

## Case Study

## Safe wastewater treatment in the semiconductor industry

An electronic component manufacturer faced the challenge of treating process wastewater generated during semiconductor production safely and in compliance with legal requirements. Etching processes and rinsing baths produce aqueous media with varying degrees of contamination – some with high salt content and finely distributed metal residues. MKR developed a flexible and reliable solution for internal treatment – resource-saving, efficient and tailored to the production process.

### Initial Situation

Semiconductor production – especially the manufacture of printed circuit boards – generated several cubic metres of contaminated process water every day. The previous external disposal method was costly and lacked transparency. The aim was to treat 11,200 m<sup>3</sup>/a of wastewater in-house and discharge the distillate into the sewer system in compliance with all limit values.

### Requirements

- Treatment of rinse water containing heavy metals and acidic solutions from etching processes
- Safe removal of fine particles, oils and surfactants
- Compliance with all legally prescribed discharge values
- Flexible system for fluctuating water composition
- Automated, space-saving and low-maintenance
- Can be integrated into existing production

### MKR Solution

Following a comprehensive analysis of the process water, MKR developed a coordinated plant concept. The solution comprises:

- pH adjustment for neutralising highly acidic or alkaline wastewater
- Chemical/physical treatment by means of flocculation and precipitation
- Belt filter station for removing fine particles
- Bag filter with pump
- ET 1500 evaporator system

The modular design allows adaptation to fluctuating throughput volumes and changing

### Project at a Glance

**Project:**

Komplette Systemlösung zur sicheren Aufbereitung von Elektronik-Abwässern – wirtschaftlich, genehmigungsfähig und zukunftssicher.

**System Technology:**

- pH adjustment
- Chemical/physical treatment
- Belt filter station
- Bag filter with pump
- ET 1500 evaporator
- Containers (feed, distillate, concentrate)

**Customer:**

Manufacturer of electronic components

**Contractor:**

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## Results

- Safe treatment of all process wastewater directly at the point of origin
- Compact, low-maintenance technology with a long service life
- Compliance with all discharge limits
- Flexible expansion for future capacity increases
- Conservation of resources through internal water circulation

