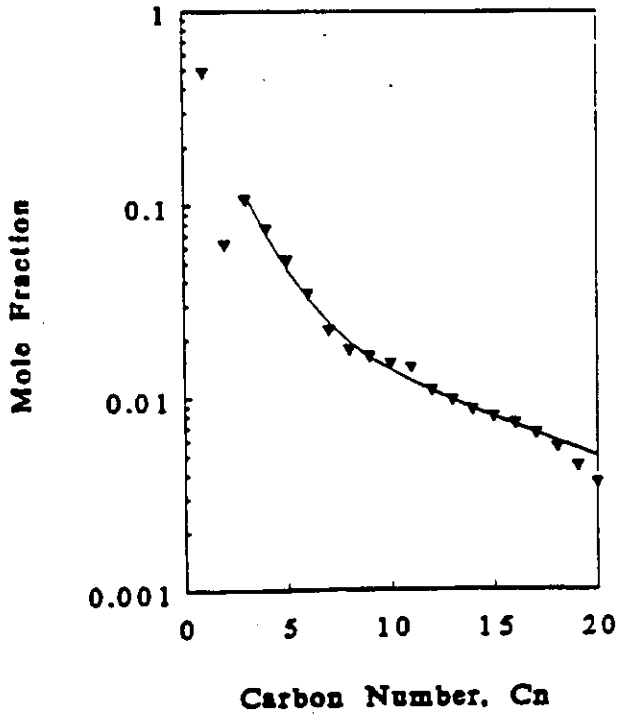

Fig.III-1 Representative Schulz-Flory Diagram showing a double-α-type distribution (220°C, 1.48 MPa, feed rate = 0.032 Nl/min/gcat). $(H_2/CO)_{in}$ = 1.64. (H_2/CO) in reactor = 1.65. α_1 = 0.54, α_2 = 0.91, and Ω = 5.4.

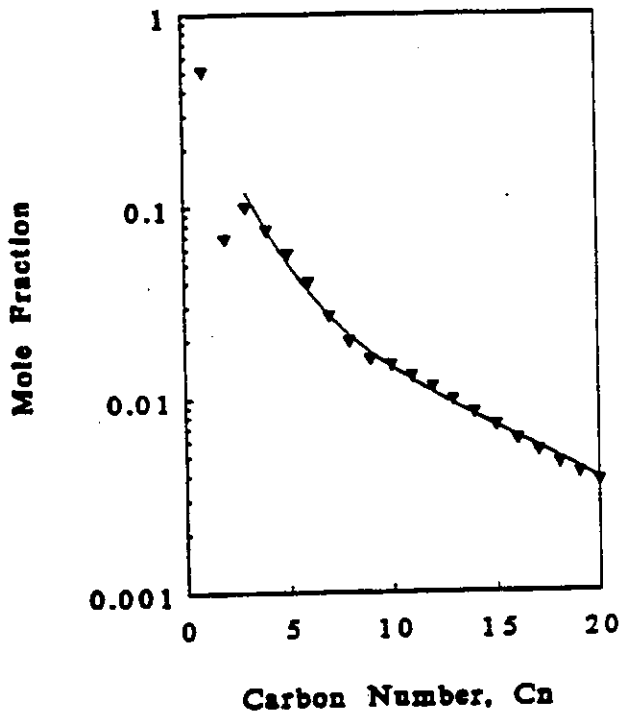

Fig. III-2 Representative Schulz-Flory Diagram showing a double-α-type distribution (230°C, 0.79 MPa, feed rate = 0.020 Nl/min/gcat). (H_2/CO) in reactor = 1.39. $(H_2/CO)_{in}$ = 1.55. α_1 = 0.54, α_2 = 0.88, and Ω = 5.

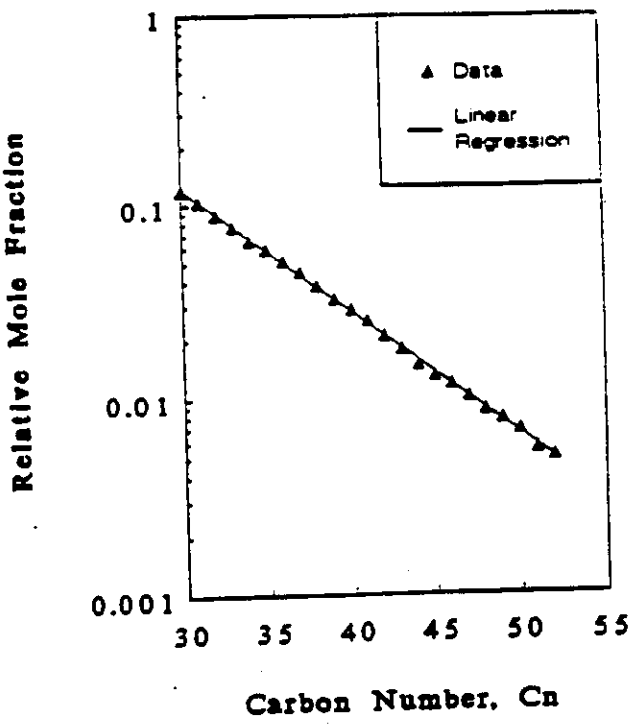

Fig. III-3 Schulz-Flory diagram for reactor liquid at completion of run. $\alpha_2 = 0.87$.

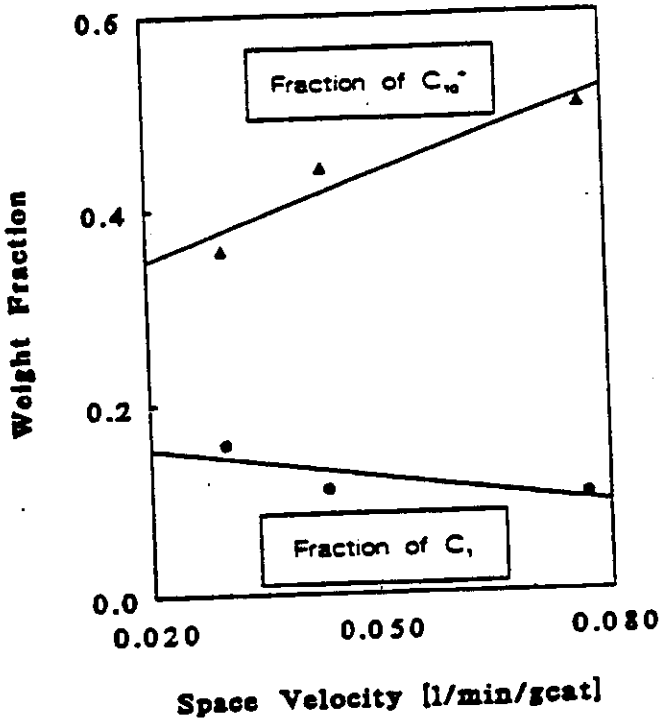

Fig. III-4 The C_{10}+ yield is greater at higher space velocities. Data at 240°C, 0.79 MPa, and $(H_2/CO)_{in} = 2$.

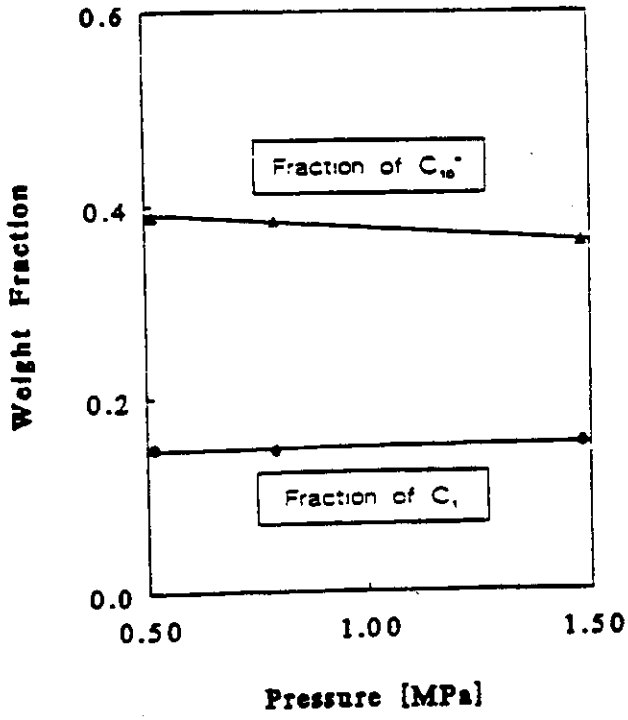

Fig. III-5 Pressure has no noticeable effect on product distribution. Data at 220°C and feed rate of 0.017-0.018 Nl/min/gcat. $(H_2/CO)_{in}=2$.

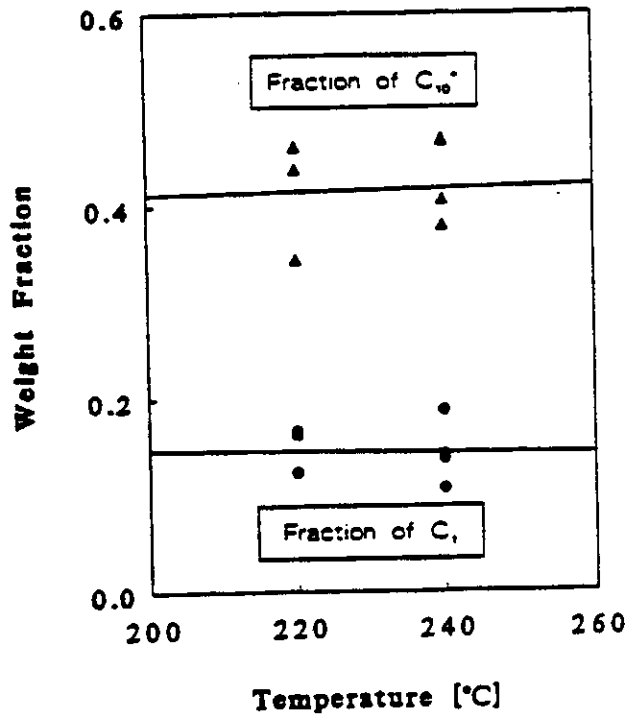

Fig. III-6 Temperature has no effect on product distributions. Total synthesis gas conversions are between 31 and 33%, allowing comparison of similar product to reactant ratios.

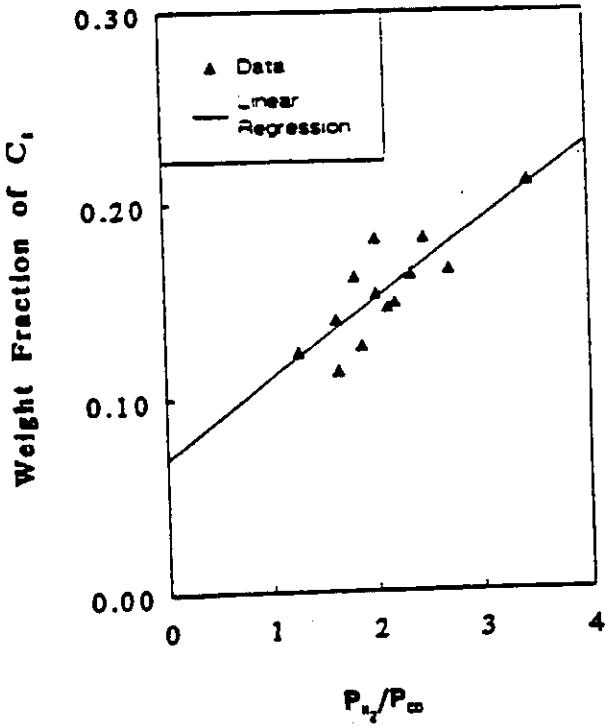

Fig. III-7 Weight fraction of C_1 increases with increasing H_2/CO, 220°C.

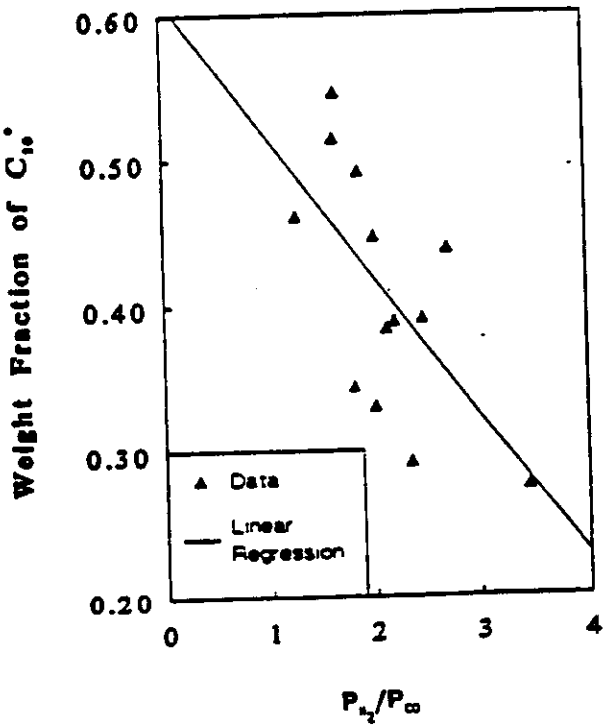

Fig. III-8 Weight fraction of $C_{10}+$ decreases with increasing H_2/CO, 220°C.

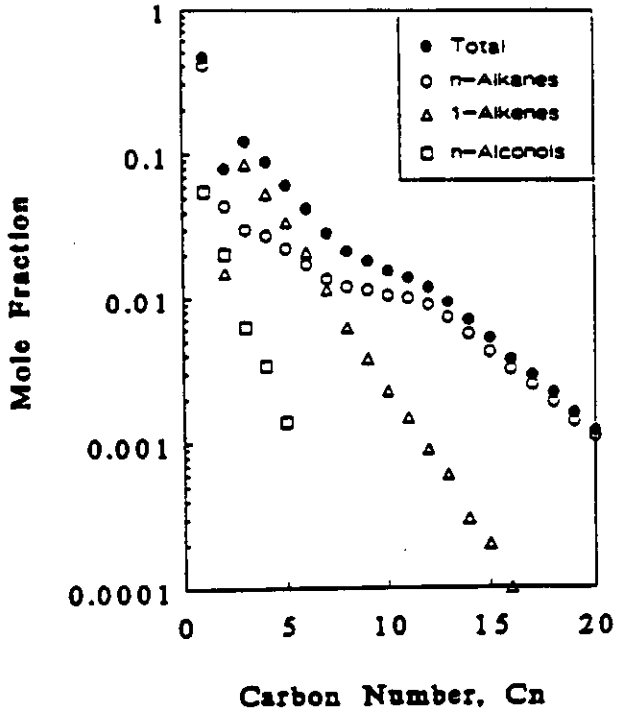

Fig. III-9 Component product distribution showing primary products, n-alkanes, 1-alkenes, and n-alcohols (220°C, 1.48 MPa, and feed rate of 0.015 Nl/min/gcat). $(H_2/CO)_{in}=1.66$.

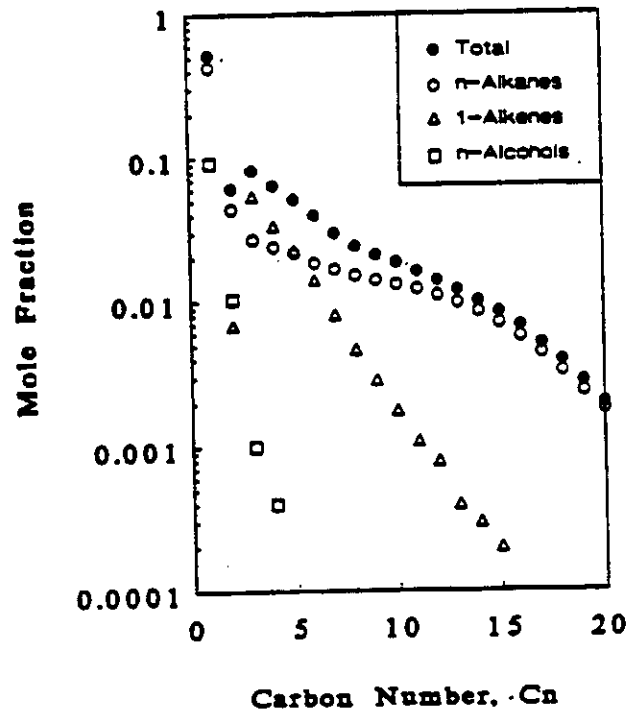

Fig. III-10 Component product distribution showing primary products, n-alkanes, 1-alkenes, and n-alcohol (240°C, 0.79 MPa, and feed rate of 0.035 Nl/min/gcat). $(H_2/CO)_{in}=2.15$.

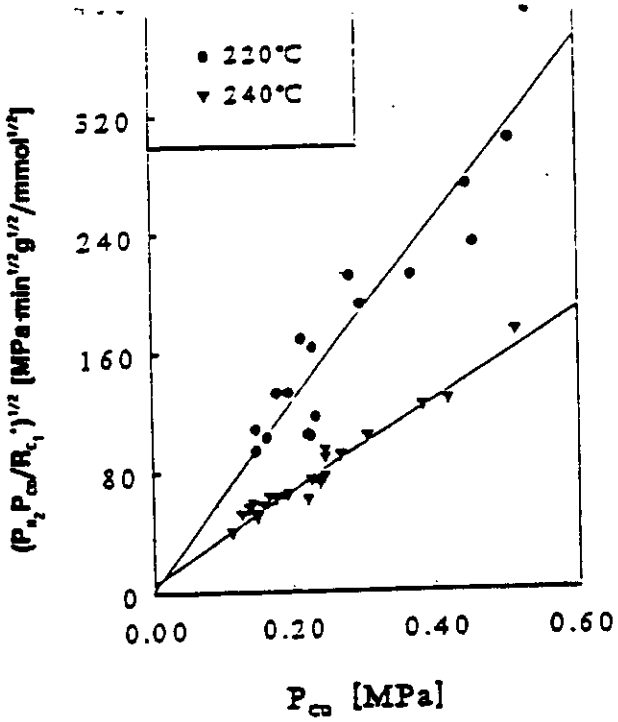

Fig. III-11 The rate of methane plus methanol formation is well fitted by equation 1.

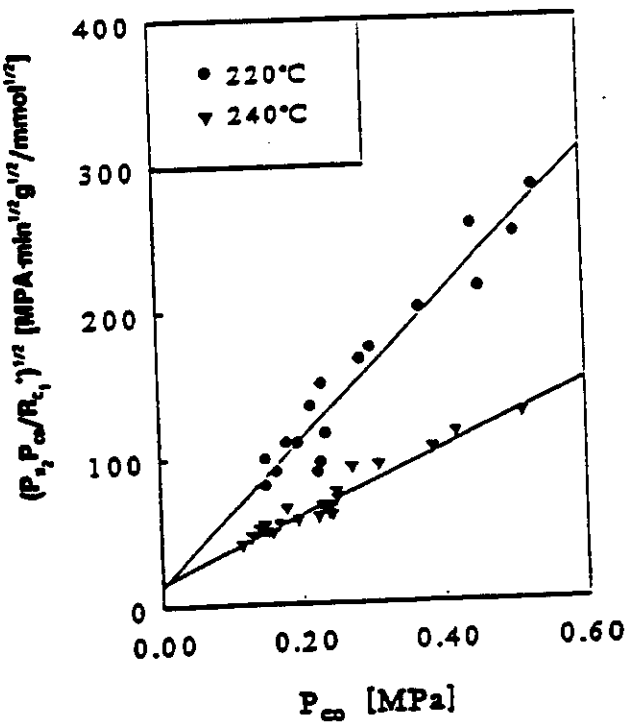

Fig. III-12 Rate of formation of C_2+ compounds is well fitted by equation 1.

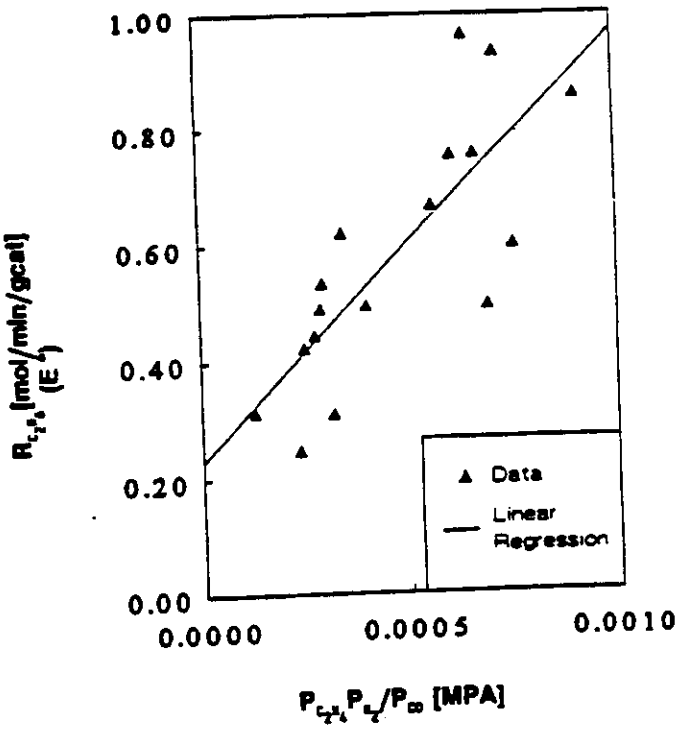

Fig. III-13 Most ethane is produced from ethene, according to a simple hydrogenation model, data at 220°C.

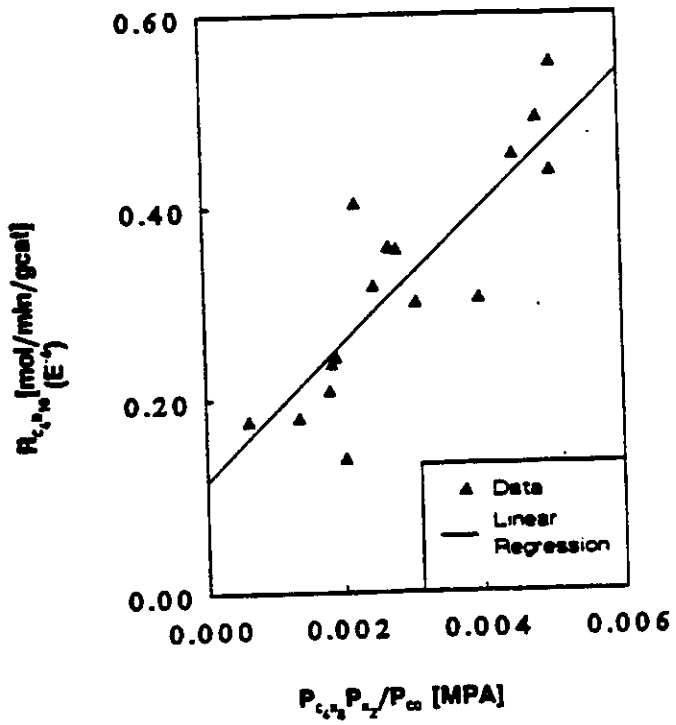

Fig. III-14 Most n-butane is produced from 1-butene, according to a simple hydrogenation model, data at 220°C.

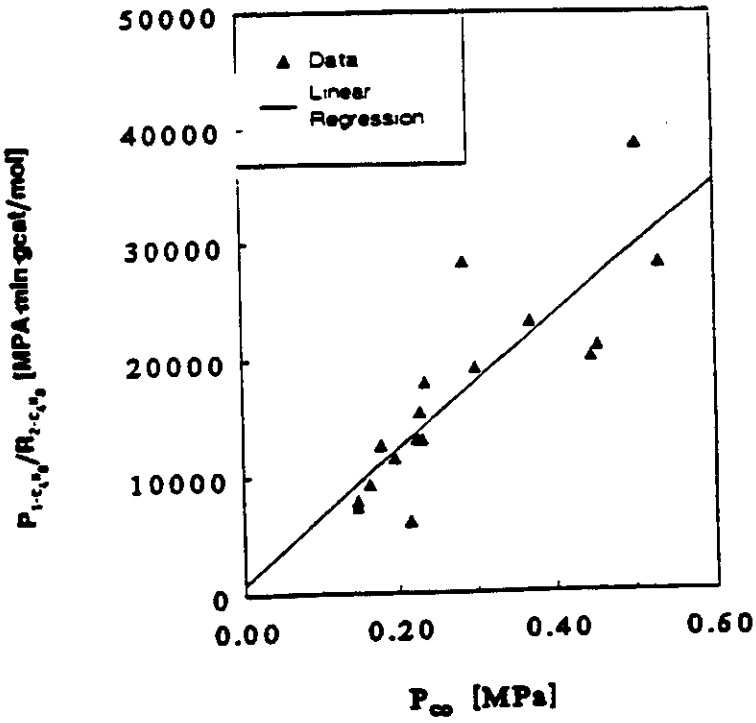

Fig. III-15a Most 2-butene is produced from 1-butene, according to simple isomerization model (see equation 2), 220°C.

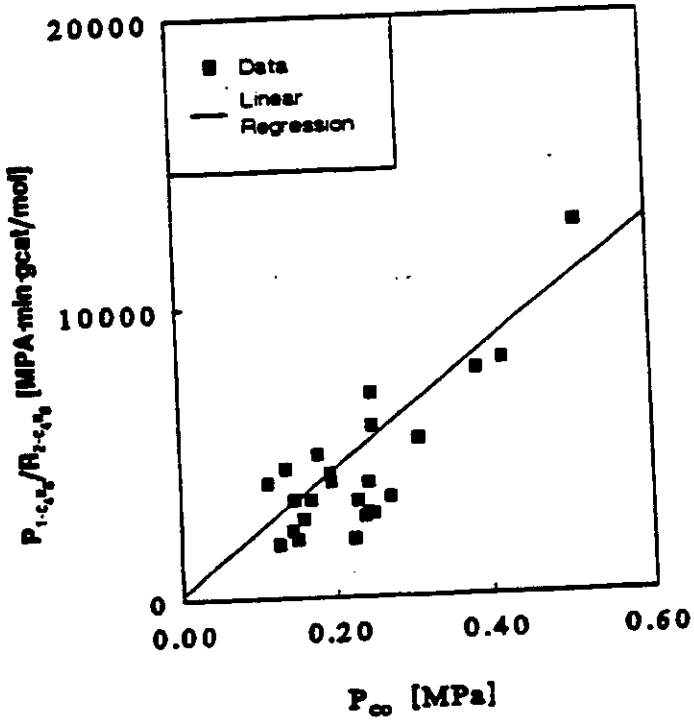

Fig. III-15b Most 2-butene is produced from 1-butene, according to simple isomerization model (see equation 2), 240°C.