Localisation of Mercury waste treatment
It’s not rocket science!

Reinhard Schmidt, CEO/Owner

We consider ourselves as technology innovators, suppliers & coaches.

- machinery supply incl. supervision up to 1 year
- since 16 years in ‘Made in Germany’
- 10 Mio € annual turnaround
- present clients in EUR, RUS, AUS, AZE, IND, CHN
- 50 % business with mercury waste units

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Localisation of Mercury waste treatment

Why?

Basel Convention:
Controlling transboundary movements of hazardous waste and their disposal

econ´s Convention – we call it `Basel 2.0´:
Avoidance of transboundary movements of hazardous waste and their disposal

It´s all about
taking over responsibility
and saving money!
Decentral treatment of Mercury wastes

Local benefits

Increase of:
- Know-how
- Added value
- Qualified jobs
- Independence
- Transparency

Decrease of:
- Expenses
- Dependence
- Transport hazards
- Transport emissions
- Export bureaucracy
3 types of Mercury waste

3 technology options available

Soils & sludge contaminated with elemental mercury

• **Vacuum distillation** - VacuDry®
  
eventually after soil washing → only the fine faction goes into thermal treatment

• max. 400 °C; low vacuum < 50 mbar abs

Spent activated carbon & catalyst contaminated with mercury compounds

• **High temperature treatment** - HTTU

• max. 1,000 °C; atmospheric pressure

Pure elemental mercury

• **Conversion to HgS**

• max. 200 °C; atmospheric pressure
Soils & sludge contaminated with elemental Mercury

Vacuum distillation - VacuDry®

- Control unit
- Feeding unit
- Vacuum dryer
- Discharge unit (& optional immobilization)
- Thermal oil heating unit (electrical or fuel fired)
- Utilities supply unit
- Exhaust treatment unit
- Condensation unit
- Cooling unit

Sludge and soils contaminated with mercury

Clean solids

Water/Oil/Mercury as separate liquids

Clean process gas

VOC/Mercury
Soils & sludge contaminated with elemental Mercury

Vacuum distillation - VacuDry
Soils & sludge contaminated with elemental Mercury

Vacuum distillation – VacuDry

Units available up to 500 tons per day throughput

Exemplary projects:
• Germany (in operation since 1998 !) – hydrocarbon and mercury containing wastes from LNG production (with and without NORM)
• Australia – LNG wastes and tank cleaning sludge containing oil and mercury
• France/India – contaminated soils from former chemical plant/thermometer factory (combined with soil washing)
• Eastern Europe – contaminated soils from earlier mining facility
Spent activated carbon & catalyst contaminated with Mercury compounds

High temperature treatment - HTTU
Spent activated carbon & catalyst contaminated with Mercury compounds

High temperature treatment unit - HTTU
Spent activated carbon contaminated with elemental Mercury

High temperature treatment unit – HTTU

Modular equipment available starting from 100 kg per day throughput

Exemplary projects

• Australia – spent catalyst from LNG facilities containing hydrocarbons and mercury

• Europe – spent catalyst from LNG facilities containing hydrocarbons and mercury
Pure elemental mercury conversion to HgS

Mobile Mercury Conversion Units – MMCU
Pure elemental Mercury
conversion to HgS

Mobile Mercury Conversion Units

Elemental Mercury

Elemental Sulphur

Mercury sulphide (HgS)
Pure elemental Mercury
conversion to HgS

**Mobile Mercury Conversion Units – MMCU**

Units available starting from 100 kg
up to 5 tons per day throughput

Exemplary projects

- Poland – chlor-alkali plant: 130 tons Hg conversion, HgS to salt mine (K+S)
- England – chlor-alkali plant: 400 tons Hg conversion, HgS to salt mine (K+S)
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