

Fact Sheet

VacuDry® - the worldwide leading solution to recover resources from hazardous waste



econ industries

Schiffbauweg 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 ... !

VacuDry® - Vacuum distillation

Contaminated soil, hazardous waste and secondary raw material

With the VacuDry® technology the energy-efficient and sustainable treatment of hazardous and industrial waste as well as contaminated soil, oil sludge and secondary raw material is realized. Controlled vacuum and heat are used to separate minerals from oil, solvents, mercury and other hazardous substances.

At the core of the econ VacuDry® process is a specially designed dryer chamber which uses heat and controlled vacuum to evaporate volatile contaminants. To heat up the dryer a temperature resistant synthetic oil is circulated inside the dryer's heating jacket and its central shaft. The rotating shaft ensures intensive mixing during the process, guarantees a highly-efficient heat transfer to the product and allows short, energy-saving batch times.

After vaporisation the exhaust stream is led through a highly effective vapour filter unit to prevent dust merging with the vapours. Specially designed heat exchangers separate the vaporised contaminants from the main vapour stream by condensation using indirect cooling. For the individual recovery of valuable substances gradual heating assures their defined separation. The remaining vapour passes through a powerful vacuum unit and is cleaned of residual contaminants via an active charcoal filter before finally being led off into the atmosphere.

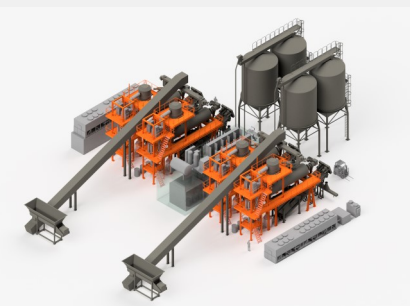
The treated, dried solid residues - usually > 99% pure minerals - can be immobilized after the treatment. An additional mixer is used for later re-moistening or solidification where required. Various feeding systems are available, depending on the consistency and type of the input materials, varying from liquid sludge up to soils/debris of all types of contamination levels.

Key facts

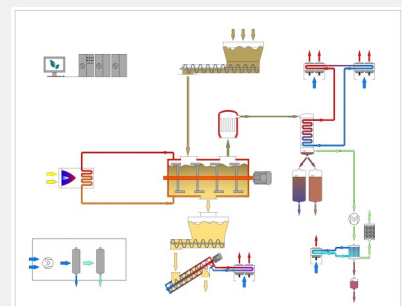
- | | |
|-----------------------------------|--|
| ■ Heating system: | Thermal oil with temperatures up to 400 °C |
| ■ Operated by: | Electricity, biofuels, hydrogen, natural gas, diesel, fuel oils |
| ■ Dryer chamber vacuum: | < 50 mbar absolute pressure |
| ■ Available evaporation ranges: | Boiling points up to 450 °C are achieved under vacuum |
| ■ Plant design: | Fixed or mobile installation, 10 - 250 t/day throughput capacity |
| ■ Additional operating resources: | Electricity, nitrogen, compressed air, cooling/chilled water |



Installation of mobile VacuDry® plant



Hazardous waste treatment center for 100,000 t/yr



Working principle of VacuDry®

Greatest benefits of the econ VacuDry® technology

- ~ 0 t/yr CO₂ - emission by using renewable energies
- Efficient indirect heat transfer for drying process, energy efficiency > 80%
- Emission and dust free system via enclosed treatment of exhaust vapours and solids
- ATEX certified technology, approved by German TÜV
- Design standards according to EN, ASME, GOST-R or individual specifications available
- > 7,500 operating hours per year guaranteed, 24 hours operation
- Optional solidification after thermal treatment for non-volatile contaminants