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[54] **PROCESS FOR AUTOCLAVING MOLYBDENUM DISULFIDE**

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[58] **Field of Search** 423/55, 53, 58, 423/54, 606, 593

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[57] **ABSTRACT**

A method for producing MoO_3 from MoS_2. MoS_2 is combined with water to form a slurry which is then combined with at least one oxygen-containing oxidizing gas in a reaction chamber in order to initiate oxidization and conversion of MoS_2 into MoO_3. The oxidization and conversion of MoS_2 into MoO_3 is terminated before complete conversion of MoS_2 to MoO_3 takes place in order to generate a solid reaction product comprising MoO_3 and unreacted MoS_2 in combination with a residual liquid product comprising dissolved Mo therein. The oxidization and conversion process may be terminated when about 70–95% by weight MoS_2 has been converted to MoO_3. Thereafter, the solid reaction product is separated from the residual liquid product and the residual liquid product combined with at least one extractant in order to generate a liquid fraction containing dissolved Mo. The liquid fraction containing dissolved Mo is then transferred back to the reaction chamber so that the dissolved Mo is combined with additional incoming supplies of MoS_2. Unreacted MoS_2 is removed from the solid reaction product and transferred back to the reaction chamber also for combination with additional incoming supplies of MoS_2.

25 Claims, 2 Drawing Sheets