

## (Co.047 - Run #1

Co wt%	NM wt %%	Promotor wt%		Support
20	Ru 0.500	K 0.30		Al <sub>2</sub> O <sub>3</sub>

## SUMMARY REACTION DATA

## Reaction Conditions:

P = 1.0 atm

T = 220 °C

H<sub>2</sub>/CO = 2

weight of catalyst = 0.273 g

WHSV = 9.443 1/hr

time on stream = 22.0 hrs

CO<sub>2</sub> (g/g cat/hr) = 0.040CO<sub>2</sub> (% of CO) = 0.3

O/P = 7.20

E<sub>a</sub> = 26.6 kcal/mol

CO conversion (%)	6.4
rate (g CH <sub>2</sub> /g cat/hr)	0.26
alpha	0.73
C1 (wt%)	21.3
C2 - C4 ((wt%))	21.9
C5 - C12 (wt%)	47.4
C13 + (wt%)	9.3

### Performance of Co.047

Dates: : 04/07/94 - 04/08/94 Run #1

flow rate = 90.0 cc/min, loading = 0.33 g, WHSV = 9.4 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	0.5	2.5	5.0	8.0	20.5	22.0
reaction temperature, °C	220	220	220	220	220	220
pressure, atm	1.0	1.0	1.0	1.0	1	1
flow, cc/min	90.0	90.0	90.0	90.0	90.0	90.0

#### C1 - C15 product distribution, weight %

C1	20.77	20.32	21.20	21.13	21.52	22.11
C2	4.04	3.95	3.72	4.11	4.20	3.87
C3	10.24	9.48	9.38	9.28	9.20	9.24
C4	10.97	10.18	9.96	9.74	9.62	9.62
C5	11.12	10.68	10.40	10.19	10.05	10.01
C6	8.75	8.72	8.51	8.46	8.14	8.24
C7	8.30	8.43	8.28	8.13	8.17	8.08
C8	6.58	6.81	6.78	6.67	6.68	6.59
C9	5.05	5.40	5.44	5.42	5.53	5.46
C10	4.11	4.50	4.47	4.51	4.61	4.56
C11	3.22	3.63	3.65	3.79	3.70	3.68
C12	2.53	2.82	3.01	3.22	3.07	3.11
C13	1.80	2.22	2.13	2.32	2.29	2.16
C14	1.42	1.65	1.73	1.77	1.82	1.93
C15	1.10	1.22	1.33	1.25	1.42	1.33
alpha chain growth probability	0.71	0.72	0.73	0.72	0.73	0.73

#### C1 - C50 estimated total product distribution, weight %

C1	20.1	19.7	20.4	20.6	20.6	21.3
C2 - C4	24.4	22.9	22.2	22.5	22.0	21.9
C5 - C12	48.0	48.9	48.2	48.1	47.5	47.4
C13 - C50	7.5	8.4	9.3	8.8	9.9	9.3

CO conversion, %	9.7	8.5	8.2	7.8	6.8	6.4
rate, g CH <sub>2</sub> /g cat/hr	0.40	0.35	0.34	0.32	0.28	0.26
CO <sub>2</sub> formation, %	0.4	0.2	0.3	0.4	0.5	0.3

### Performance of Co.047

Dates: 04/07/94 - 04/08/94 Run #1

flow rate = 90.0 cc/min, loading = 0.3 g, WHSV = 9.4 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	24.0	26.0	28.0	30.0	32.0
reaction temperature, °C	220	210	240	230	220
pressure, atm	1	1	1	1	1
flow, cc/min	90.0	90.0	90.0	90.0	90.0

#### C1 - C15 product distribution, weight %

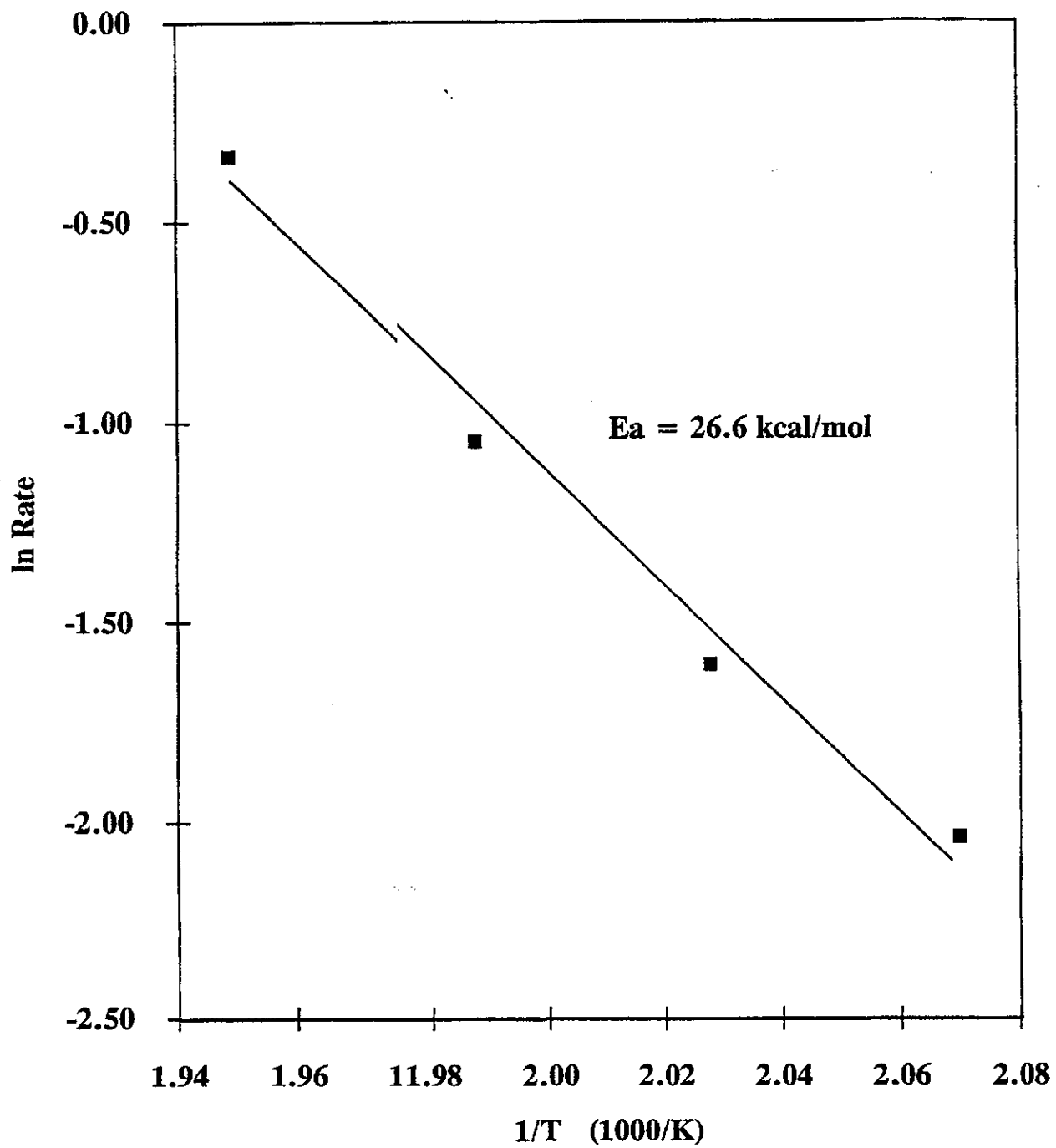
C1	21.45	16.91	37.49	28.17	20.30
C2	3.77	2.98	6.53	5.40	4.08
C3	8.97	7.00	13.47	3.10	8.69
C4	9.34	7.94	10.99	11.11	9.27
C5	9.93	9.05	9.17	11.35	9.97
C6	8.38	8.23	6.55	8.74	8.54
C7	8.20	8.35	5.33	8.04	8.18
C8	6.76	7.50	3.72	6.27	6.81
C9	5.62	6.73	2.38	4.68	5.68
C10	4.68	5.96	1.70	3.95	4.74
C11	3.82	5.13	1.07	3.13	3.89
C12	3.25	4.43	0.89	2.48	3.51
C13	2.30	3.80	0.27	1.55	2.54
C14	2.16	3.20	0.27	1.17	2.12
C15	1.39	2.80	0.16	0.86	1.71
alpha chain growth probability	0.73	0.80	0.59	0.71	0.75

#### C1 - C50 estimated total product distribution, weight %

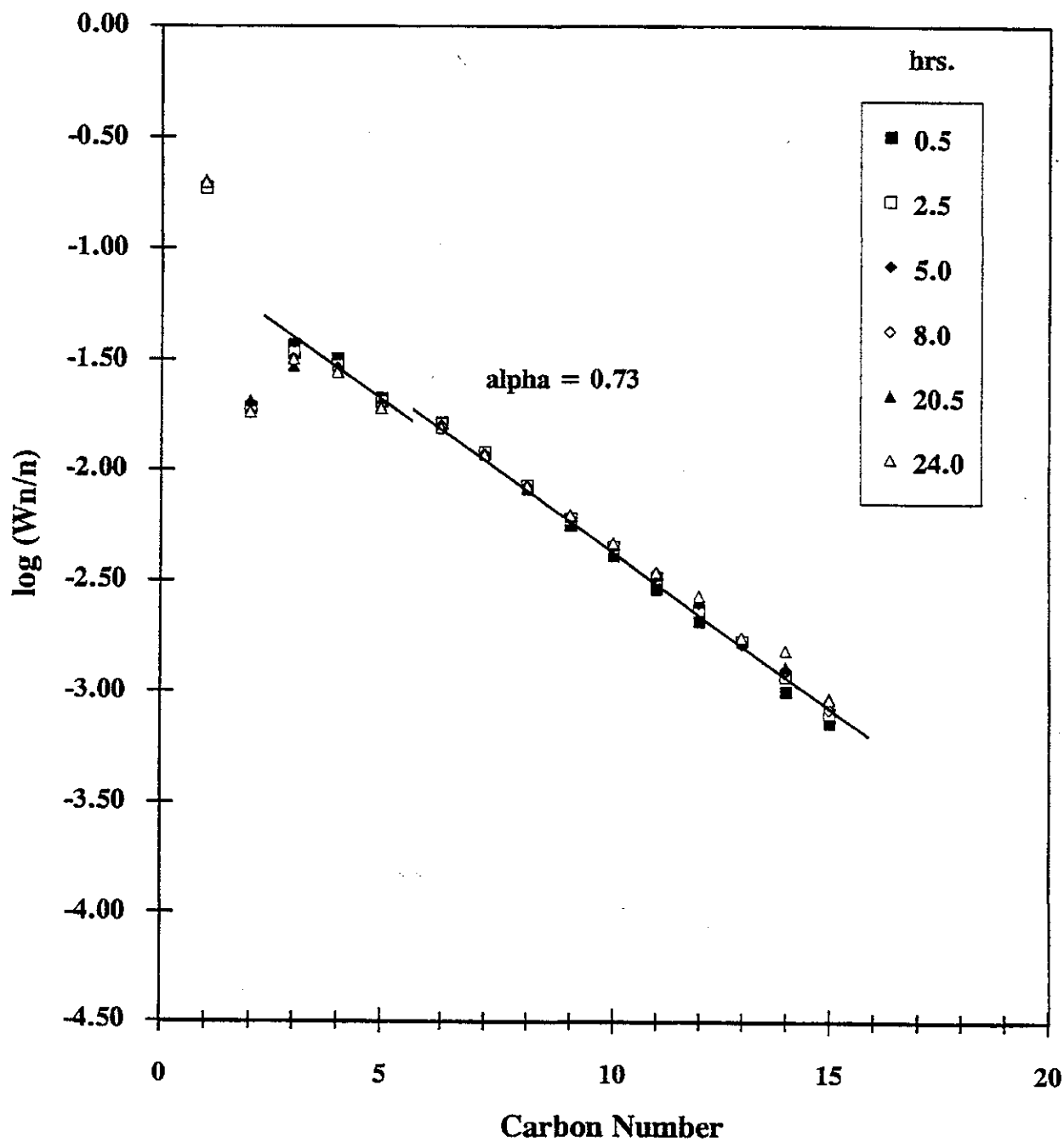
C1	20.7	14.8	37.5	27.8	19.1
C2 - C4	21.3	15.6	31.0	19.4	20.7
C5 - C12	48.2	48.3	30.4	46.8	48.0
C13 - C50	9.8	21.3	1.1	6.0	12.2

CO conversion, %	6.6	3.6	17.4	8.6	5.2
rate, g CH <sub>2</sub> /g cat/hr	0.27	0.15	0.72	0.36	0.21
CO <sub>2</sub> formation, %	0.6	0.2	0.8	0.4	0.3

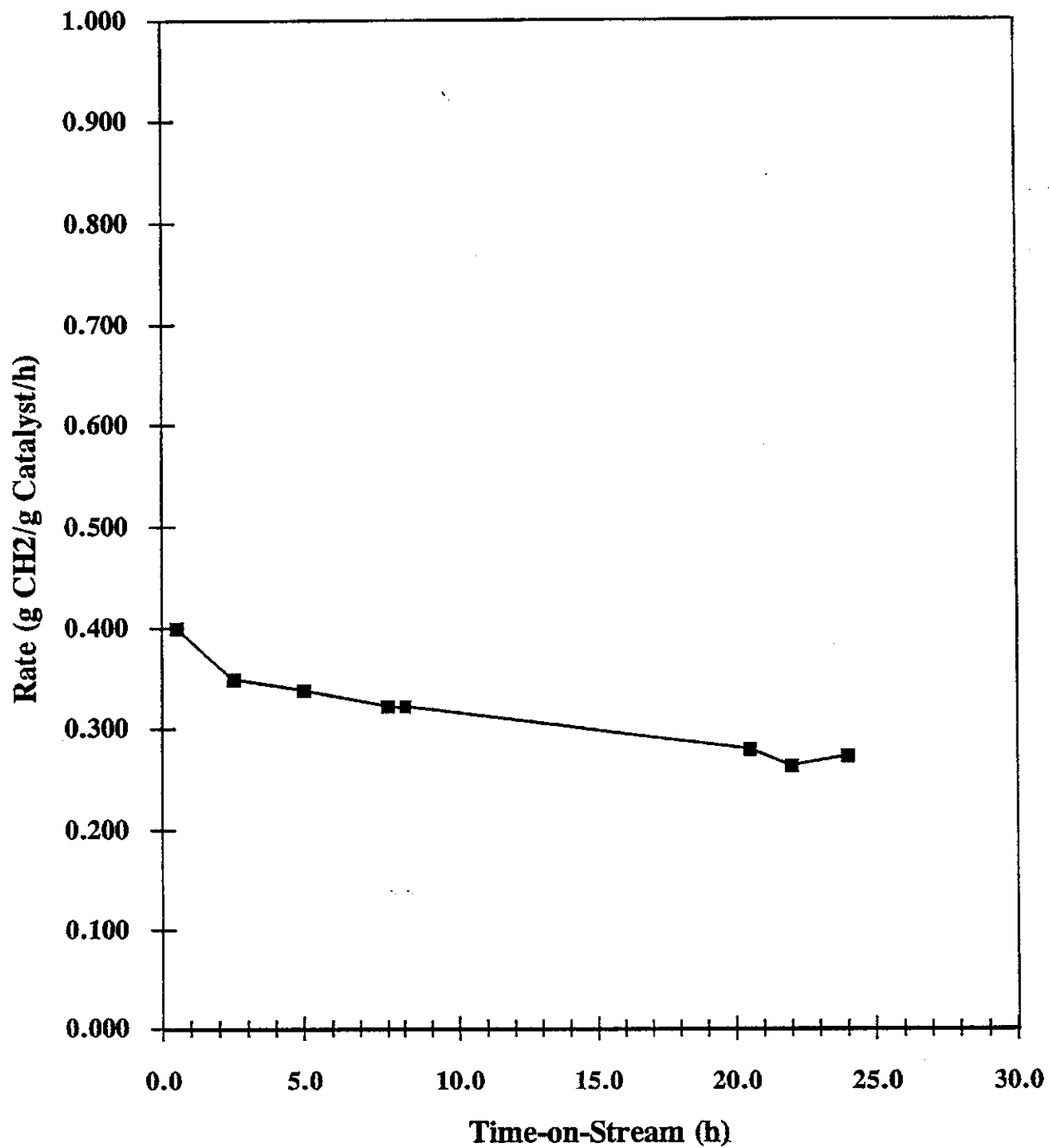
## Coo.047 Arrhenius Plot - Run #1



Schulz-Flory Plot for Co.047 - Run #1  
Time on Stream (hrs)



## Time-on-Stream Plot for Co.047 - Run #1



## (Co.048 - Run #1

Co wt%	NM wt %%	Promotor wt%		Support
20	Ru 0.500	K 0.30	Zr 8.50	SiO <sub>2</sub>

## SUMMARY REACTION DATA

## Reaction Conditions:

P = 1.0 atm

T = 220 °C

H<sub>2</sub>/CO = 2

weight of catalyst = 0.245 g

WHSV = 100.48 1/hr

time on stream = 26.0 hrs

CO<sub>2</sub> (g/g cat/hr) = 0.027CO<sub>2</sub> (% of CO) = 0.2

O/P = 17.18

E<sub>a</sub> = 28.0 kcal/mol

CO conversion (%)	3.5
rate (g CHH <sub>2</sub> /g cat/hr)	0.16
alpha	0.77
C1 (wt%)	16.3
C2 - C4 ((wt%))	18.6
C5 - C12 . (wt%)	49.1
C13 + (wt%)	16.0

## (Co.048 - Run #1

Co wt%	NM wt %%	Promotor wt%		Support
20	Ru 0.500	K 0.30	Zr 8.50	SiO2

## SUMMARY REACTION DATA

## Reaction Conditions:

P = 1.0 atm

T = 220 °C

H<sub>2</sub>/CO = 2

weight of catalyst = 0.245 g

WHSV = 100.48 1/hr

time on stream = 26.0 hrs

CO<sub>2</sub> (g/g cat/hr) = 0.027CO<sub>2</sub> (% of CO) = 0.2

O/P = 17.18

E<sub>a</sub> = 28.0 kcal/mol

CO conversion (%)	3.5
rate (g CHH <sub>2</sub> /g cat/hr)	0.16
alpha	0.77
C1 (wt%)	16.3
C2 - C4 ((wt%))	18.6
C5 - C12 . (wt%)	49.1
C13 + (wt%)	16.0



## Performance of Co.048

Dates: 04/14/94 - 04/15/94    Run #1

flow rate = 90.0 cc/min, loading = 0.02 g, WHSV = 10.5 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	1.0	3.0	5.0	8.0	22.0	24.0
reaction temperature, °C	220	220	220	220	220	220
pressure, atm	1.0	1.0	1.0	1.0	1	1
flow, cc/min	90.0	90.0	90.0	90.0	90.0	90.0

### C1 - C15 product distribution, weight %

C1	17.11	17.31	16.70	18.11	18.56	18.28
C2	4.06	4.12	3.62	3.91	4.33	4.22
C3	8.27	8.25	7.79	8.36	8.47	8.37
C4	8.97	8.85	8.25	8.90	8.94	8.30
C5	9.51	9.30	9.76	9.34	9.41	9.31
C6	8.26	7.82	7.73	8.08	8.26	8.74
C7	8.38	8.17	8.59	8.16	8.20	8.12
C8	7.33	7.21	7.50	7.12	7.12	7.06
C9	6.30	6.29	6.57	6.15	6.09	6.14
C10	5.44	5.51	5.67	5.32	5.23	5.35
C11	4.62	4.67	4.81	4.53	4.39	4.51
C12	3.85	4.00	4.15	3.93	3.62	3.71
C13	3.15	3.31	3.32	3.17	3.03	3.04
C14	2.56	2.86	2.98	2.62	2.44	2.66
C15	2.19	2.32	2.55	2.30	1.91	2.20
alpha chain growth probability	0.77	0.78	0.78	0.77	0.76	0.77

### C1 - C50 estimated total product distribution, weight %

C1	15.8	15.6	14.9	16.6	17.2	16.6
C2 - C4	19.6	19.1	17.6	19.4	20.1	19.0
C5 - C12	49.1	47.8	49.1	48.1	48.2	48.3
C13 - C50	15.5	17.6	18.5	15.9	14.5	16.1

CO conversion, %	5.0	4.7	4.7	4.3	3.4	3.4
rate, g CH <sub>2</sub> /g cat/hr	0.23	0.21	0.22	0.20	0.16	0.16
CO <sub>2</sub> formation, %	0.4	0.3	0.2	0.2	0.2	0.3

### Performance of Co.048

Dates: 04/14/94 - 04/15/94 Run #1

flow rate = 90.0 cc/min, loading = 0.2 g, WHSV = 10.5 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	26.0	29.0	31.0	33.0	35.0
reaction temperature, °C	220	210	240	230	220
pressure, atm	1	1	1	1	1
flow, cc/min	90.0	90.0	90.0	90.0	90.0

#### C1 - C15 product distribution, weight %

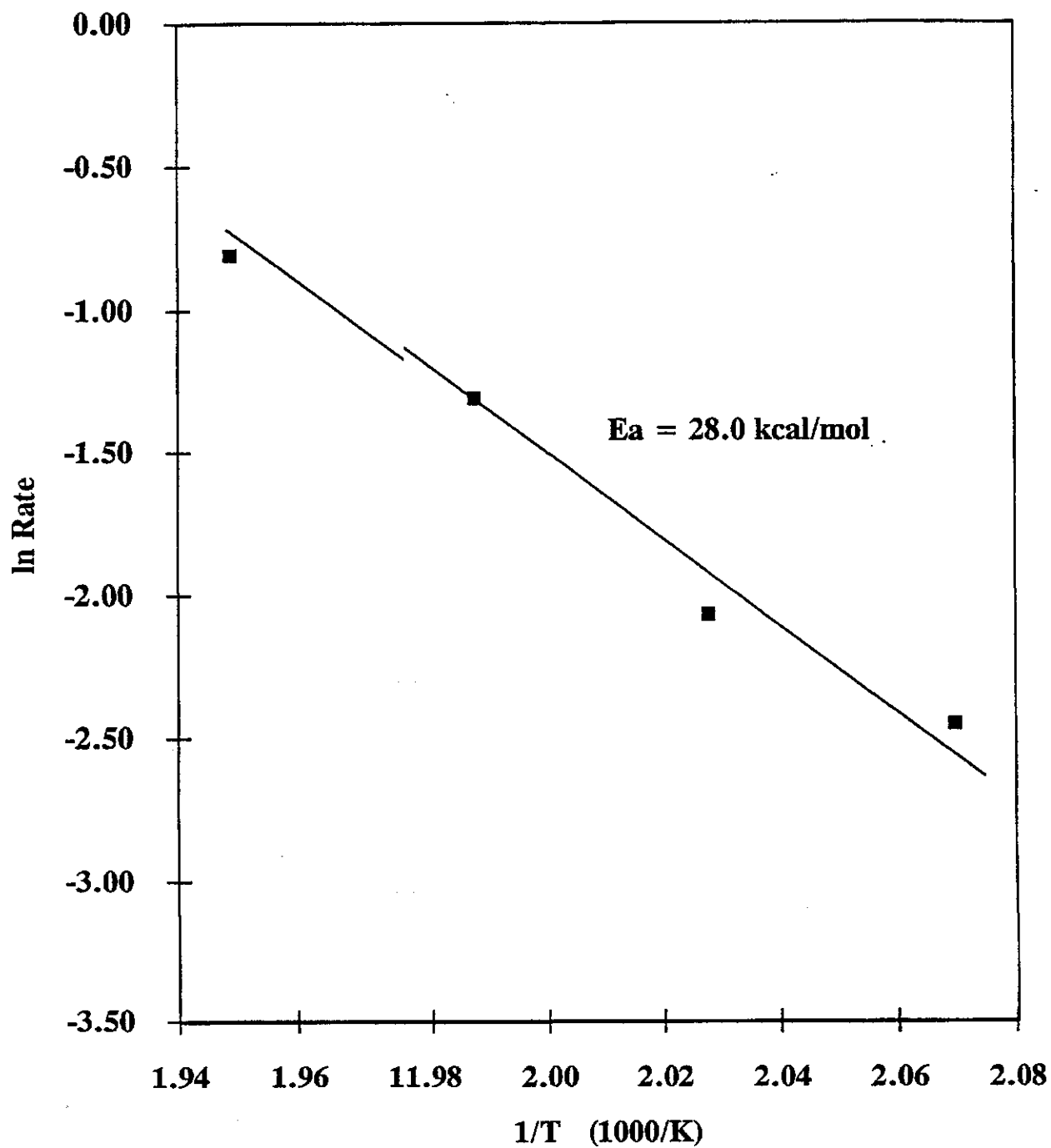
C1	17.83	15.09	27.91	22.20	18.46
C2	4.14	3.29	6.51	5.41	4.49
C3	8.12	6.59	11.93	9.87	8.27
C4	8.04	6.82	10.55	9.70	8.70
C5	9.58	9.35	9.72	9.58	9.32
C6	8.47	7.92	7.62	8.01	8.50
C7	8.30	8.47	7.24	7.97	8.01
C8	7.24	7.81	5.10	6.22	6.85
C9	6.33	7.10	3.82	5.13	6.04
C10	5.46	6.28	2.96	4.27	5.18
C11	4.60	5.51	2.16	3.41	4.48
C12	3.90	4.94	1.75	2.77	3.74
C13	3.13	4.19	1.15	2.11	3.13
C14	2.63	3.58	0.98	1.81	2.59
C15	2.25	3.05	0.60	1.52	2.23
alpha chain growth probability	0.77	0.80	0.68	0.74	0.78

#### C1 - C50 estimated total product distribution, weight %

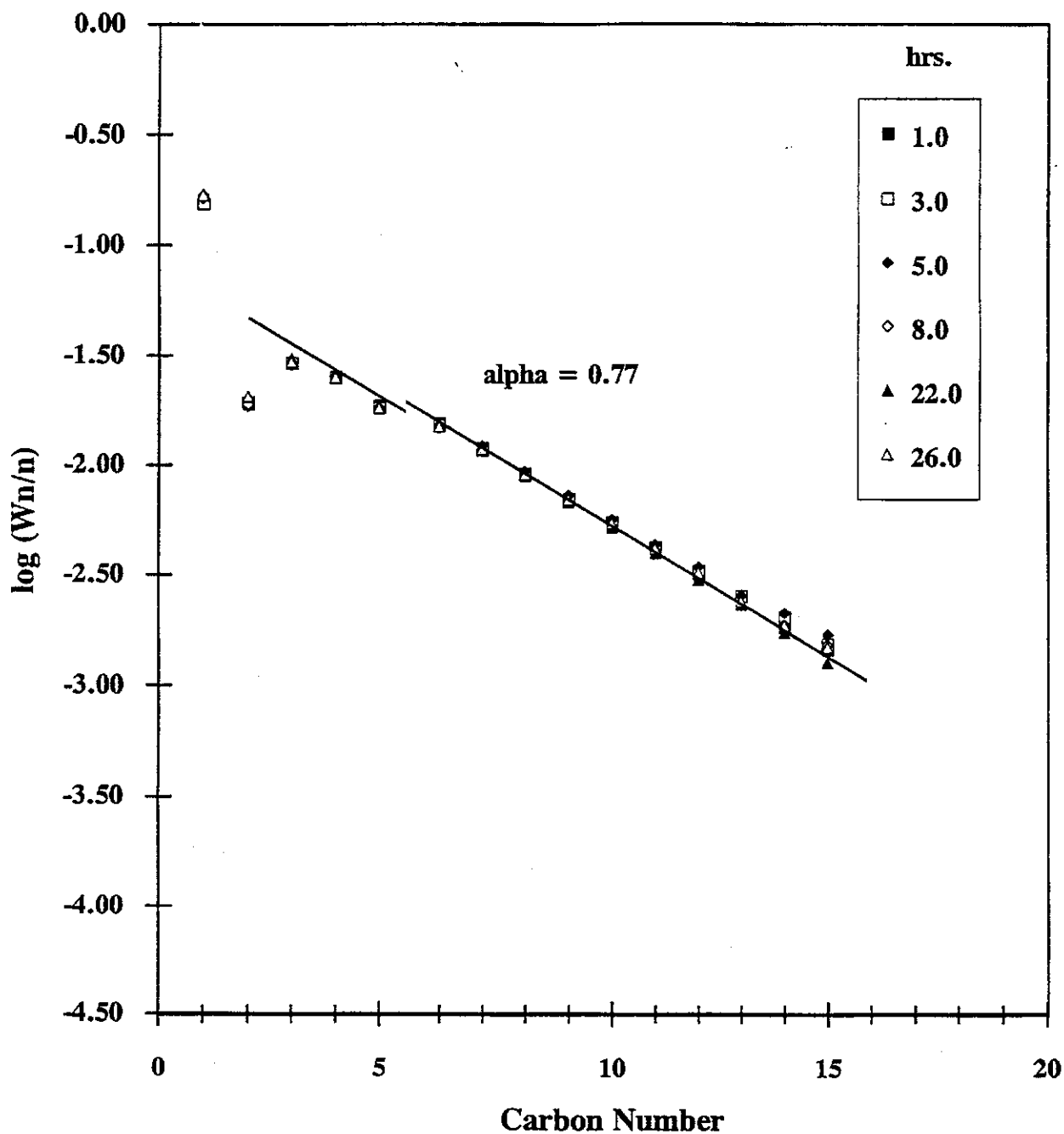
C1	16.3	13.0	27.2	21.1	16.8
C2 - C4	18.6	14.3	28.3	23.7	19.6
C5 - C12	49.1	49.0	39.7	45.2	47.3
C13 - C50	16.0	23.7	4.8	10.0	16.3

CO conversion, %	3.5	2.2	10.0	6.2	3.0
rate, g CH <sub>2</sub> /g cat/hr	0.16	0.10	0.46	0.29	0.14
CO <sub>2</sub> formation, %	0.2	0.2	0.5	0.2	0.2

## Coo.048 Arrhenius Plot - Run #1



Schulz-Flory Plot for Co.048 - Run #1  
Time on Stream (hrs)



## Performance of Co.049

Dates: 04/24/94 - 04/25/94    Run #1

flow rate = 90.0 cc/min, loading = 0.0.2 g, WHSV = 11.8 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	0.5	2.5	5.0	8.5	22.0	24.0
reaction temperature, °C	220	220	220	220	220	220
pressure, atm	1.0	1.0	1.0	1.0	1.0	1.0
flow, cc/min	90.0	90.0	90.0	90.0	90.0	90.0

### C1 - C15 product distribution, weight %

C1	24.62	24.15	23.41	24.73	23.74	24.33
C2	4.77	4.69	4.58	4.74	4.53	4.21
C3	12.39	12.01	11.43	11.61	10.60	10.55
C4	12.66	12.97	11.91	11.99	10.93	10.87
C5	11.54	11.44	11.49	11.60	10.89	10.77
C6	8.52	8.78	9.17	9.37	8.90	8.66
C7	7.59	7.46	7.75	7.09	7.89	7.91
C8	5.46	5.45	5.78	5.37	6.11	6.12
C9	3.81	3.92	4.26	3.92	4.62	4.66
C10	2.98	3.04	3.29	2.96	3.68	3.70
C11	2.06	2.30	2.45	2.38	2.84	3.04
C12	1.40	1.46	1.79	1.67	1.98	2.06
C13	0.93	1.05	1.20	1.14	1.41	1.34
C14	0.74	0.76	0.85	0.79	1.15	1.04
C15	0.55	0.52	0.64	0.63	0.72	0.74
alpha chain growth probability	0.66	0.65	0.67	0.67	0.68	0.68

### C1 - C50 estimated total product distribution, weight %

C1	24.2	23.9	23.1	24.3	23.5	24.0
C2 - C4	29.3	29.4	27.5	27.9	25.8	25.3
C5 - C12	42.9	43.2	45.1	43.6	45.9	45.6
C13 - C50	3.6	3.5	4.2	4.2	4.9	5.0

CO conversion, %	10.5	10.3	9.4	8.8	7.3	7.3
rate, g CH <sub>2</sub> /g cat/hr	0.54	0.53	0.48	0.45	0.38	0.38
CO <sub>2</sub> formation, %	0.3	0.4	0.4	0.4	0.3	0.4

## Performance of Co.049

Dates: 04/24/94 - 04/25/94 Run #1

flow rate = 90.0 cc/min, loading = 0.2 g, WHSV = 11.8 1/hr, H<sub>2</sub>/CO ratio in feed = 2

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time on stream, hr	26.0
reaction temperature, °C	220
pressure, atm	1.0
flow, cc/min	90.0

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### C1 - C15 product distribution, weight %

C1	23.64
C2	4.60
C3	10.57
C4	10.83
C5	10.76
C6	8.85
C7	7.87
C8	6.10
C9	4.72
C10	3.64
C11	2.84
C12	2.24
C13	1.51
C14	1.06
C15	0.76
alpha chain growth probability	0.69

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### C1 - C50 estimated total product distribution, weight %

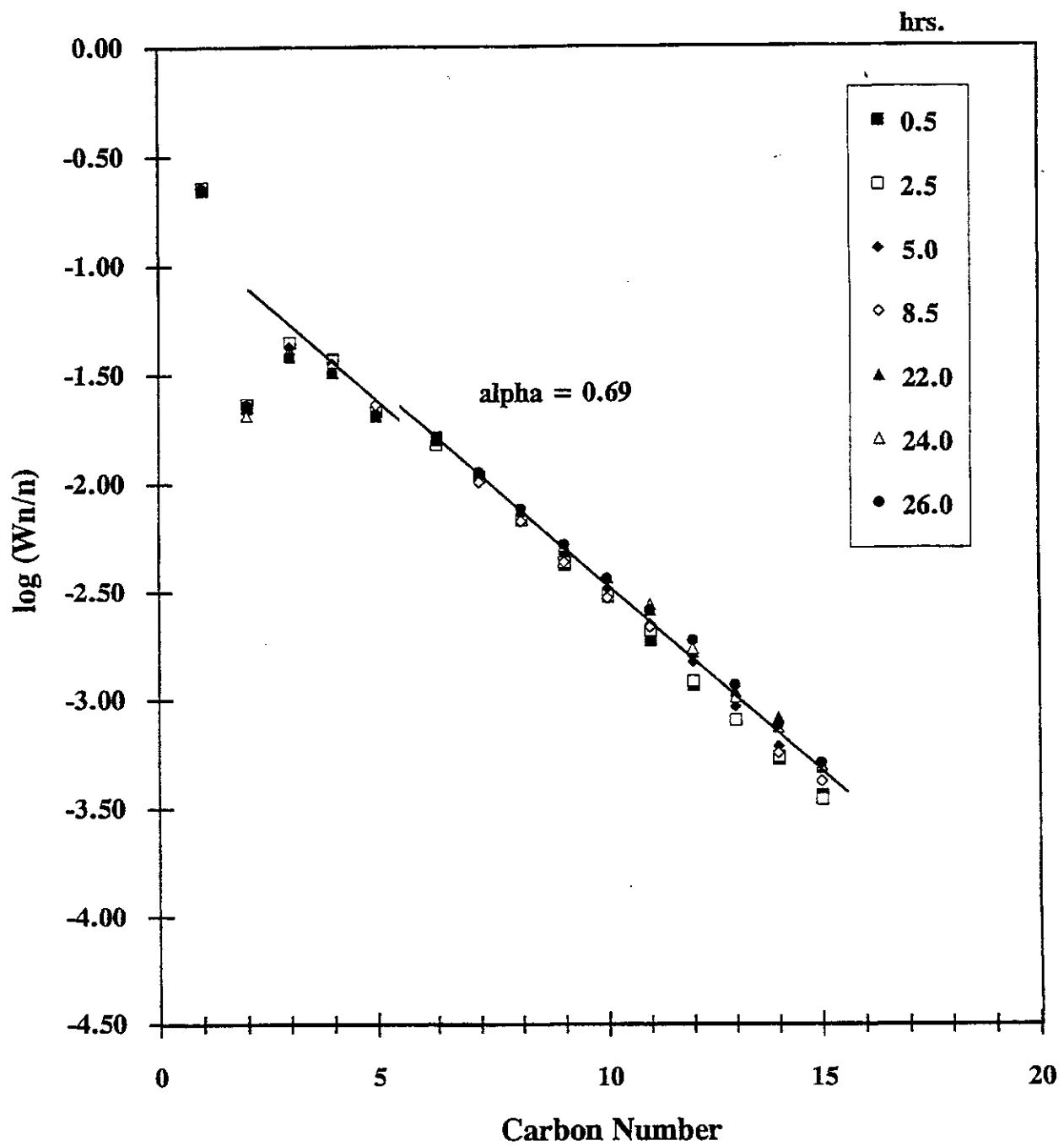
C1	23.4
C2 - C4	25.7
C5 - C12	45.8
C13 - C50	5.1

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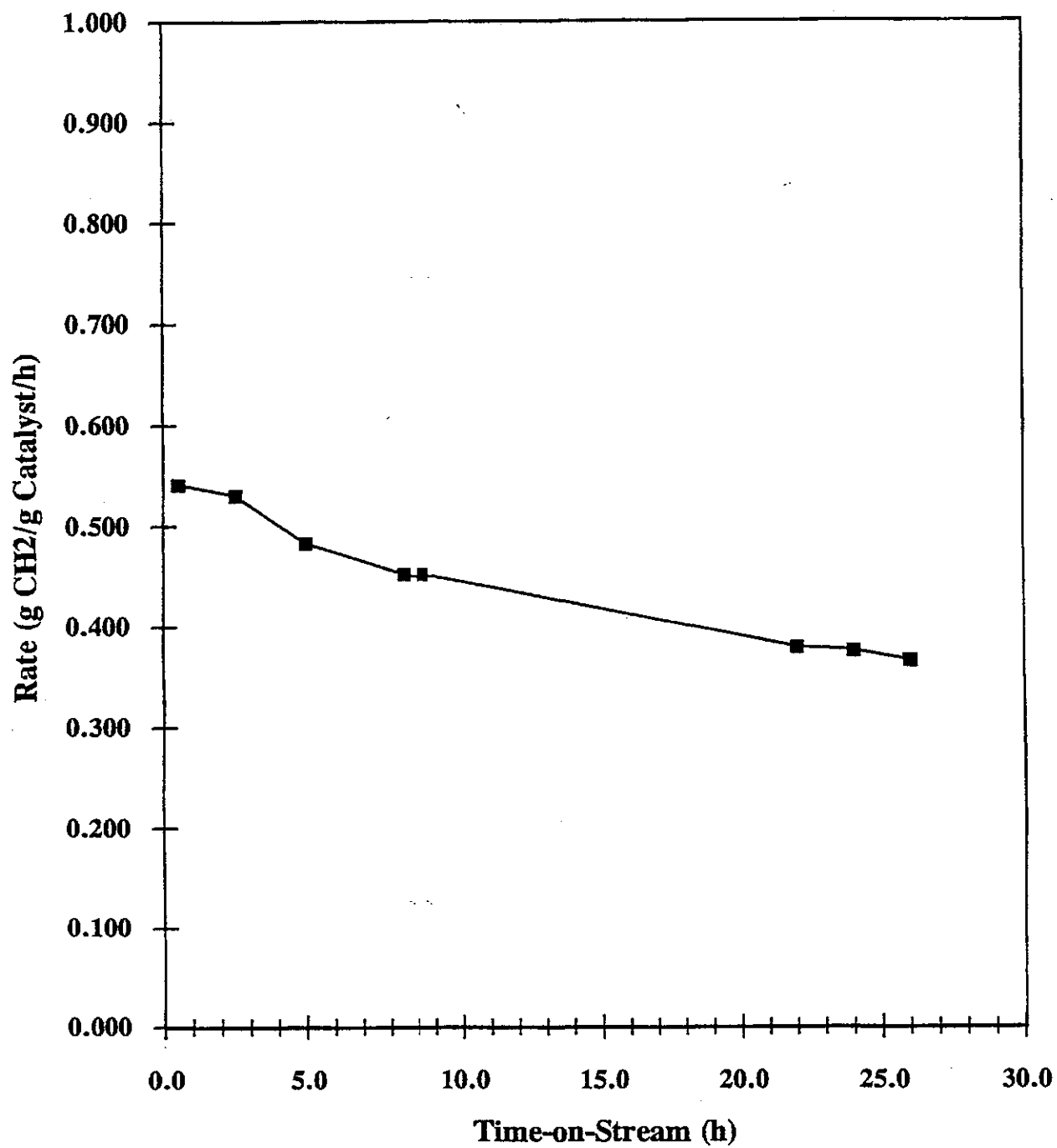
CO conversion, %	7.1
rate, g CH <sub>2</sub> /g cat/hr	0.37
CO <sub>2</sub> formation, %	0.2

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Schulz-Flory Plot for Co.049 - Run #1  
Time on Stream (hrs)



## Time-on-Stream Plot for Co.049 - Run #1





**(Co.049 - Run #2**

Co wt%	NM wt %%	Promotor wt%		Support
20	Ru 0.500	K 0.10		Al2O3

**SUMMARY REACTION DATA**

## Reaction Conditions:

P = 1.0 atm

T = 220 °C

H<sub>2</sub>/CO = 2

weight of catalyst = 0.175 g

WHSV = 14.4.69 1/hr

time on stream = 24.0 hrs

CO<sub>2</sub> (g/g cat/hr) = 0.056CO<sub>2</sub> (% of CO) = 0.3

O/P = 5.93

E<sub>a</sub> = 36.0 kcal/mol

CO conversion (%)	6.0
rate (g CH <sub>2</sub> /g cat/hr)	0.39
alpha	0.68
C1 (wt%)	23.3
C2 - C4 (wt%)	25.8
C5 - C12 (wt%)	46.2
C13 + (wt%)	4.6

### Performance of Co.049

Dates: 04/28/94 - 04/29/94 Run #2

flow rate = 90.0 cc/min, loading = 0.02 g, WHSV = 14.7 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	0.5	2.5	5.0	8.0	21.0	24.0
reaction temperature, °C	220	220	220	220	220	220
pressure, atm	1.0	1.0	1.0	1.0	1.0	1.0
flow, cc/min	90.0	90.0	90.0	90.0	90.0	90.0

#### C1 - C15 product distribution, weight %

C1	23.70	24.24	23.33	24.92	21.93	23.46
C2	4.24	4.22	4.53	4.32	4.31	4.57
C3	12.32	11.98	11.40	11.57	9.98	10.44
C4	12.84	12.47	11.99	11.91	10.46	10.90
C5	11.80	11.65	11.49	11.27	11.57	11.06
C6	8.88	8.85	9.10	8.71	9.44	9.59
C7	7.51	7.59	7.74	7.55	8.29	7.74
C8	5.48	5.60	5.86	5.71	6.48	5.99
C9	3.92	4.03	4.26	4.19	4.89	4.50
C10	2.96	3.10	3.32	3.23	3.90	3.58
C11	2.22	2.16	2.45	2.30	2.95	2.69
C12	1.61	1.65	1.82	1.67	2.29	2.25
C13	1.13	1.14	1.24	1.13	1.56	1.47
C14	0.81	0.76	0.86	0.93	1.11	1.06
C15	0.58	0.55	0.61	0.59	0.85	0.68
alpha chain growth probability	0.66	0.66	0.67	0.66	0.69	0.68

#### C1 - C50 estimated total product distribution, weight %

C1	23.4	24.0	23.1	24.6	21.5	23.3
C2 - C4	29.0	28.3	27.6	27.5	24.3	25.8
C5 - C12	43.8	44.0	45.2	44.0	48.4	46.2
C13 - C50	3.8	3.7	4.0	4.0	5.8	4.6

CO conversion, %	7.6	7.3	6.7	6.2	6.1	6.0
rate, g CH <sub>2</sub> /g cat/hr	0.49	0.47	0.43	0.40	0.39	0.39
CO <sub>2</sub> formation, %	0.3	0.2	0.3	0.3	0.3	0.3

## Performance of Co.049

Dates: 04/28/94 - 04/29/94    Run #2

flow rate = 90.0 cc/min, loading = ± 0.2 g, WHSV = 14.7 1/hr, H<sub>2</sub>/CO ratio in feed = 2

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time on stream, hr	26.0	28.0	30.0	32.0
reaction temperature, °C	220	220	220	210
pressure, atm	1.0	1.0	1.0	1.0
flow, cc/min	90.0	6.0	6.0	6.0

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### C1 - C15 product distribution, weight %

C1	24.21	31.93	29.76	18.81
C2	4.16	5.56	4.49	3.09
C3	10.51	9.95	10.74	7.42
C4	10.88	11.67	10.30	9.31
C5	10.93	10.47	10.89	10.17
C6	9.13	7.33	6.99	9.15
C7	7.13	7.11	7.74	8.66
C8	6.75	4.87	5.44	7.32
C9	4.56	3.34	4.02	6.23
C10	3.62	2.54	3.02	5.14
C11	2.79	1.87	2.40	4.26
C12	2.13	1.36	1.59	3.46
C13	1.39	0.86	1.19	2.82
C14	1.09	0.67	0.81	2.29
C15	0.72	0.47	0.63	1.87
alpha chain growth probability	0.69	0.65	0.67	0.76

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### C1 - C50 estimated total product distribution, weight %

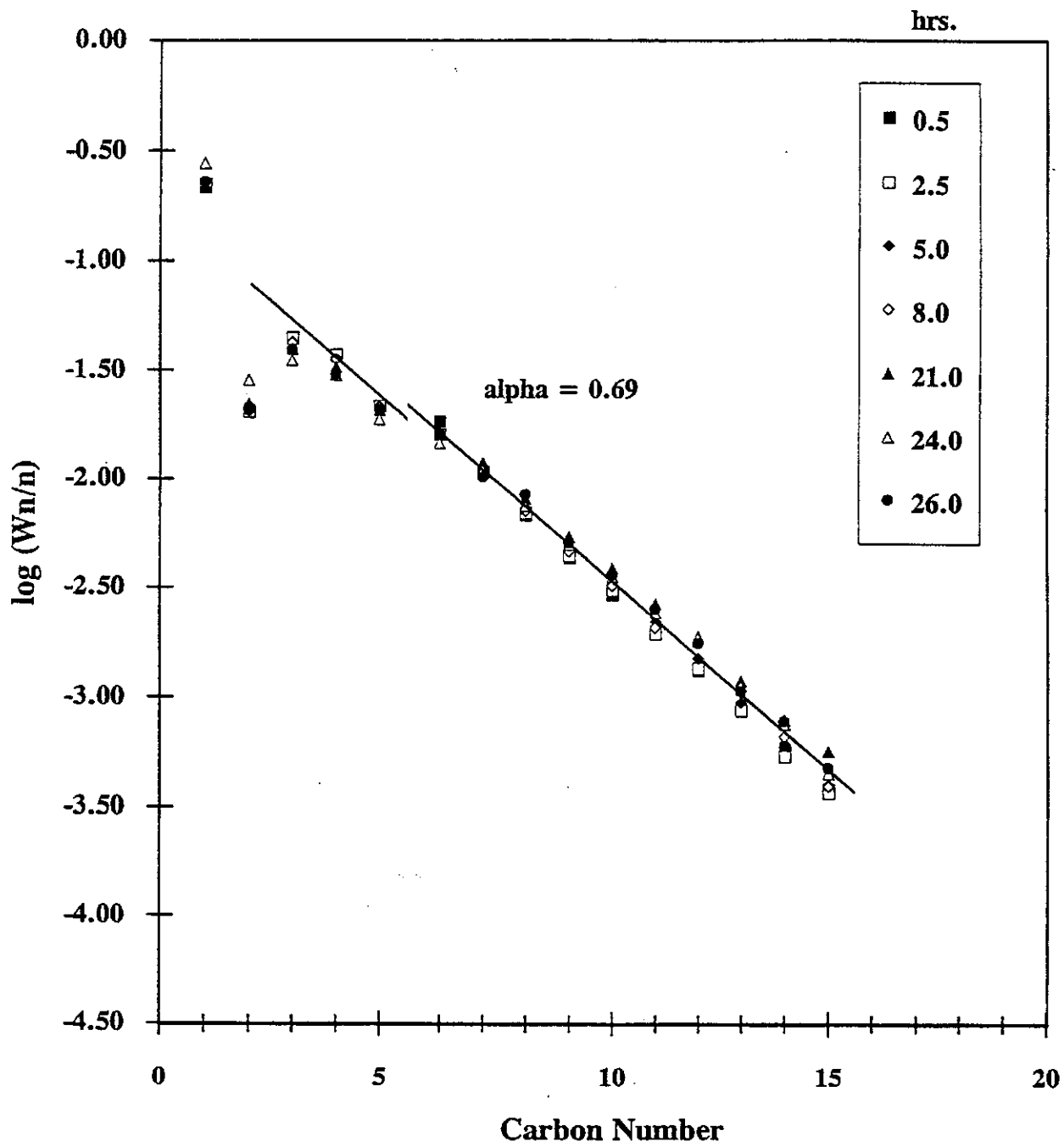
C1	24.0	31.6	29.3	17.5
C2 - C4	25.3	26.9	25.1	18.4
C5 - C12	45.8	38.5	41.4	50.5
C13 - C50	4.9	3.1	4.2	13.5

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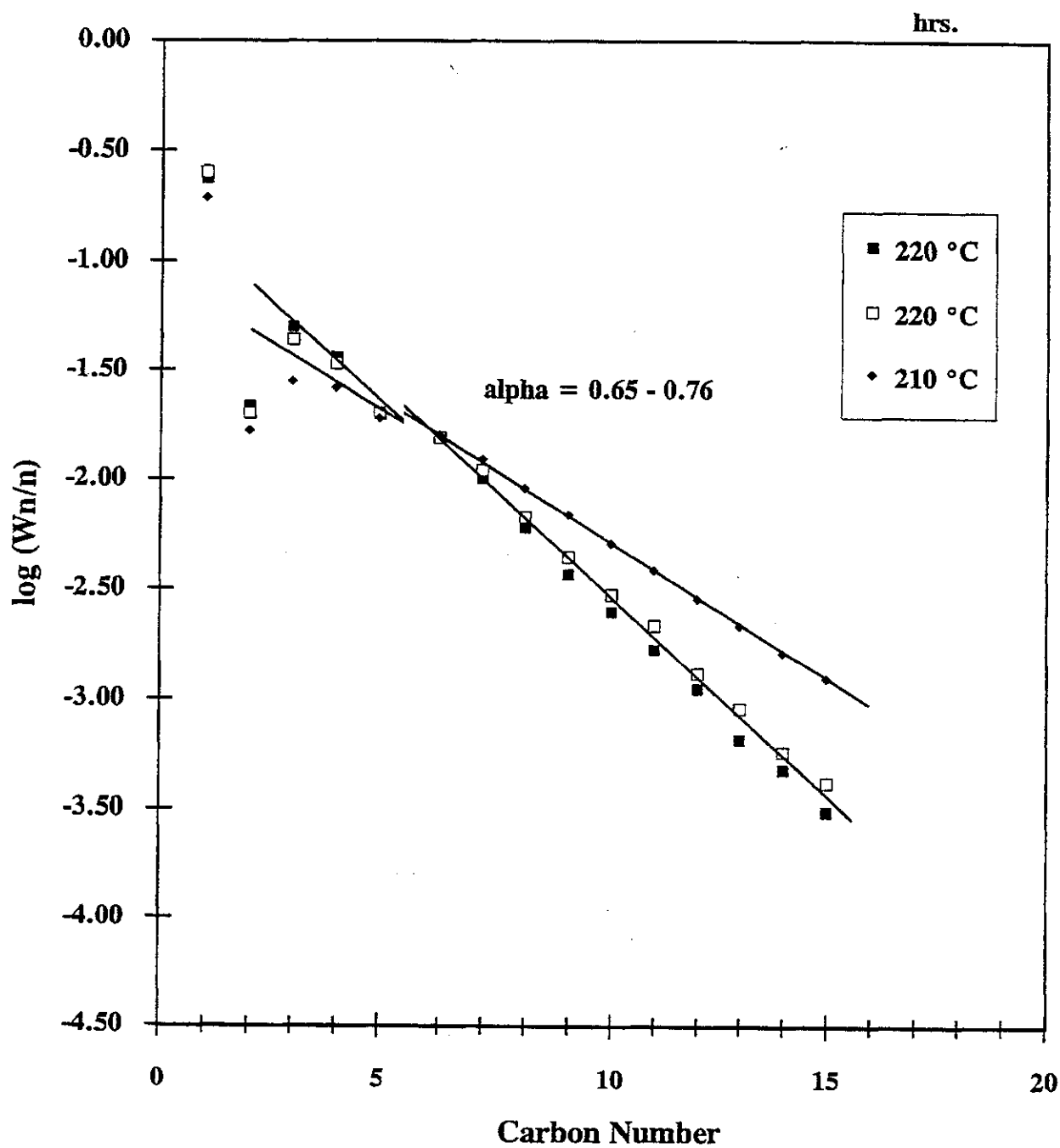
CO conversion, %	5.9	107.0	102.1	50.5
rate, g CH <sub>2</sub> /g cat/hr	0.38	0.46	0.44	0.22
CO <sub>2</sub> formation, %	0.3	11.5	10.1	6.3

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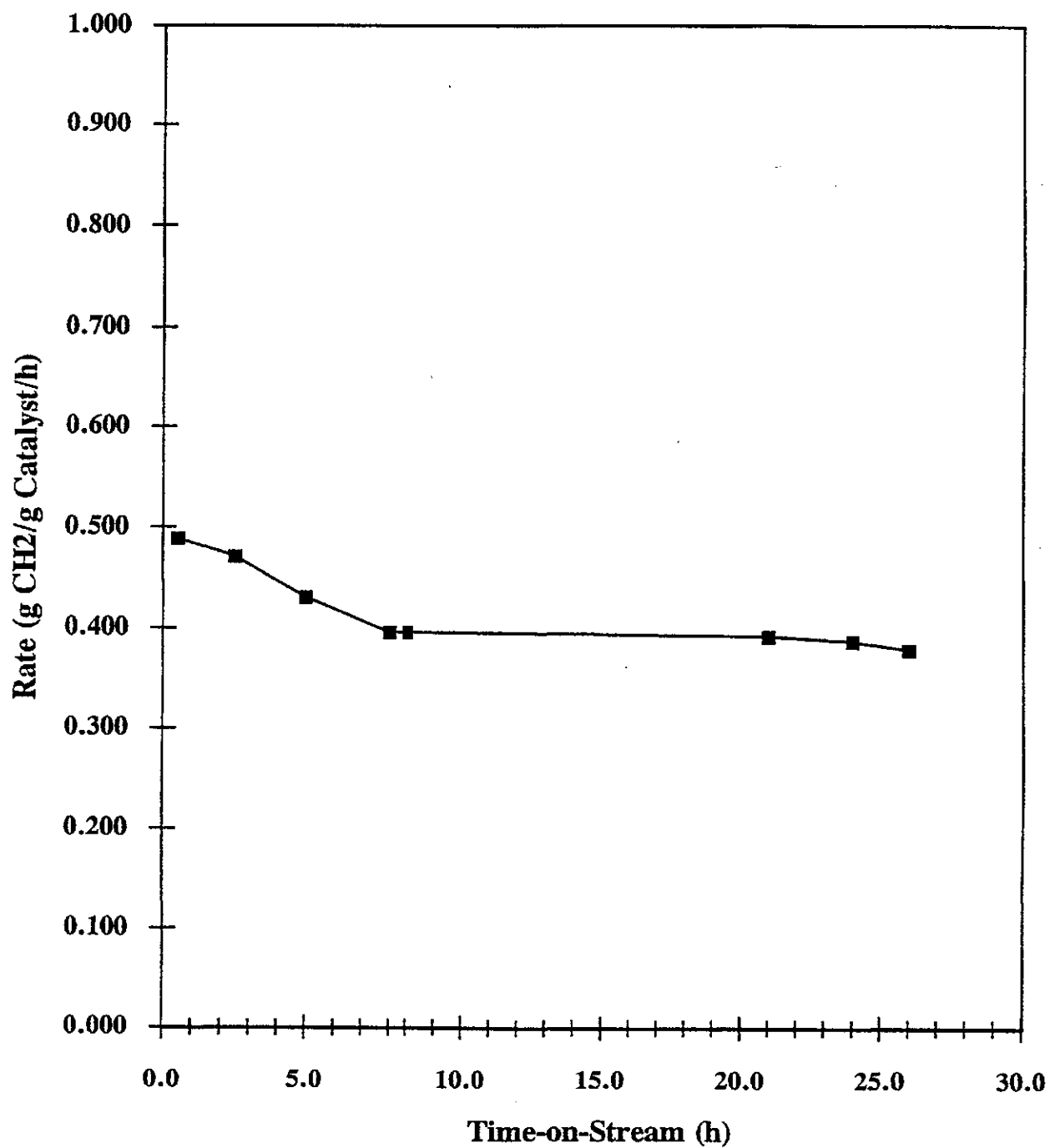
Schulz-Flory Plot for Co.049 - Run #2  
Time on Stream (hrs)



Schulz-Flory Plot for Co.049 - Run #2  
High Conversion Study at Different Temperature



## Time-on-Stream Plot for Co.049 - Run #2



## (Co.049 - Run #3

Co wt%	NM wt %%	Promotor wt%		Support
20	Ru 0.500	K 0.10		Al2O3

## SUMMARY REACTION DATA

## Reaction Conditions:

P = 1.0 atm  
 T = 220 °C  
 H<sub>2</sub>/CO = 2  
 weight of catalyst = 0.184 g  
 WHSV = 133.96 1/hr  
 time on stream = 28.0 hrs

CO<sub>2</sub> (g/g cat/hr) = 0.059  
 CO<sub>2</sub> (% of CO) = 0.3  
 O/P = 4.73

E<sub>a</sub> = 30.9 kcal/mol

CO conversion (%)	6.7
rate (g CH <sub>2</sub> /g cat/hr)	0.41
alpha	0.69
C1 (wt%)	25.2
C2 - C4 (wt%)	26.6
C5 - C12 (wt%)	44.0
C13 + (wt%)	4.2

### ] Performance of Co.049

Dates: 05/02/94 - 05/03/94    Run #3

flow rate = 90.0 cc/min, loading = 0.2 g, WHSV = 14.0 1/hr, H<sub>2</sub>/CO ratio in feed = 2

time on stream, hr	0.5	2.5	5.5	8.5	23.0	25.0
reaction temperature, °C	220	220	220	220	220	220
pressure, atm	1.0	1.0	1.0	1.0	1.0	1.0
flow, cc/min	90.0	90.0	90.0	90.0	90.0	90.0

#### C1 - C15 product distribution, weight %

C1	26.40	26.19	25.72	26.40	24.74	24.57
C2	5.06	5.12	4.94	4.91	4.65	4.36
C3	12.93	12.73	12.27	12.04	11.00	10.90
C4	12.96	12.76	12.38	12.21	11.37	11.30
C5	11.57	11.41	11.29	11.26	11.07	11.06
C6	8.81	8.57	8.52	8.34	8.95	8.85
C7	7.05	7.15	7.35	7.25	7.74	7.80
C8	4.84	5.03	5.28	5.28	5.85	5.92
C9	3.34	3.47	3.86	3.82	4.36	4.37
C10	2.42	2.59	2.75	2.80	3.33	3.45
C11	1.72	1.89	2.08	2.04	2.43	2.53
C12	1.12	1.29	1.42	1.50	1.86	1.95
C13	0.84	0.78	0.93	0.98	1.14	1.29
C14	0.52	0.63	0.71	0.71	0.89	1.02
C15	0.40	0.39	0.49	0.46	0.61	0.63
alpha    chain growth probability	0.64	0.64	0.65	0.65	0.67	0.67

#### C1 - C50 estimated total product distribution, weight %

C1	26.1	26.0	25.5	26.2	24.5	24.4
C2 - C4	30.6	30.4	29.3	28.9	26.7	26.3
C5 - C12	40.6	40.9	42.0	41.8	44.7	45.0
C13 - C50	2.6	2.6	3.2	3.1	4.1	4.2

CO conversion, %	10.8	9.4	8.6	8.7	6.8	6.9
rate, g CH <sub>2</sub> /g cat/hr	0.66	0.57	0.53	0.53	0.42	0.42
CO <sub>2</sub> formation, %	0.4	0.3	0.3	0.3	0.3	0.3



### Performance of Co.049

Dates: 05/02/94 - 05/03/94 Run #3

flow rate = 90.0 cc/min, loading = 0.2 g, WHSV = 14.0 1/hr, H<sub>2</sub>/CO ratio in feed = 2

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time on stream, hr	28.0	30.0	32.0	34.0
reaction temperature, °C	220	220	220	210
pressure, atm	1.0	1.0	1.0	1.0
flow, cc/min	90.0	15.0	15.0	15.0

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#### C1 - C15 product distribution, weight %

C1	25.32	25.68	26.75	18.23
C2	4.40	4.63	4.29	3.07
C3	11.06	10.00	9.90	7.83
C4	11.19	11.60	11.33	9.26
C5	10.92	11.01	10.84	10.35
C6	8.66	8.60	8.66	9.69
C7	7.68	7.86	7.81	8.77
C8	5.80	5.93	5.74	7.28
C9	4.26	4.45	4.31	6.03
C10	3.38	3.15	3.32	5.12
C11	2.45	2.41	2.47	4.25
C12	1.93	1.79	1.70	3.40
C13	1.36	1.24	1.29	2.78
C14	0.98	0.99	0.98	2.27
C15	0.61	0.66	0.62	1.69
alpha chain growth probability	0.69	0.68	0.67	0.75

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#### C1 - C50 estimated total product distribution, weight %

C1	25.2	25.3	26.5	17.3
C2 - C4	26.6	25.8	25.3	19.1
C5 - C12	44.0	44.4	44.1	51.5
C13 - C50	4.2	4.4	4.2	12.1

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CO conversion, %	6.7	44.6	44.9	24.5
rate, g CH <sub>2</sub> /g cat/hr	0.41	0.45	0.46	0.25
CO <sub>2</sub> formation, %	0.3	3.8	3.6	2.2

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