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FINAL

TECHNOLOGY DEVELOPMENT FOR COBALT F-T CATALYSTS

Contract No. DE-AC22-92PC92108

QUARTERLY TECHNICAL PROGRESS REPORT No. 14

Covering the Period January 1, 1996 to March 31, 1995~~6~~

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EXECUTIVE SUMMARY

Two new catalysts were prepared by Calsicat during this reporting period in order to investigate the effect of temperature on the reduction of non-promoted $\text{Co}/\text{Al}_2\text{O}_3$ catalysts. These new catalysts had similar formulations to the one used previously for Co.005. The main differences between these two catalysts was in the procedure used for their reduction. One of the catalysts was reduced with moist H_2 at 410°C and the other at 380°C and passivated by flaking in soya wax. Two runs were performed in the slurry bubble column reactor to evaluate the performance of these two catalysts and the effectiveness of the procedures used for reduction. Both catalysts had very low activity. The results showed that the high temperature reductions of non-promoted $\text{Co}/\text{Al}_2\text{O}_3$ catalysts did not improve their reducibility. The high concentration of water in the hydrogen stream is believed to enhance the formation of cobalt-alumina compounds more difficult to reduce. High temperature seems to enhance this process rather than the reduction.

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