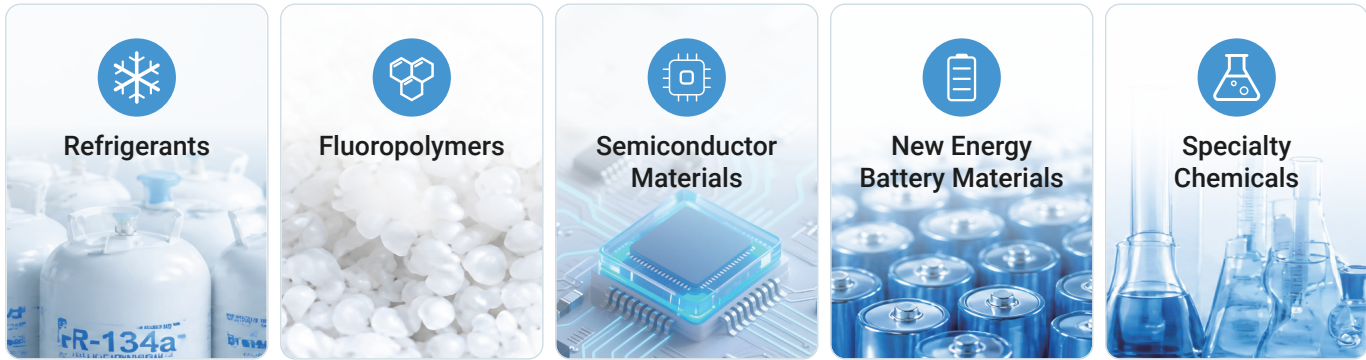


Industry Solutions

As a vital pillar of strategic emerging industries, fluorochemicals are widely used in refrigerants, fluoropolymers, semiconductors, new energy battery materials, and specialty chemicals. To tackle harsh conditions like severe corrosion, high temperature/pressure, and toxicity, Micro Sensor provides a full portfolio of smart measurement instruments—including pressure, differential pressure, temperature, flow, and level—ensuring precise monitoring throughout reaction, refining, transfer, and storage.

Supporting explosion-proof standards and HART/Modbus protocols, our instruments feature customizable Hastelloy, PTFE/PFA anti-corrosion designs and high-reliability sensors, empowering customers to ensure long-term stability, plant safety, and efficient operation under severe environments.

Typical Applications



Typical Production Challenges

Severe Corrosive Media

Extreme corrosive fluids (HF, fluorine salts, hydrofluoric acid solutions)

- Hastelloy, Tantalum, and PTFE materials
- Advanced isolation & seal design
- Long-term, corrosion-resistant, and stable performance

High-Hazard Conditions

Highly permeable small-molecule fluorine media; toxic fluids; high-pressure reactions

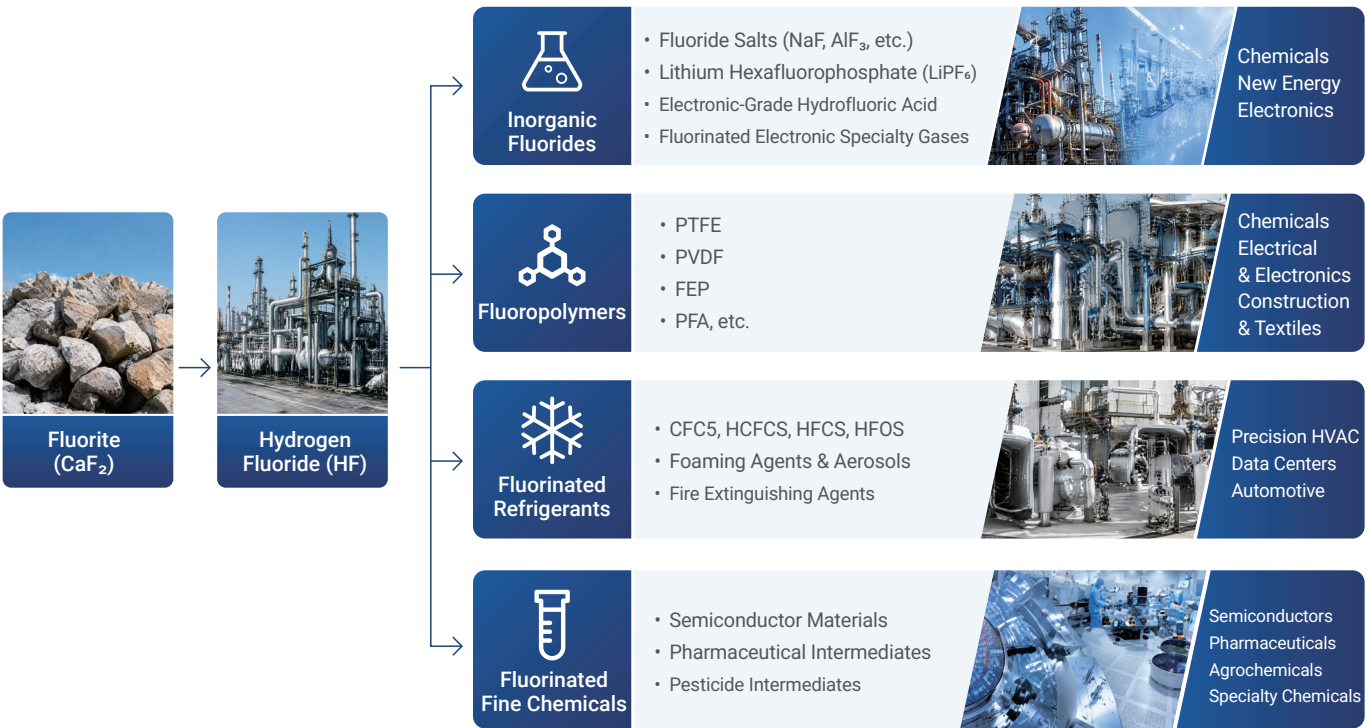
- Explosion-proof & Intrinsically safe certifications
- high-precision measurement
- Full-process safety monitoring & risk control

Continuous Operation Demands

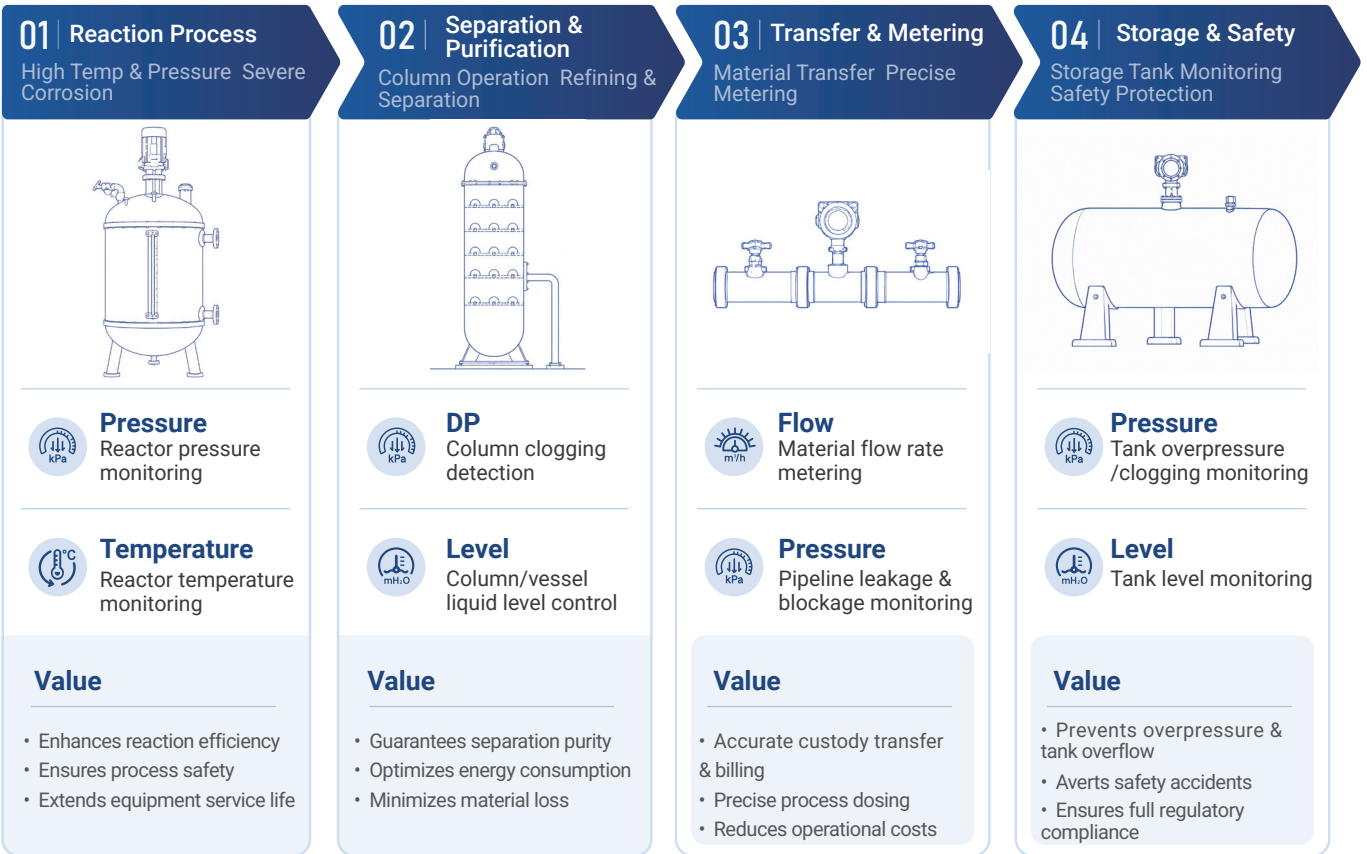
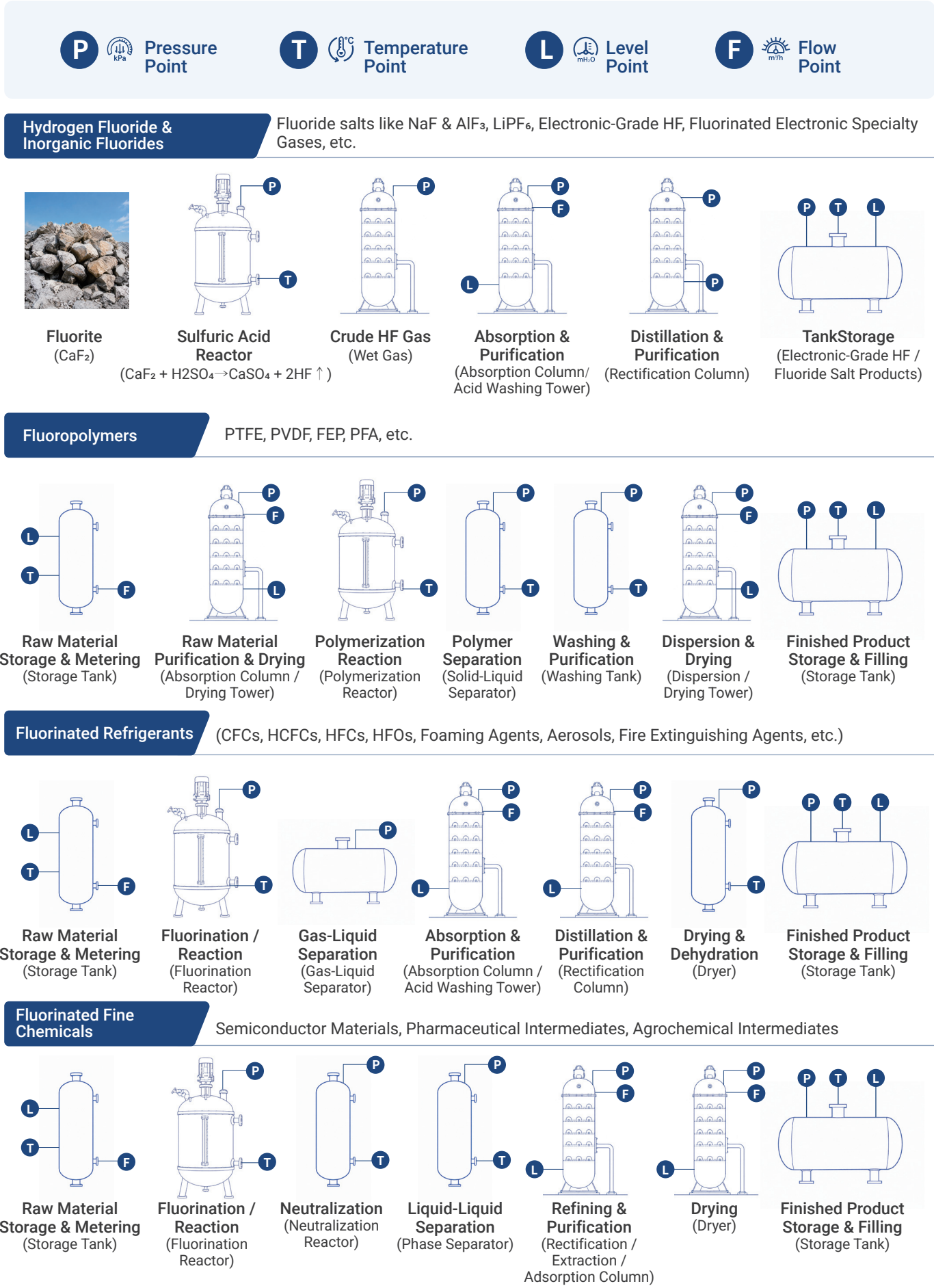
Long-cycle continuous operation with high downtime costs

- High reliability & long-term stability
- Low maintenance & easy installation
- Safe and cost-efficient plant operation

Panorama of the Fluorochemical Industry Chain



Key Process Steps & Monitoring Points in Fluorochemicals



Application Challenges

Severe Corrosion

Anhydrous HF, hydrofluoric acid, and fluorine gas demand extreme material compatibility.

High Permeation Risk

Small fluorine molecules easily penetrate seals and diaphragms, degrading fill fluids.

High Safety Requirements

Toxic, corrosive, and explosive media make even micro-leaks unacceptable.

Extreme Operating Conditions

Wide temperature and pressure swings require long-term operational stability.

Solutions

Isolated Measurement

- Remote & diaphragm seals isolate sensors from corrosive media to eliminate corrosion and permeation risks.

Tailored Wetted Materials

- Monel 400: Ideal for aqueous and anhydrous HF.
- Hastelloy C-276: Resistant to most organic fluorides.
- PFA Coating / PFA Cap: Isolates media from metal diaphragms (Note: PFA caps not for vacuum / negative pressure).
- Halar Coating (ECTFE): High hardness for mixed acids; withstands negative pressure down to -40 kPa.

Specialized Fill Fluids

- High-compatibility fill fluids resist permeation for long-term stability.

High-Reliability Seals

- Chemical-resistant seals prevent swelling and aging for long-term integrity.

Monel 400, Hastelloy C-276, PFA Coating / PFA Cap, Halar Coating (ECTFE)

Standard Silicone Oil, Specialized Fluorinated Oil (PFPE)

Standard NBR, FFKM O-Rings, PTFE Gaskets

Selection Guide for Typical Operating Conditions

Micro Sensor provides a comprehensive portfolio of smart measurement and control instruments—including pressure, flow, temperature, and level—engineered for high corrosion, extreme temperature/pressure, and hazardous environments, ensuring safe, continuous, and efficient plant operations.

Application	Parameter	Model / Product	Range	Features
Reactors / High-Pressure Vessels	Pressure	MDM7000 Pressure Transmitter	0~100bar	• High accuracy (±0.075%) • Anti-corrosion, all-welded construction • Ideal for harsh corrosive media
Reactors / Pipelines	Temperature	MTM4831S Temperature Transmitter	-200~+500°C	• High accuracy (±0.5%) • Flexible probe options • Explosion-proof & anti-corrosion
Process Pipelines	Flow	MFE600-F Electromagnetic Flowmeter	0~10000m³/h	• PTFE/PFA linings • Zero pressure loss & anti-corrosion • High-accuracy bidirectional measurement
Storage Tanks / Liquid Level	Level	MDM7000 Differential Pressure Transmitter	0~10bar	• DP level measurement • Overpressure-resistant & anti-corrosion • High long-term stability & reliability
Filters / Heat Exchangers	Differential Pressure	MDM7000 Differential Pressure Transmitter	0~0.5bar	• Micro-DP measurement • High static pressure resistance • Fast response & high accuracy
Heat Tracing Lines	Temperature	MTM4831S Temperature Transmitter	-200~+500°C	• Anti-corrosion protective design • Long probe options • Built for harsh environments
Gas Pipelines	Flow	MFC608 Mass Flowmeter	0~10000m³/h	• Corrosive gas measurement • Fast response time • Versatile multi-gas compatibility

Advantages



Superior Corrosion Resistance

Hastelloy, Tantalum, PTFE/PFA, and other anti-corrosion wetted materials available



High Reliability

Precision sensing technology paired with rigorous testing ensures long-term operational stability



Complete Explosion-Proof Certifications

Fully certified for global hazardous location requirements

Tailored Customization

☒ Specialized materials

☒ Engineered constructions for harsh conditions

☒ Flexible ranges & accuracy

☒ Explosion-proof & protection ratings

Empowering diverse fluorochemical applications

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MICROSENSOR

INSTRUMENTATION SOLUTIONS FOR THE FLUOROCHEMICAL INDUSTRY

Company Profile

Since its inception in 1993, Micro Sensor Co., Ltd. (Micro Sensor) has been a global manufacturer and service provider of industrial measurement and control instruments. The company specializes in customized solutions for pressure, level, temperature, and flow measurement, serving a wide range of industries including oil & gas, renewable energy, industrial gases, water & wastewater, marine & shipbuilding, HVAC, hydraulics & pneumatics, mechanical manufacturing & automation, food & beverage, and pulp & paper. Micro Sensor has a global team of over 800 employees and operates four industrial parks in Baoji, Xi'an, and Shanghai, China. It also has a European subsidiary, Micro Sensor GmbH, in Essen, Germany.



Smart Manufacturing

Automated assembly, inspection, and packaging with full-process monitoring of key operations; Unified MES/ERP systems for end-to-end connectivity of production planning, materials, and quality; Enhanced process performance and predictive maintenance powered by Big Data and AI.



CNAS-Certified Laboratories

Accredited laboratories in Shanghai, Xi'an, and Baoji, covering over 500m²; Capability for high-level pressure/temperature calibration, EMC, environmental, and reliability testing; Self-developed systems for automated acquisition and analysis of 15 types of digital/analog signals.



Quality Management System

Certified for ISO 9001, Environmental, Occupational Health & Safety, and Measurement Management Systems; Specialized ATEX and IECEx Quality Management System certifications.

Manufacturing Base



Xian High-Tech Industrial Park

Site Area: 20 Mu (approx. 13,333 m²)
Floor Area: 8,543 m²



Baoji Jiangtan Industrial Park

Site Area: 54 Mu (approx. 36,000 m²)
Floor Area: 27,629 m²



Shanghai Minhang Industrial Park

Site Area: 5.08 Mu (approx. 3,387 m²)
Floor Area: 17,101 m²

Product Certifications



CE



RoHS



UL



ATEX



IECEx



CSA

Empowering Sustainable Development with Measurement and Control Solutions

Version 1.0