

Mercury Removal Unit

Product Coding
PXXXXXXXXX

Introduction

Mercury removal unit package is a critical upstream protection system used in natural gas and liquid hydrocarbon processing facilities. It is designed to remove trace amounts of elemental and organic mercury from process streams before they enter sensitive cryogenic equipment such as aluminum heat exchangers, where mercury can cause severe corrosion and catastrophic failure. The mercury removal unit package is typically supplied as a skid mounted or modular system for fast installation and reliable operation.

Process Overview

Feed gas or liquid hydrocarbon enters the mercury removal unit and passes through fixed beds of mercury adsorbing media, usually sulfur impregnated activated carbon or metal sulfide based sorbents. As the stream flows through the adsorption vessels, mercury reacts chemically with the active sites on the media and is irreversibly captured. The treated stream exits the unit with mercury concentration reduced to parts-per-trillion levels, ensuring safe downstream operation. When the adsorbent reaches its capacity, the spent media is safely removed and replaced during scheduled maintenance.

Features

- High efficiency mercury adsorption media achieving low outlet mercury levels.
- Skid mounted, fully packaged design including vessels, piping, instrumentation, and control valves.
- Carbon steel or stainless steel pressure vessels designed to international codes such as ASME Section VIII.

- Low pressure drop configuration to maintain process efficiency.
- Simple operation with long adsorbent life and minimal operator intervention.
- Designed for safe handling and replacement of spent mercury laden media.

Applications

- Natural gas processing plants upstream of cryogenic units and aluminum exchangers.
- LNG, NGL, and LPG recovery facilities requiring mercury free feed streams.
- Refinery and petrochemical units handling mercury contaminated feedstocks.
- Helium, hydrogen, and synthesis gas purification systems.



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