

Abstract**METHOD FOR COMPRESSING GASES CONTAINING HYDROGEN SULFIDE**

The invention relates to a method for compressing a gas stream containing hydrogen sulfide, comprising (i) compressing the gas stream containing the hydrogen sulfide in a compressor, (ii) flushing the compressor with a mixture containing dialkyl polysulfides, dialkyl disulfides and at least one amine; to a method for producing sulfur compounds selected from the group consisting of alkyl mercaptans, dialkyl disulfides and alkane sulfonic acids, comprising reacting gas streams containing hydrogen sulfide, wherein the gas streams containing hydrogen sulfide are compressed according to the method comprising the steps i) and ii); and to the use of a mixture containing dialkyl polysulfides, dialkyl disulfides and at least one amine for removing sulfur deposits occurring during the compression of a gas stream containing hydrogen sulfide.

Figure 1