

## Removal of Organic Sulfur Compounds in Standard Gas Using Porous Manganese Oxide as Adsorbent

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Desulfurization of pipeline fuel gas at ambient conditions before supplying to reforming processes is an essential requirement for stationary applications of fuel cells. In this study, the capacity and adsorptivity for dimethylsulfide (DMS), tert-butylmercaptan (TBM) and tetrahydrothiophene (THT) on mesoporous manganese oxide (Mesoporous MnOx) and cryptomelane (K-OMS-2) were evaluated by conducting breakthrough tests. The single component, binary and ternary mixtures of DMS, TBM and THT were carried out adsorption to compare their adsorptivity on two kinds of the adsorbents. The results indicated that cryptomelane (K-OMS-2) was a good adsorbent, especially with TBM. Additionally, K-OMS-2 in comparison with Y or modified-Y zeolite about adsorption capacity for sulfur compounds was also conducted.