

the degree of dehydrogenation was 73.2%. During the next 11 h work, 68 ml of cyclohexane, containing 0.034 g of ~~the~~ thiophene sulfur, were passed over the catalyst. The last sample of catalyst had....., i.e., the degree of dehydrogenation had been reduced to ~~73.0~~ 33.0%.

Some 6 ml of pure cyclohexane were also initially passed over 20 ml (29.4 g) of catalysts pressed at 20,000 atm. The resultant catalyzate had a refractive index of....., i.e., the degree of dehydrogenation was 73.0%. During the next 11 h, another 68 ml of ~~the~~ cyclohexane, containing 0.033 g of thiophene sulfur, were passed over the catalyst~~m~~. The last sample of catalyzate had....., i.e., the degree of dehydrogenation was 31.6%.

It follows from Fig. 1 that both catalyst samples, the unpressed ^{one} (curve 1) and the pressed ^{one} (curve 2), showed almost identical stability in respect of poisoning by thiophene.

Stability of Catalyst~~m~~ Samples in the Dehydrogenation of Cyclohexane with Cyclopentene Impurity. After the passage of a mixture containing 10% cyclopentene, the catalyst~~m~~ ^{was only} poisoned very slowly; we therefore used a mixture containing 30% cyclopentene.

Fig..2. Effect of cyclopentene impurity (in the dehydrogenation of cyclohexane) on the stability of a nickel-alumina catalyst.

Key

- 1) Degree of cyclohexane dehydrogenation
- 2) h

We see from Fig. 2 that the degree of dehydrogenation of the cyclohexane in the presence of the unpressed catalyst sample