focuses on real-time detection of moisture and corrosion under insulation (CUI). As highlighted in a recommendation letter from BASF Antwerp, iSensPro can determine water ingress, coating degradation, and corrosion without the need to remove insulation. Based on the corrosion speed, iSensPro provides an indicative classification in four categories:

- No corrosion
- Early stage
- Intermediate
- Advanced

This classification helps operators to understand the current state of corrosion activity. However, the same corrosion speed could occur in a localized small spot (potentially high impact on local wall thickness) or across a larger segment (causing slower progress on wall thickness). For a more comprehensive view, the iSensPro permanent monitoring device (ATEX & Non-ATEX) offers insights into the corrosion history over time, combining speed and duration to better indicate the severity of the corrosion process.



### 3. Seamless Integration

Modern oil and gas operations often span remote and challenging locations. iSensPro's system ensures seamless remote access to data and insights and easily integrates with the asset owner's local management systems, making it simple to implement and use.

### 4. Non-Intrusive Sensors

The iSensPro moisture & CUI sensors are designed to be placed on top of the cladding, ensuring easy installation without disrupting operations. To deploy our sensors no insulation must be removed making our technology suitable for new as well as existing installation.

### 5. Comprehensive Monitoring & Inspection

iSensPro provides a complete solution for monitoring and inspecting insulated assets. Our non-intrusive sensors detect corrosion and moisture instantly, ensuring immediate action when needed. Additionally, BASF Antwerp has highlighted one of iSensPro's strength, being the availability of both handheld and permanently installed sensors, offering flexibility for either permanent monitoring or ad-hoc inspections of suspected locations.

### The Benefits of iSensPro's Monitoring Solution

#### 1. Improved Operational Efficiency

By providing real-time insights and actionable data, iSensPro streamlines decision-making processes, reduces operational bottlenecks, and enhances overall efficiency. Operators can allocate resources more effectively, leading to significant cost savings and optimized workflows.

#### 2. Enhanced Safety

Safety is a non-negotiable priority in the oil and gas industry. iSensPro's ability to detect anomalies and corrosion issues in real time minimizes the risk of accidents. Our system also supports compliance with stringent safety regulations, safeguarding both personnel and assets.

#### 3. Improved Asset Reliability

With precise real-time data on asset health, iSensPro helps extend the lifespan of static equipment. Early issue detection ensures smoother operations and prevents unexpected breakdowns.

#### 4. Cost Savings

From reduced downtime and maintenance costs to optimized resource allocation, iSensPro delivers tangible financial benefits. Its advanced capabilities allow operators to achieve more with less, maximizing return on investment. BASF Antwerp's recommendation letter also highlights how iSensPro's detailed analysis contributes to more efficient

maintenance resource allocation.

### Real-World Applications

iSensPro has already made some relevant inroads in the oil and gas and petrochemical sector, with successful results.

Asset owners like BASF Antwerp, ExxonMobil Singapore, SABIC Bergen op Zoom, just to name a few, have all tested iSensPro's technology, endorsing its value for determining the condition of insulation and detecting corrosion without removing it. Their continued exploration of iSensPro's capabilities highlights its effectiveness and adaptability in addressing critical industry challenges.

### Conclusion

As the oil and gas industry navigates a period of change, solutions like that of iSensPro are proving indispensable. By instantly detecting moisture and Corrosion Under Insulation (CUI) with our non-intrusive sensor technology, iSensPro is setting a new standard for monitoring and operational excellence.

For operators seeking to enhance efficiency, ensure safety, and embrace sustainability, iSensPro represents not just a solution, but a competitive advantage. Looking ahead, innovations like that of iSensPro pave the way for a fully connected and smart oil and gas ecosystem, changing the operations of the industry in the years ahead.

According to industry leaders, the future of oil and gas lies in smart, integrated technologies that enhance both performance and responsibility. With iSensPro, that future is already here.

Contact Details:

**iSensPro**

W: [www.isenspro.com](http://www.isenspro.com)

E: [contact@isenspro.com](mailto:contact@isenspro.com)

