

Case Study

Treatment of saline wastewater in the hardening shop – MKR technology for demanding media

An internationally active heat treatment company was looking for a solution for treating saline wastewater produced during quenching processes using salt or brine baths. The challenge: high salt concentrations, aggressive medium and strict discharge limits. MKR delivered a reliable, corrosion-resistant and energy-efficient solution that allows the saline wastewater to be treated safely on site.

Initial Solution

The hardening plant regularly produced highly saline wastewater as a result of quenching processes using salt solutions, which had previously been disposed of externally. The associated costs were high, and uncertainty regarding future disposal guidelines was growing. The operator was looking for an independent, compliant and long-term stable solution for the internal treatment of these demanding media.

Project at a Glance

Project:

Internal solution for treating saline hardening wastewater – efficient, durable and dischargeable.

System Technology:

- Buffer tank
- Bag filter
- ET 200 evaporator
- Tramp oil separator
- IBC filling station (concentrate)

Customer:

International heat treatment company

Contractor:

MKR Metzger GmbH
Rappenfeldstraße 4
86653 Monheim

Requirements

- Treatment of highly saline quenching baths and rinse water
- Resistant technology for corrosive media (chlorides, nitrates, etc.)
- Safe discharge of purified water into the sewer system
- Avoidance of high disposal costs
- Reliable continuous operation with high dirt loads
- Minimisation of downtime and maintenance costs

MKR Solution

MKR developed a robust system solution specifically for saline media. The wastewater is first collected in a media-compatible buffer tank. Pre-filtration using a chemical-resistant bag filter removes coarse contaminants. The water is then transferred to the ET 200 evaporator – a specially designed system made of high-alloy materials for the safe evaporation of aggressive salt solutions.

The purified distillate is discharged via an tramp oil separator and meets local discharge requirements. The remaining concentrate is collected as solids or highly concentrated brine and disposed of properly at significantly lower intervals.

Results

- Safe, internal treatment of saline hardening plant wastewater
- No need for costly external disposal
- Durable technology thanks to corrosion-resistant materials
- Compliance with all statutory discharge limits
- Automated operation with low maintenance requirements
- Future-proof solution for demanding everyday hardening plant operations

