

A study of hydrogen sulfide and ammonia simultaneous removal sorbents promoted with cobalt, molybdenum

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To remove hydrogen sulfide and ammonia simultaneously from hot coal-gases, the catal-sorbents prepared by co-precipitation method were the CMA-30, CNA-30 and MNA-30 catal-sorbents which were composed to cobalt, nickel, molybdenum and aluminum oxides. Their simultaneously removal capacities of the hydrogen sulfide and ammonia were tested in a micro-reactor under coal gas condition at 650°C. The sulfur removing capacities of the CMA-30, CNA-30 and MNA-30 catal-sorbents were 0.017, 0.018 and 0.026 g sulfur/g catal-sorbent and their the ammonia decomposition abilities were 0.079, 0.079 and 0.104 g NH₃/g catal-sorbent until break point in presence of hydrogen sulfide and ammonia gases. Especially the simultaneously removal capacities of the MNA-30 catal-sorbent was maintained during multiple cycles.