

REGENERATION OF SULFURIC ACID FROM SULFATE BY-PRODUCTS OF 2-HYDROXY-4 (METHYLTHIO)BUTYRIC ACID MANUFACTURE

ABSTRACT

A process for the preparation of sulfuric acid by burning the oxidizable components of a feed solution obtained as a by-product of the preparation of 2-hydroxy-4-(methylthio)butyric acid ("HMBA") by hydrolysis of 2-hydroxy-4-(methylthio)butyronitrile ("HMBN"). A combustion gas containing sulfur dioxide is produced. The combustion gas is cooled to condense water and sulfuric acid, then mixed with resource of oxygen to produce a feed gas containing at least about 0.9 moles oxygen per mole sulfur dioxide. The feed gas is passed over a catalyst for the conversion of sulfur dioxide to sulfur trioxide at a temperature effective for the conversion. Sulfur trioxide may be absorbed in concentrated sulfuric acid to generate additional sulfuric acid which may be recycled and used for hydrolysis of HMBN in the preparation of HMBA. The process may be operated as a closed system in which ammonium bisulfate by-product of HMBA manufacture is used as the source of sulfur for the generation of sulfuric acid used in the hydrolysis of HMBN to HMBA.

FIGURE 1A.