

Gas Processing and Transmission

Mercury Removal Unit



Definition

Mercury (Hg) exists naturally in oil and gas reservoirs and in gas streams in element or as compound form. The presence of mercury may not be tolerated in certain types of process equipment. Mercury causes severe hazardous corrosion (liquid-metal embrittlement) of aluminium heat exchangers in cryogenic plants, pipes, fittings and control valves containing non-ferrous metals by amalgam formation. Also, mercury is toxic can easily dissolve in aqueous streams or produced water streams and poison catalysts at the downstream equipment.

Product Application:

- Offshore - Process Platforms/Wellheads/ FPSOs
- Onshore - Oil and Gas processing facilities, EPF

Process Description

Mercury removal is a three-stage process. The first stage comprises of natural gas flowing into the inlet gas coalescer for bulk removal of liquid followed by fine removal of liquid in the coalescing section. Liquid droplets of sizes more than $0.3\mu\text{m}$ are removed to ensure dry gas flows into the mercury removal bed. This is vital for the long life of the bed media.

In the second stage, this liquid-free gas flows into the mercury removal unit, where the elemental mercury is absorbed by proprietary media absorbent (mixed metal sulphides). In the third stage the mercury-free gas is taken to an After Filter to remove any solid dust carried over from the mercury removal bed unit.

CECO Peerless package includes an end-to-end solution with following equipment:

- Inlet Gas Coalescers (Vertical Absolute Separator)
- Mercury removal Unit with Absorbent Bed
- Gas Filters

Features:

- Compact and High Efficiency Design for Mercury removal
- Designed to handle wide range of process conditions
- Extended life of bed due to absolute pre-separation
- Reduced CAPEX and OPEX for customers



CECO Peerless Offer:

- Absolute Separator with High Performance Internals for 99.99% removal of liquid droplets of sizes $> 0.3 \mu\text{m}$
- Mercury Removal unit
- Post-Bed Dust Filters with long design life and efficiency to remove 100% of particles up to 3 micron
- Optional offer for complete package including Piping, E&I and Structural skid

Capability:

- Over 20+ years of experience in providing solutions for Oil and Gas separation systems
- Rich industry expertise for fast track delivery of units
- Custom-made design to meet customer specific requirements

Our Services:

- Design and supply of Process Internals
- Process and Mechanical guarantee for Coalescer, Mercury Removal and Filter units
- Complete Engineering, Procurement, Fabrication & Testing of assembly
- Supply of Spare Parts Interchangeability
- Post Sales Service, Site visit, Troubleshooting & Optimization of units
- Specific case studies/Recommendations
- Commitment to meet the customer requirement
- Disposal and Re-processing Services for Spent Caustic

