

Case Study

Stabilization of 500 tons of elemental mercury on-site by Mobile Mercury Conversion Unit



econ industries

Schiffbauerweg 1 • 82319 Starnberg • Germany

Tel.: +49 8151 446377 - 0
Fax: +49 8151 446377 - 99
E-Mail: info@econindustries.com
Web: www.econindustries.com

Zero industrial waste ... !

Stabilization of 500 tons of elemental mercury

econ industries Mobile Mercury Conversion Unit

With more than 20 years of experience on mercury waste stabilization, econ industries was confident in presenting the optimal solution for addressing mercury treatment in Poland and the UK. The creation of the MMCU 1 500 involved a custom design, ensuring maximum mobility and ease in the transport and commissioning of the on-site mercury treatment plant to two remote chlor-alkali facilities.

One of the major challenges our client was facing was finding a mobile solution that could be conveniently transported to two chlor-alkali facilities in different locations for a complete on-site mercury stabilization project. One project involved the treatment of 400 tons of Hg in the UK, and the other project required 130 tons of Hg to be converted to HgS in Poland. Transporting the elemental mercury to a waste facility or across countries was not an option due to the high costs and risks associated with the transport.

Fortunately, our team of engineers successfully designed and manufactured a mobile plant for on-site mercury stabilization, involving the conversion of elemental mercury (Hg⁰) to mercury sulphide (HgS) or cinnabar. By mixing sulfur with mercury stoichiometrically inside a hermetic mixer, the chemical reaction is successfully achieved. The MMCU entire process works with a inert atmosphere and a liquid phase chemical reaction, assuring a safe operation. After stabilizing 500 tons of mercury from the chlor-alkali facilities, the HgS was finally safely disposed in salt mines located in Germany.

Performance data

■ Mobile Mercury Conversion Unit Type:	MMCU 1 500
■ Throughput:	1,500 kg of Mercury / batch
■ Plant capacity:	3 - 4 batches per day
■ Heating system:	Thermal oil unit - heated by electric power
■ Operating pressure:	Atmospheric pressure



MMCU 1 500 on-site



Input and output materials



Final disposal of stable HgS in underground facility

Greatest benefits

- The MMCU delivered a stable and non-leaching output material which was finally disposed off in salt mines
- Skid-mounted unit, enabled an easy transport and fast and flexible installation on site.
- Plug-and-play equipment in modular design, pre-tested in our German workshop
- Highest safety based on EU standards