

# Conflict Minerals Statement

A practical guide to conflict minerals statement, covering the reader intent, the relationship to conflict minerals statement, key evaluation criteria, common risks, and the information the intended project audience should confirm before taking the next step.



Main topic: Main Page  
<https://www.level-meters.com/>

In the modern industrial landscape, the transparency of the supply chain is as critical as the precision of the instruments themselves. For professional manufacturers like Welk, providing a comprehensive conflict minerals statement is not merely a regulatory formality but a cornerstone of corporate social responsibility and ethical engineering. As industrial automation expands into increasingly complex global markets, understanding the origin of materials used in high-tech level measurement instruments—such as radar level meters and ultrasonic sensors—has become a priority for procurement officers and project engineers alike.

Conflict minerals refer to specific raw materials—tantalum, tin, tungsten, and gold, collectively known as 3TG—that are mined in conditions of armed conflict and human rights abuses, particularly in the Democratic Republic of the Congo (DRC) and its adjoining countries. This article provides a detailed exploration of why these minerals are used in level measurement technology, the regulatory frameworks governing their disclosure, and how a conflict minerals statement serves as a vital document in B2B procurement.

## **| The Significance of Conflict Minerals in Industrial Instrumentation**

The production of sophisticated industrial level measurement instruments relies heavily on advanced electronics. Whether it is a high-frequency radar level meter or a versatile ultrasonic level sensor, the internal components require specific minerals to function reliably under harsh industrial conditions.

## **| Why 3TG Minerals are Essential**

Each of the four "conflict minerals" provides unique physical properties that are difficult to substitute in high-precision electronics:

**Tantalum:** Primarily used in the production of tantalum capacitors. These components are valued for their high capacitance in a small volume and their stability across wide temperature ranges, making them ideal for the control boards of radar level meters used in chemical processing.

**Tin:** The primary component of solder used to join electronic components to printed circuit boards (PCBs). Every level transmitter, from hydrostatic pressure sensors to magnetic level gauge switches, utilizes tin-based solder.

**Tungsten:** Known for its extreme hardness and high melting point, tungsten is often used in specialized alloys for electrodes or high-temperature housing components in industrial automation.

**Gold:** Used in plating connectors, switch contacts, and bond wires within integrated circuits. Gold's resistance to corrosion ensures long-term signal integrity in the corrosive environments typical of water treatment and oil and gas applications.

## **| Technical Application and Measurement Principles**

Before evaluating the compliance of a device, it is essential to understand the measurement principles that necessitate the use of these advanced materials. At Welk, we integrate these materials into several core technologies.

## **| Radar Level Measurement**

Radar level meters typically operate on the Frequency Modulated Continuous Wave (FMCW) or Pulse Radar principle. In an FMCW system, the sensor emits a continuous signal with a varying frequency. The signal reflects off the medium surface and is received by the antenna. The difference in frequency between the emitted and received signal is proportional to the distance. The high-frequency processing required for 80GHz radar systems necessitates advanced microprocessors and capacitors, where tantalum and gold are frequently employed to ensure high-speed data processing and signal stability.

## **| Ultrasonic Level Sensing**

Ultrasonic sensors utilize the Time-of-Flight (ToF) principle. A transducer emits an ultrasonic pulse that travels through the air, hits the liquid or solid surface, and returns to the sensor. The distance is calculated based on the speed of sound. The piezoelectric crystals and the driver circuitry within these sensors rely on tin-based soldering and gold-plated connectors to maintain accuracy in various industrial automation settings.

## **| Hydrostatic and Magnetic Gauges**

Hydrostatic level transmitters measure level by sensing the pressure exerted by a liquid column. Magnetic level gauges use a float equipped with an internal magnet system to actuate external flags or switches. While these are more mechanical in nature, the electronic transmitters and limit switches attached to them still incorporate 3TG minerals in their circuitry to provide remote monitoring capabilities.

## **| Regulatory Landscape: Dodd-Frank and International Standards**

The requirement for a conflict minerals statement is driven by several international regulations designed to decouple the trade of minerals from the funding of armed groups.

## **| Section 1502 of the Dodd-Frank Act**

In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) requires publicly traded companies to report whether the 3TG minerals used in their products originated in the DRC or surrounding countries. While this directly affects public companies, it creates a trickle-down effect where manufacturers like Welk must provide documentation to their customers who are subject to these rules.

## **| EU Conflict Minerals Regulation**

Effective January 2021, the EU Conflict Minerals Regulation requires EU-based importers of tin, tantalum, tungsten, and gold to carry out due diligence on their supply chains. This ensures that the minerals entering the European market are sourced responsibly. For global B2B partners, having a clear conflict minerals statement is essential for maintaining compliance with these stringent European standards.

## **| OECD Due Diligence Guidance**

The Organisation for Economic Co-operation and Development (OECD) provides a five-step framework for due diligence that has become the global gold standard for responsible mineral sourcing. This includes establishing strong company management systems, identifying risks in the supply chain, and reporting annually on supply chain due diligence.

## **| Due Diligence Processes for Level Meter Manufacturers**

As a professional manufacturer, Welk implements a rigorous due diligence process to ensure that our products—ranging from radar level meters to level switches—are "DRC Conflict-Free." This process involves several critical steps:

1. **Supplier Engagement:** We require all component suppliers to provide evidence of their mineral sourcing. This is typically done through the Conflict Minerals Reporting Template (CMRT).
2. **CMRT Analysis:** The CMRT is a standardized reporting form developed by the Responsible Minerals Initiative (RMI). It allows us to trace the minerals back to the specific smelters and refiners used in our supply chain.
3. **Smelter Verification:** We cross-reference the smelters identified in our supply chain with the RMI's list of Conformant Smelters and Refiners. Smelters that have undergone a third-party audit and are found to be compliant are preferred.

4. Risk Mitigation: If a supplier is found to be sourcing from a non-conformant smelter, we work with them to transition to a conflict-free source. This ensures the long-term integrity of our Main Page product offerings.

## Evaluating a Conflict Minerals Statement: A Guide for Procurement

When reviewing a conflict minerals statement from a supplier of industrial level measurement instruments, procurement teams should look for specific indicators of validity and transparency. A simple "yes/no" declaration is often insufficient for modern ESG (Environmental, Social, and Governance) requirements.

### Key Evaluation Criteria

| Criterion              | Description                                                         | Importance                                        |
|------------------------|---------------------------------------------------------------------|---------------------------------------------------|
| Scope of Declaration   | Does the statement cover all products or specific product lines?    | High - Ensures all purchased parts are compliant. |
| Standardized Reporting | Does the manufacturer use the latest CMRT version?                  | Medium - Facilitates easier data integration.     |
| Smelter List           | Does the supplier provide a list of smelters in their supply chain? | High - Allows for independent verification.       |
| Due Diligence Policy   | Is there a formal policy linked in the statement?                   | Medium - Shows long-term corporate commitment.    |
| Update Frequency       | Is the statement updated at least annually?                         | High - Mineral sourcing can change frequently.    |

### Practical Selection and Installation Considerations

When selecting level measurement solutions, compliance with conflict mineral regulations should be integrated into the broader technical selection process. Ethical sourcing does not compromise performance; rather, it ensures the sustainability of the supply chain.

## **| Selection Checklist**

1. **Application Environment:** Determine if the environment is corrosive, high-pressure, or explosive. This dictates the materials needed (e.g., stainless steel vs. plastic housings).
2. **Measurement Range:** Choose between radar (up to 30m or more) and ultrasonic (typically up to 15m) based on the vessel height.
3. **Compliance Documentation:** Request the conflict minerals statement alongside technical datasheets and ATEX/IECEx certifications.
4. **Installation Geometry:** Ensure the sensor is installed away from the tank wall (typically >200mm) and clear of internal obstructions like agitators to prevent signal interference.

## **| Installation Limitations**

While radar and ultrasonic sensors are highly versatile, they have limitations. Radar is generally unaffected by vacuum or high pressure, whereas ultrasonic sensors require a medium (usually air) to transmit sound waves and are sensitive to temperature gradients and heavy foam. Regardless of the technology chosen, ensuring that the internal electronics are ethically sourced through a verified conflict minerals statement adds a layer of security to the project's overall risk management profile.

## **| Frequently Asked Questions regarding Conflict Minerals**

**Q:** Does a conflict minerals statement mean the product contains no 3TG minerals?

No. It means that if the product contains these minerals, they have been sourced from mines and smelters that do not fund conflict in the DRC or surrounding regions. Most electronic level meters contain at least some amount of tin and gold.

**Q:** Why should a water treatment plant care about conflict minerals?

Many water treatment projects are funded by government grants or international bodies that have strict ESG requirements. Using compliant components is often a prerequisite for project approval and avoids legal risks.

Q: How often should I request an updated statement from my supplier?

It is best practice to request an updated statement annually or whenever a major new product line is introduced. Supply chains are dynamic, and smelter statuses can change.

Q: Are hydrostatic level transmitters exempt from these statements?

No. While they are pressure-based, the electronic head that converts pressure to a 4-20mA or RS485 signal contains a PCB with solder (tin) and capacitors (tantalum), necessitating a conflict minerals statement.

## **| Conclusion**

In the industrial B2B sector, the move toward transparency is irreversible. A conflict minerals statement is more than just a piece of paper; it is a reflection of a manufacturer's commitment to a clean, ethical, and reliable supply chain. For engineers and procurement professionals in the chemical, oil and gas, and water treatment industries, partnering with a manufacturer like Welk ensures that high-performance level measurement solutions are backed by responsible sourcing practices. By understanding the measurement principles, regulatory requirements, and due diligence processes involved, businesses can make informed decisions that protect both their operations and their global reputation.

For more information on our technical solutions and compliance standards, please visit our [Main Page](#).