ABSTRACT OF THE DISCLOSURE

TITLE OF THE INVENTION:

PRODUCTION OF ARGON FROM
A CRYOGENIC AIR SEPARATION PROCESS

The present invention relates to a process for the cryogenic separation of air to recover at least a nitrogen-depleted crude argon product, wherein the process is carried out in a primary distillation system comprising at least a first distillation column, which separates a feed mixture comprising nitrogen, oxygen and argon into a nitrogen-enriched overhead and an oxygen-rich bottoms, and a side-arm column which rectifies an argon-containing feed stream fed from the primary distillation column to produce an essentially-oxygen-depleted argon overhead. The improvement of the present invention is characterized in that: (a) a nitrogen-containing, argon-rich side stream is withdrawn from a location of the side-arm column which is above the location of entry of the argon-containing feed stream; (b) the withdrawn, nitrogen-containing, argon-rich side stream of step (a) is fed to a nitrogen rejection column to remove the contained nitrogen, wherein the nitrogen rejection column contains at least a stripping section which is located below the location of the feed of the nitrogen-lean, argon-rich side stream, and wherein the stripping section of the nitrogen rejection column is provided with vapor boilup; (c) the nitrogen-depleted, crude argon product is recovered and removed from the bottom of the nitrogen rejection column; and (d) at least a portion of upward flowing vapor in the nitrogen rejection column is removed and the removed portion is returned to a suitable location of the side-arm column.

(Figure 1)