

**Performance of Mo-V-O/TiO<sub>2</sub> catalysts in selective oxidation of hydrogen sulfide containing excess water and ammonia**

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The selective oxidation of hydrogen sulfide containing excess water and ammonia was studied over V<sub>2</sub>O<sub>5</sub>/TiO<sub>2</sub> and Mo-V-O/TiO<sub>2</sub> catalysts. Ammonia reacted either with H<sub>2</sub>S or SO<sub>2</sub>, produced from the oxidation of H<sub>2</sub>S. Water vapor promoted the reaction of ammonia and SO<sub>2</sub>. Mo-V-O/TiO<sub>2</sub> catalysts showed very high H<sub>2</sub>S conversion without any considerable emission of SO<sub>2</sub>. Temperature-programmed studies (TPR and TPO), XRD and XPS analyses revealed that the high catalytic performance of Mo-V-O/TiO<sub>2</sub> catalysts originated from the high redox capacity of vanadium molybdate phase.