APPENDIX A

CHEMISORPTION RESULTS

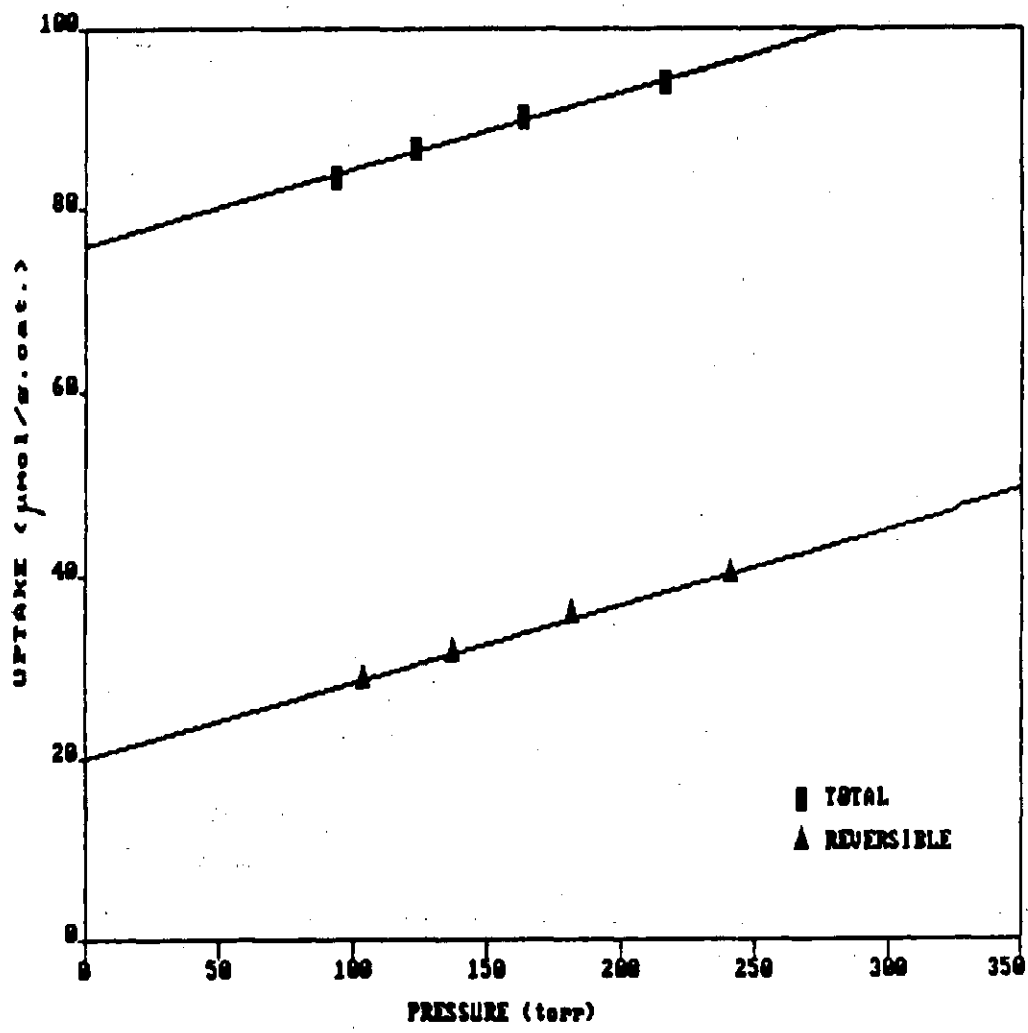

Figure A-1 Hydrogen Adsorption Isotherms on RuHY at 298 K (Decomposed under Vacuum)

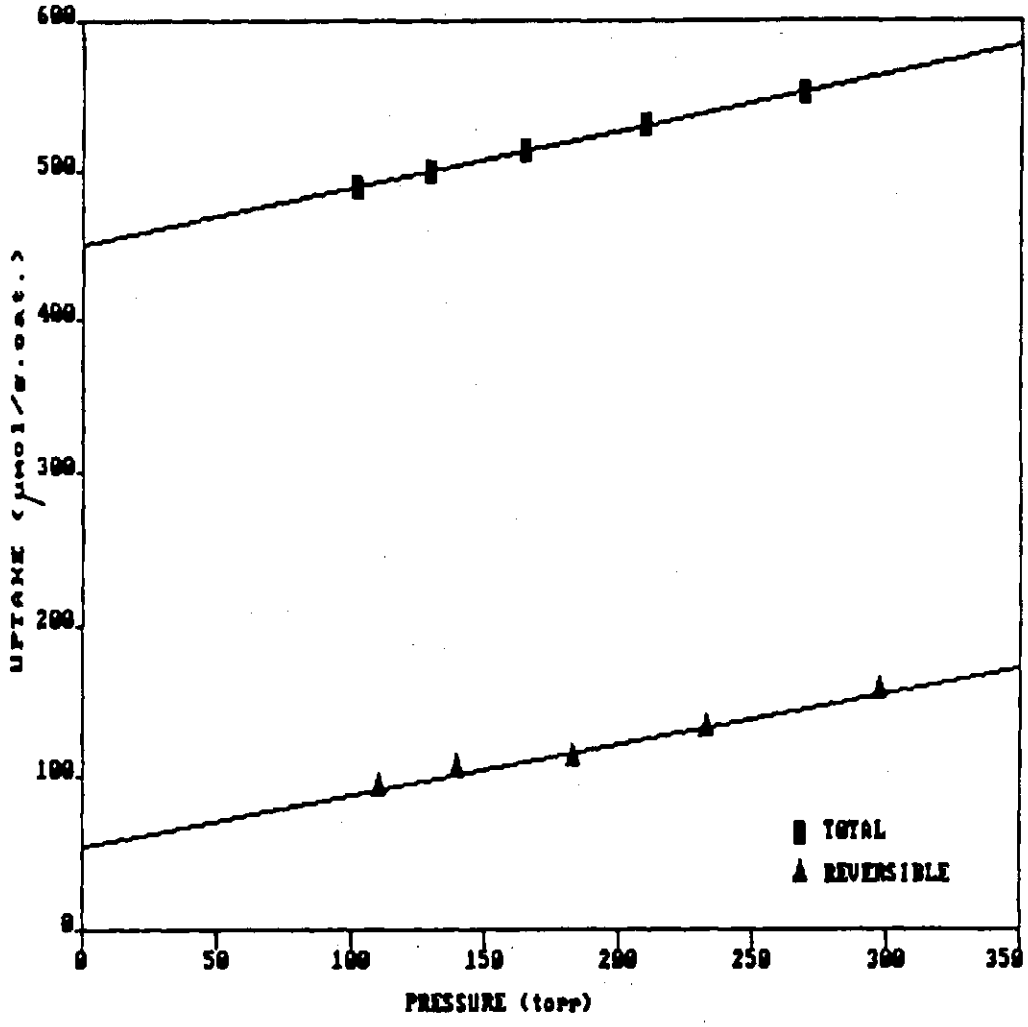

Figure A-2 CO Adsorption Isotherms on RuHY at 298 K (Decomposed under Vacuum)

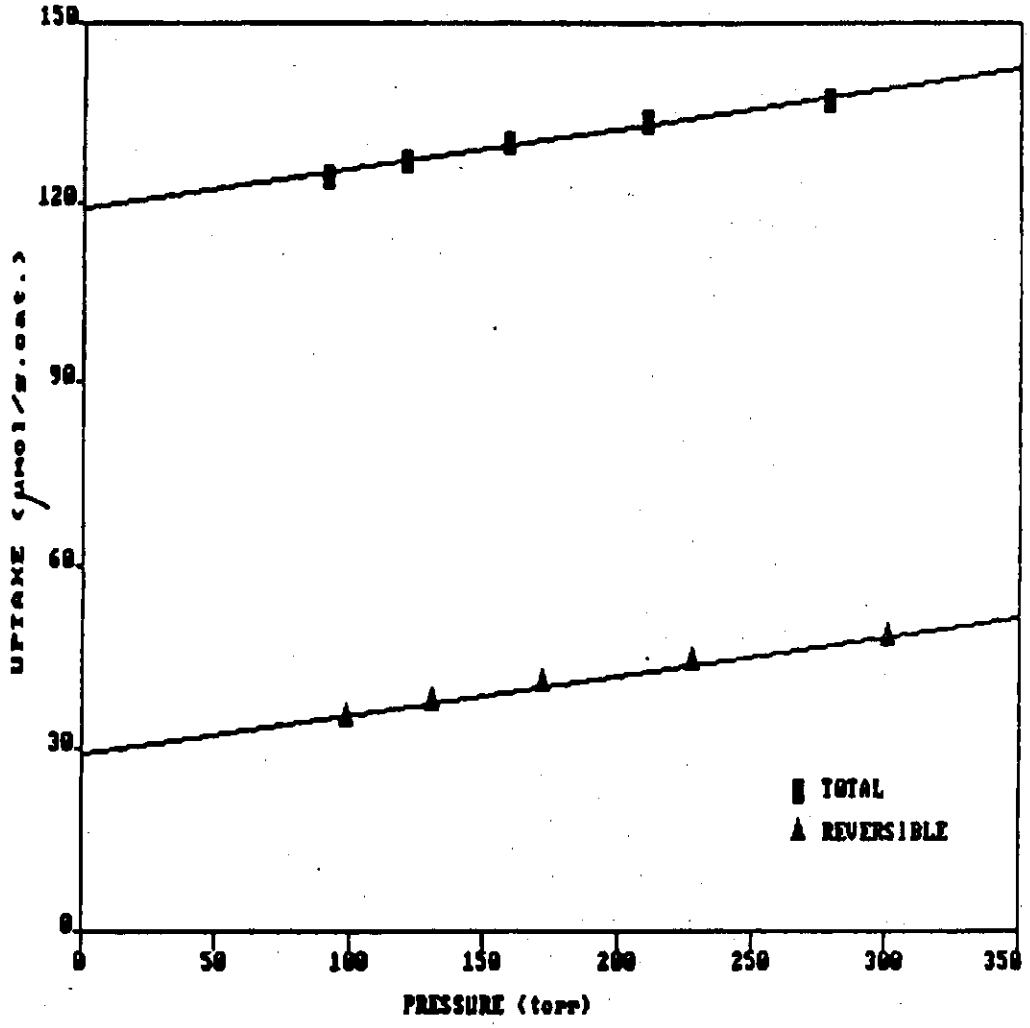

Figure A-3 Hydrogen Adsorption Isotherms on RuLiY at 298 K (Decomposed under Vacuum)

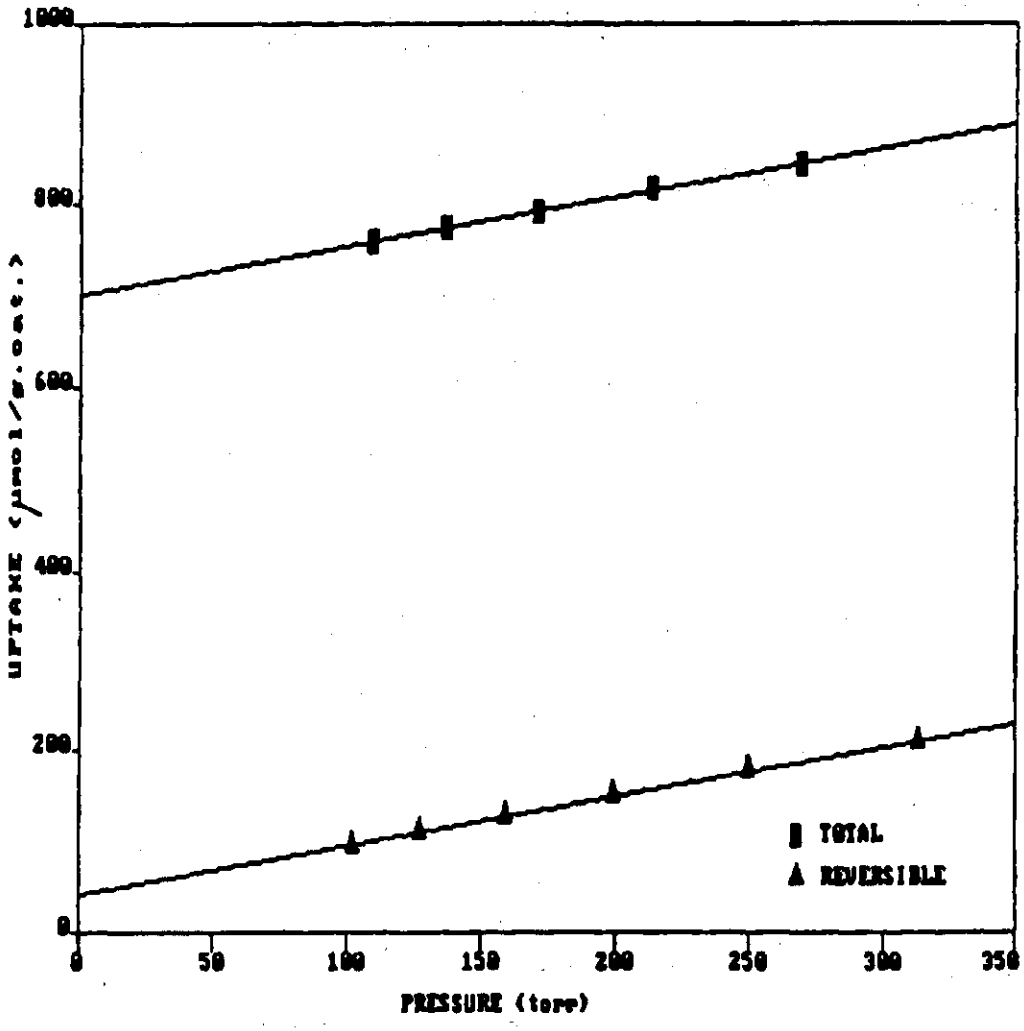

Figure A-4 CO Adsorption Isotherms on RuLiY at 298 K (Decomposed under Vacuum)

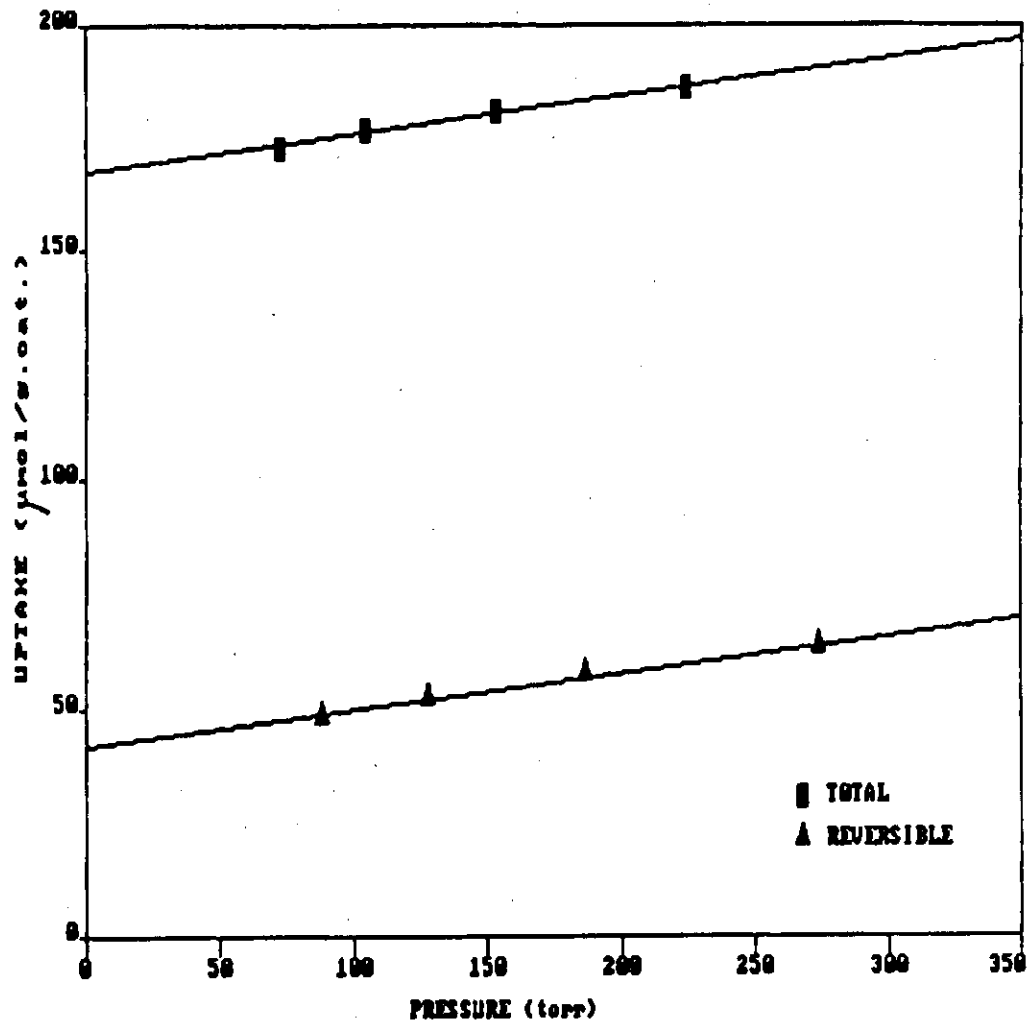

Figure A-5 Hydrogen Adsorption Isotherms on RuNaY at 298 K (Decomposed under Vacuum)

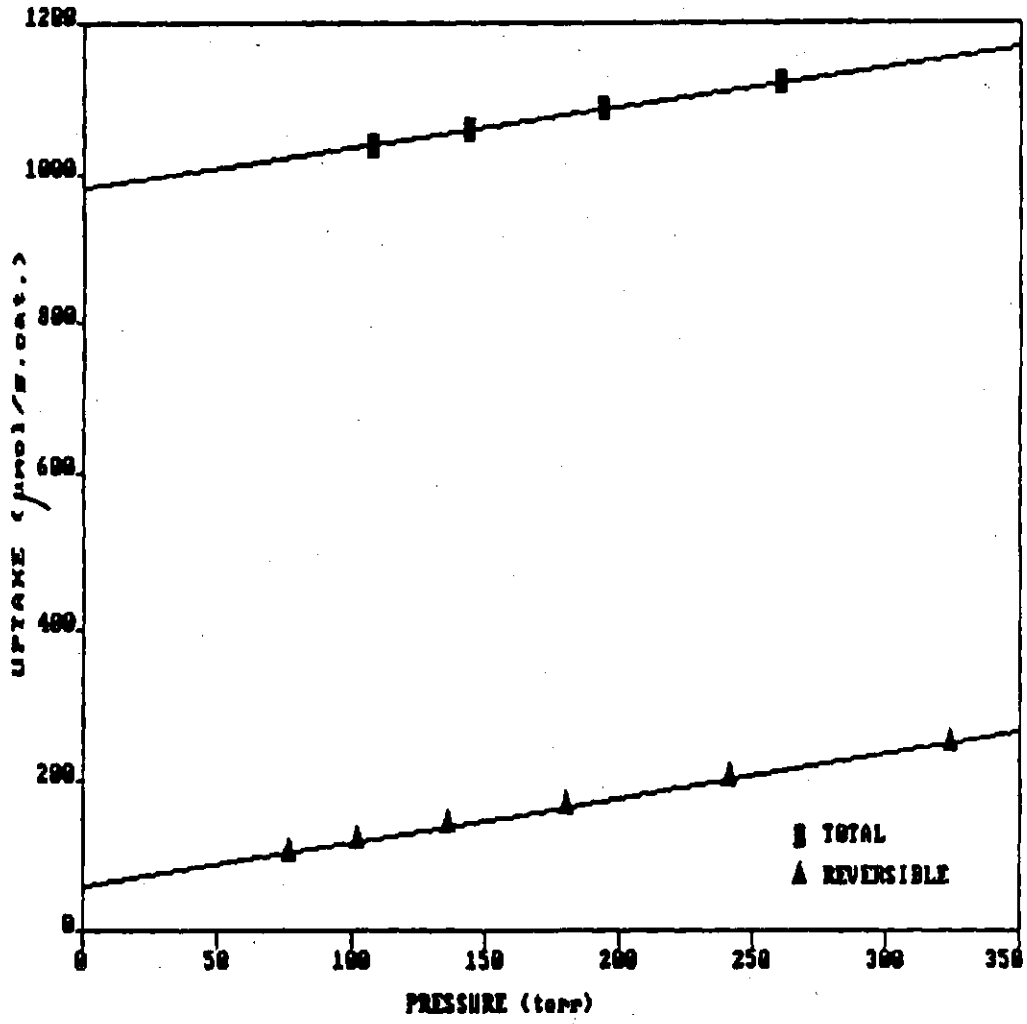

Figure A-6 CO Adsorption Isotherms on RuNaY at 298 K (Decomposed under Vacuum)

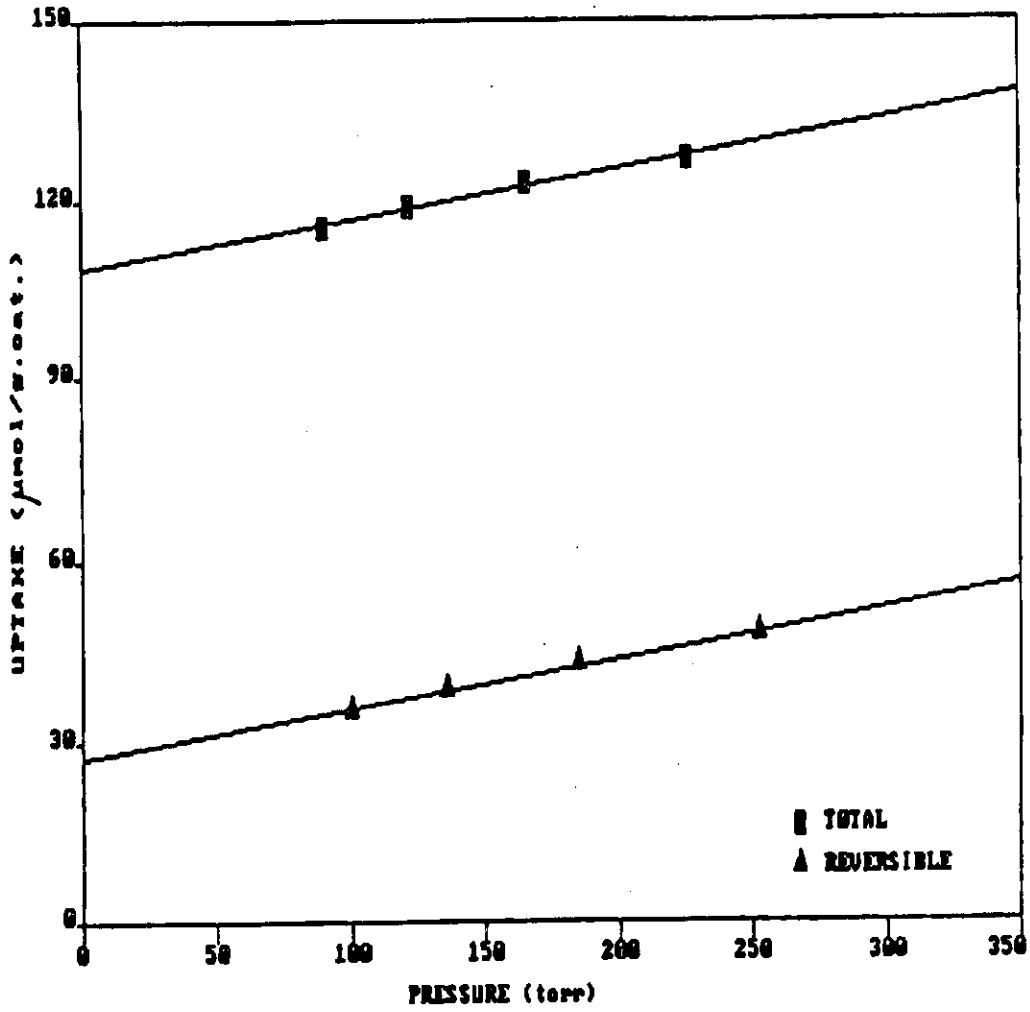

Figure A-7 Hydrogen Adsorption Isotherms on RuKY at 298 K (Decomposed under Vacuum)

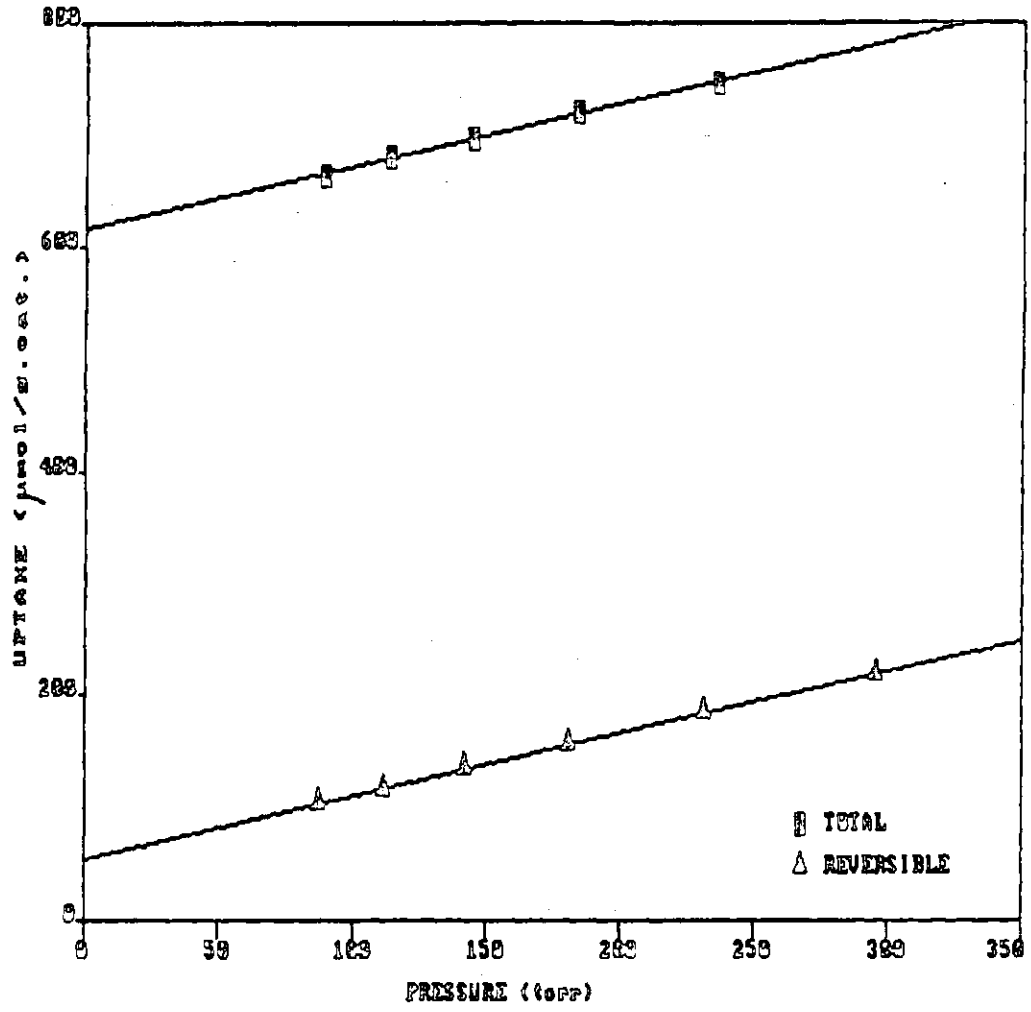

Figure A-8 CO Adsorption Isotherms on RuKY at 298 K (Decomposed under Vacuum)

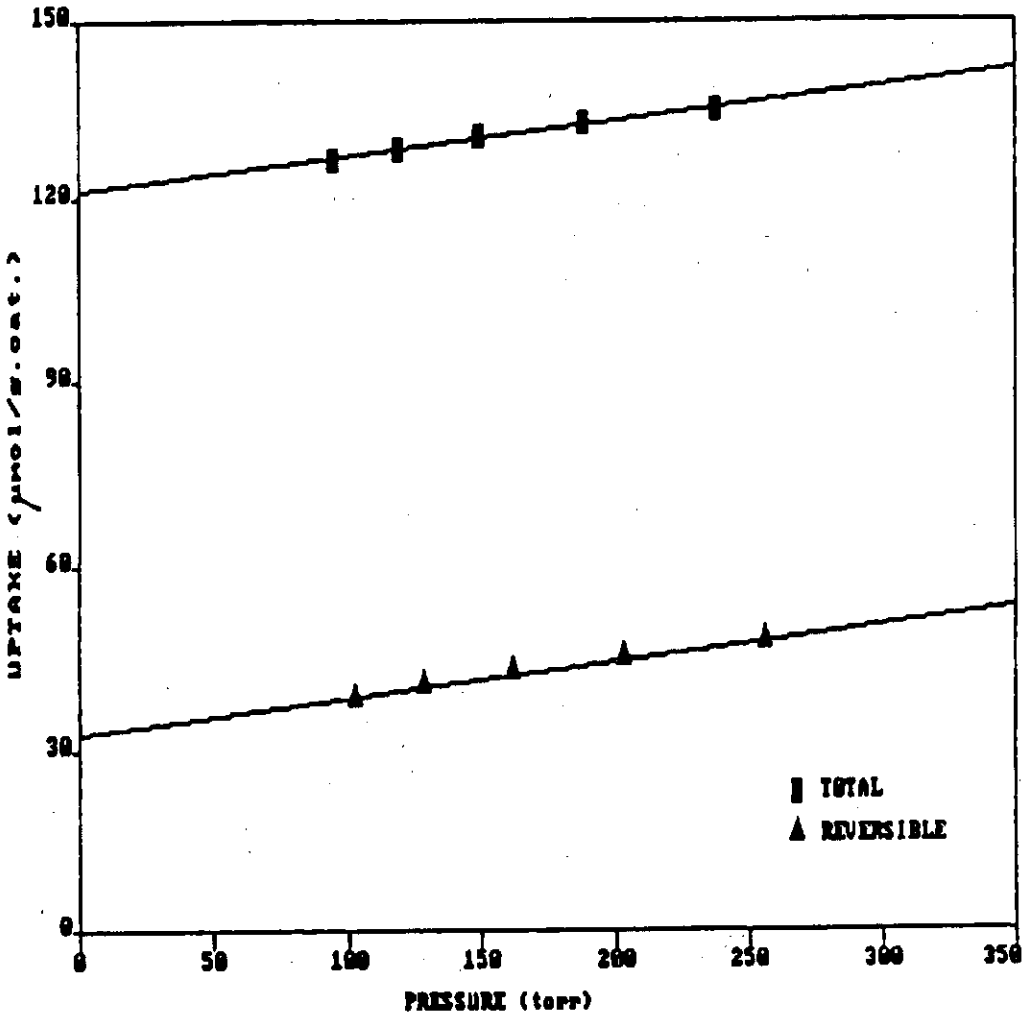

Figure A-9 Hydrogen Adsorption Isotherms on RuRbY at 298 K (Decomposed under Vacuum)

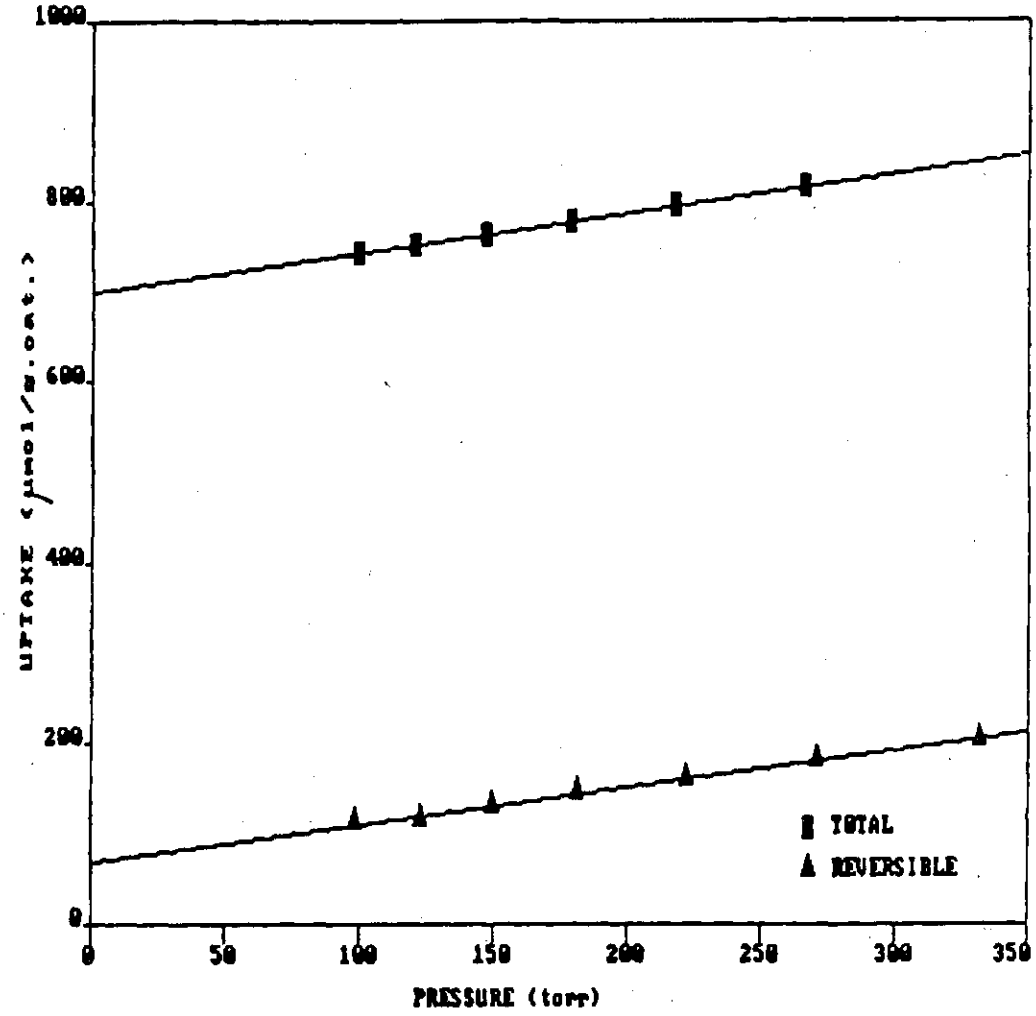

Figure A-10 CO Adsorption Isotherms on RuRbY at 298 K (Decomposed under Vacuum)

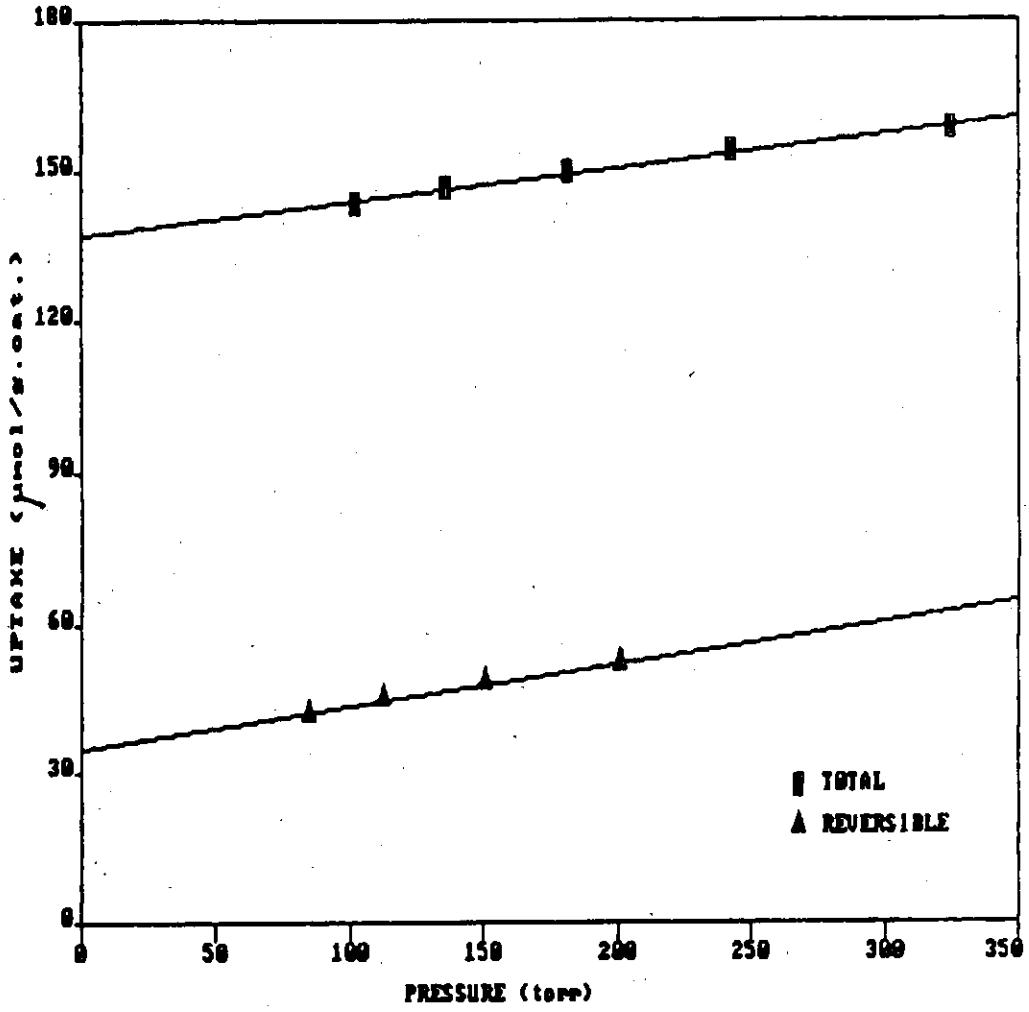

Figure A-11 Hydrogen Adsorption Isotherms on RuCsY at 298 K (Decomposed under Vacuum)

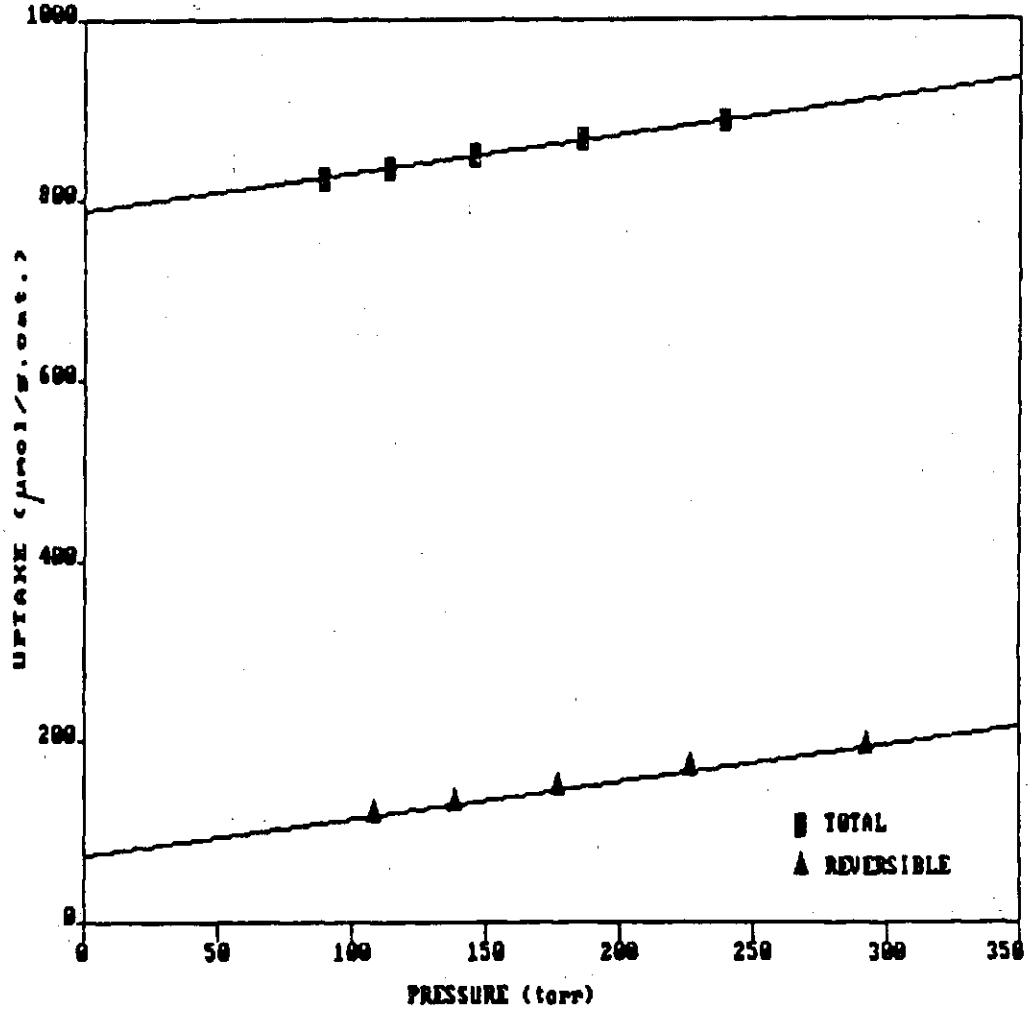

Figure A-12 CO Adsorption Isotherms on RuCsY at 298 K (Decomposed under Vacuum)

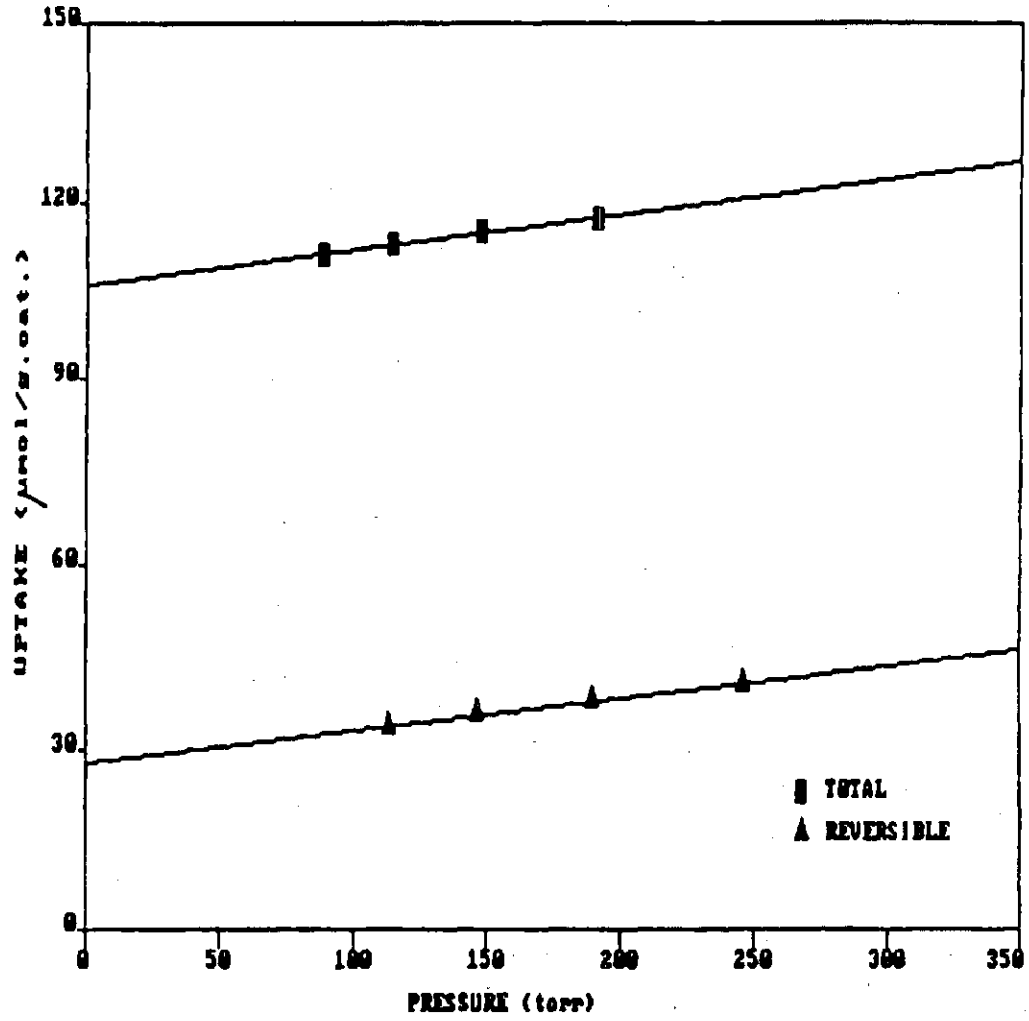

Figure A-13 Hydrogen Adsorption Isotherms on RuNaX at 298 K
(Decomposed under Vacuum)

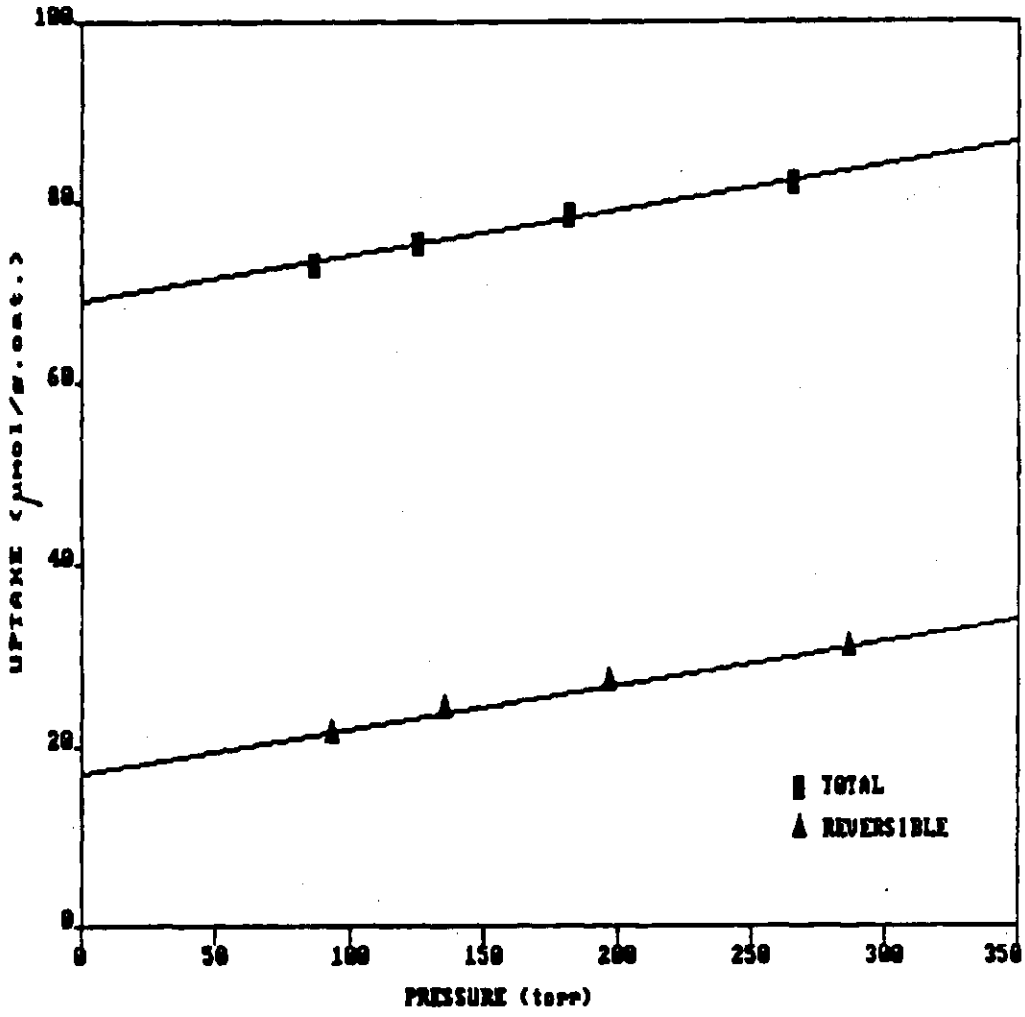

Figure A-14 Hydrogen Adsorption Isotherms on RuKL at 298 K (Decomposed under Vacuum)

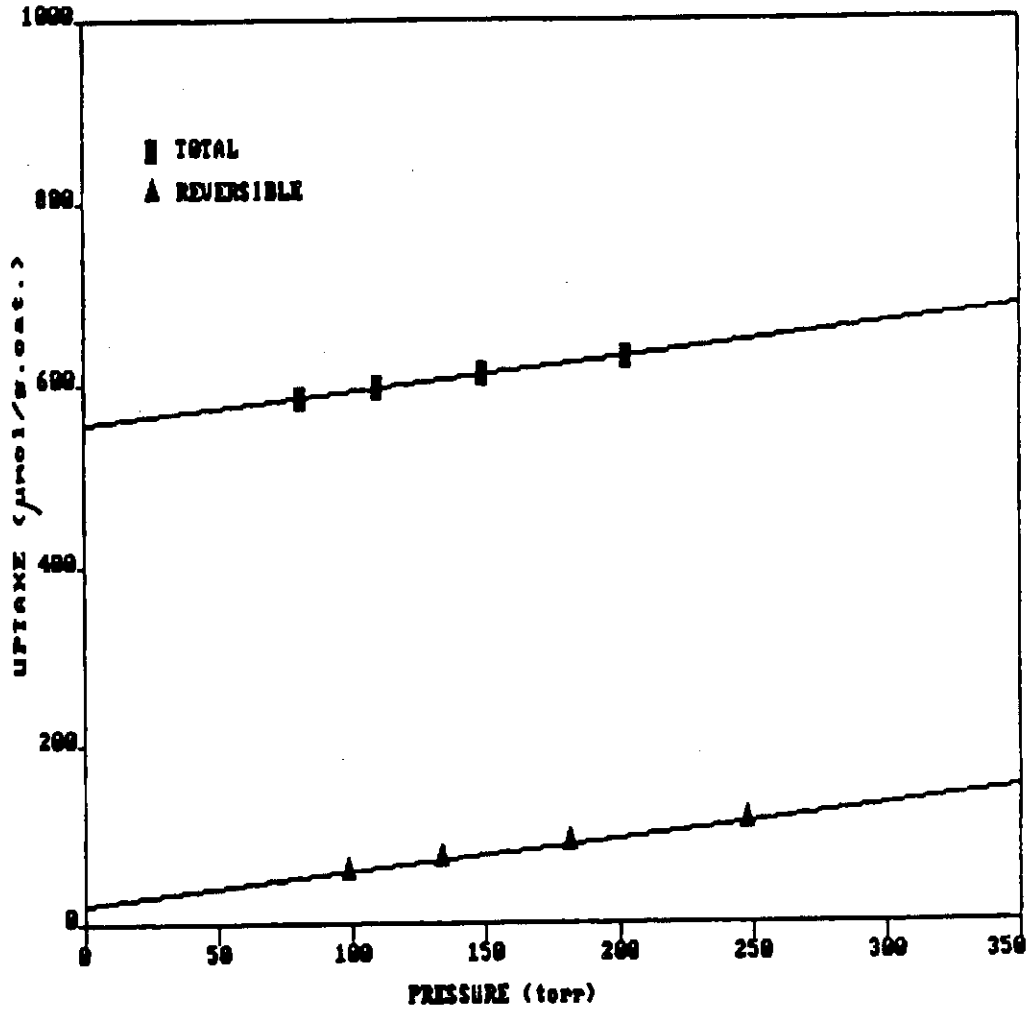

Figure A-15 CO Adsorption Isotherms on RuKL at 298 K
(Decomposed under Vacuum)

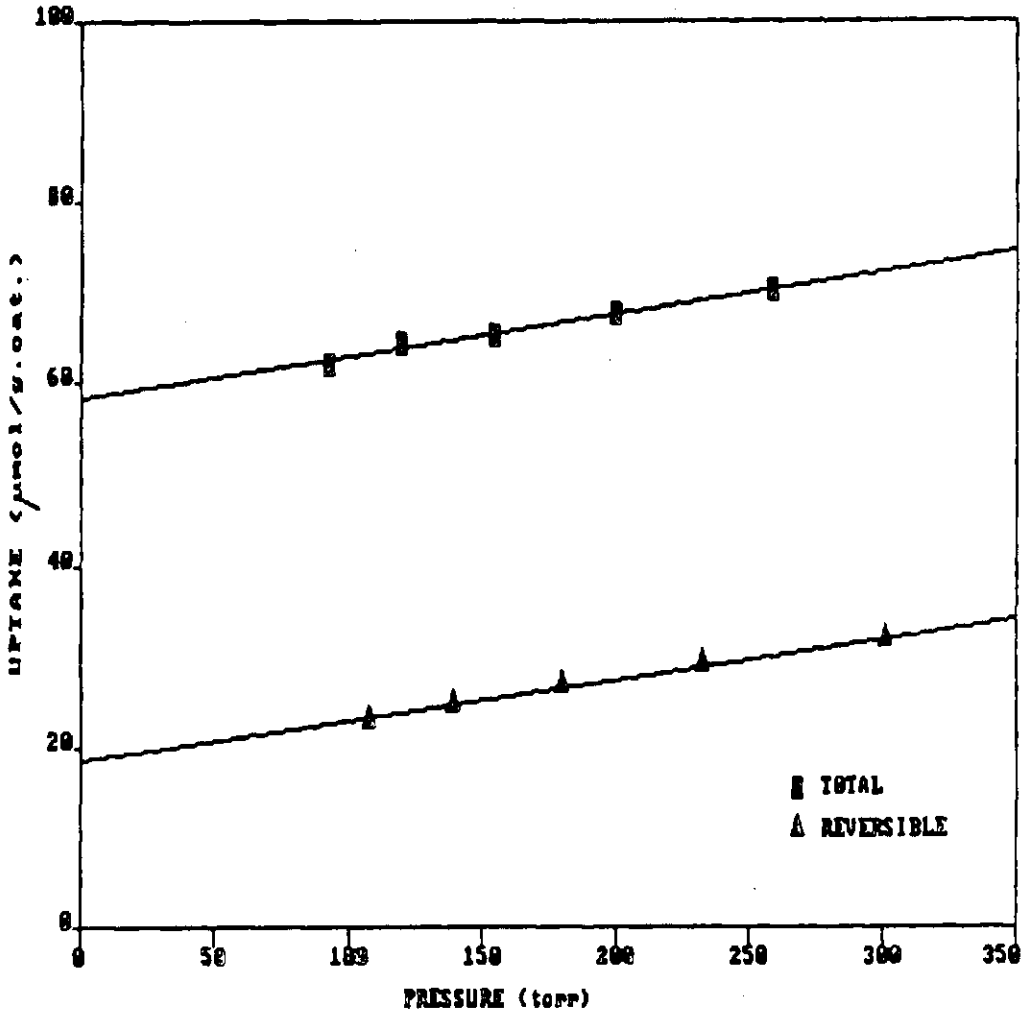

Figure A-16 Hydrogen Adsorption Isotherms on RuNa-Mordenite at 298 K (Decomposed under Vacuum)

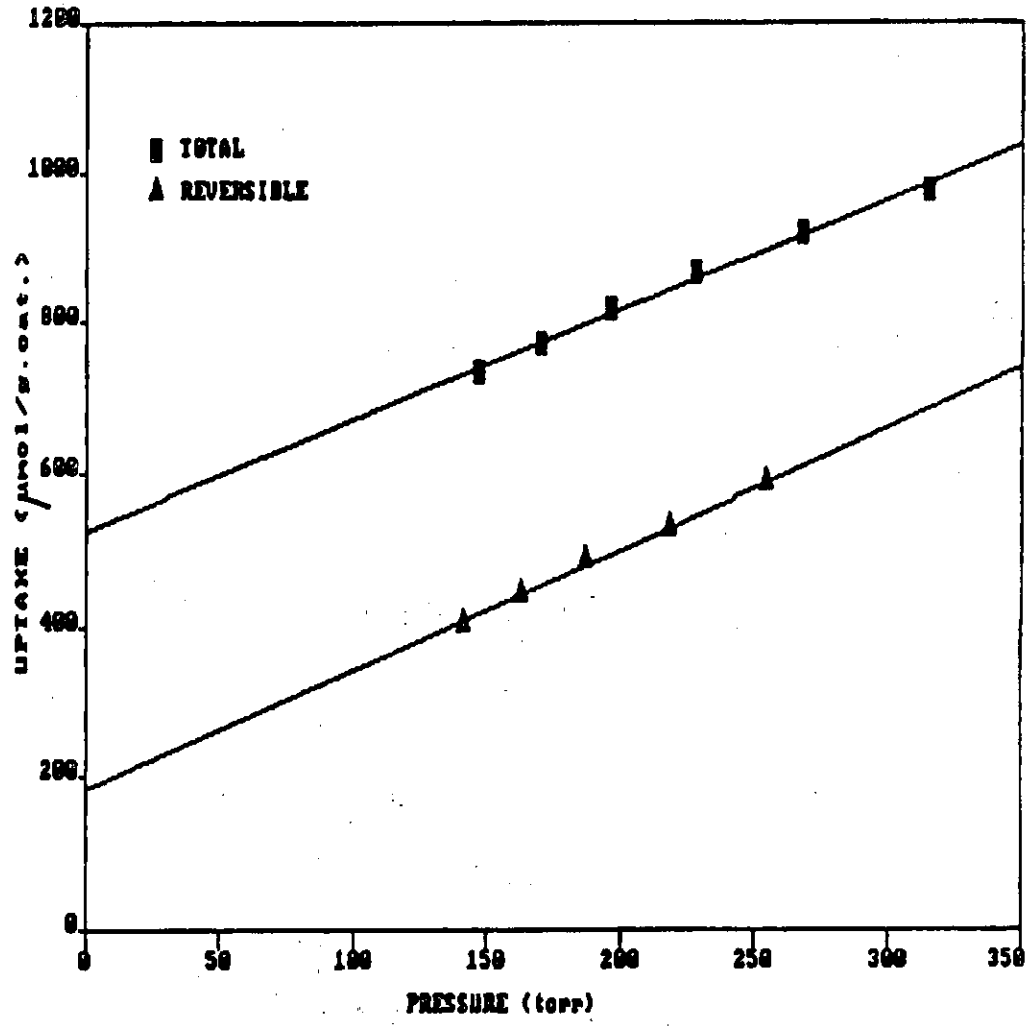

Figure A-17 CO Adsorption Isotherms on RuNa-Mordenite at 298 K (Decomposed under Vacuum)

Table A.1 Summary of Chemisorption Results(*)

Catalyst	Hydrogen Uptake (μmol/g.cat.)			CO Uptake (μmol/g.cat.)		
	Total	Revers.	Irrevers.	Total	Revers.	Irrever
RuHY	76	20	56	450	55	395
RuLiY	119	29	90	701	41	660
RuNaY	167	41	126	982	61	921
RuKY	108	27	81	616	54	562
RuRbY	121	33	88	701	69	632
RuCsY	137	35	102	788	75	713
RuNaX	106	27	79	-	-	-
RuKL	69	16	53	555	21	534
RuNa-Mord.	58	19	39	525	182	343

(*) Catalysts Decomposed Under Vacuum

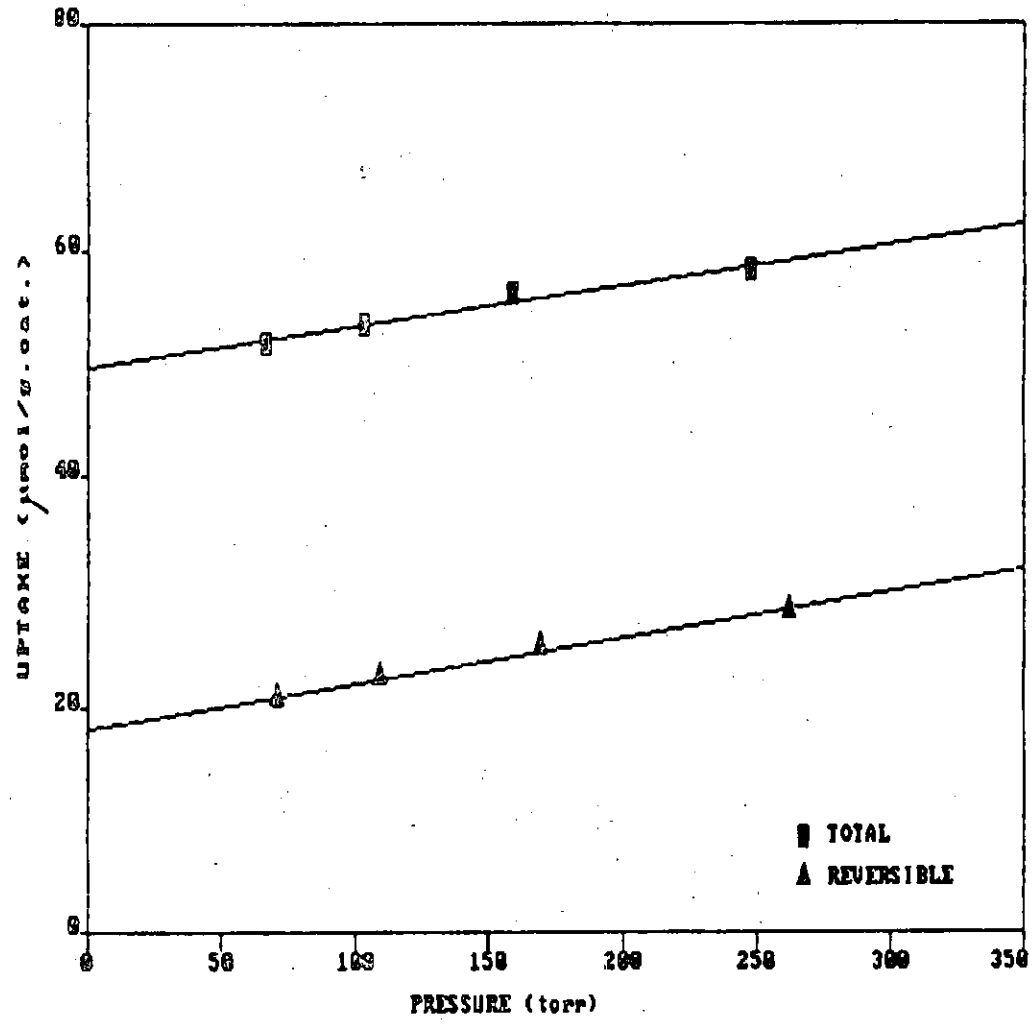

Figure A-18 Hydrogen Adsorption Isotherms on RuHY at 298 K (Decomposed in Flowing Helium)

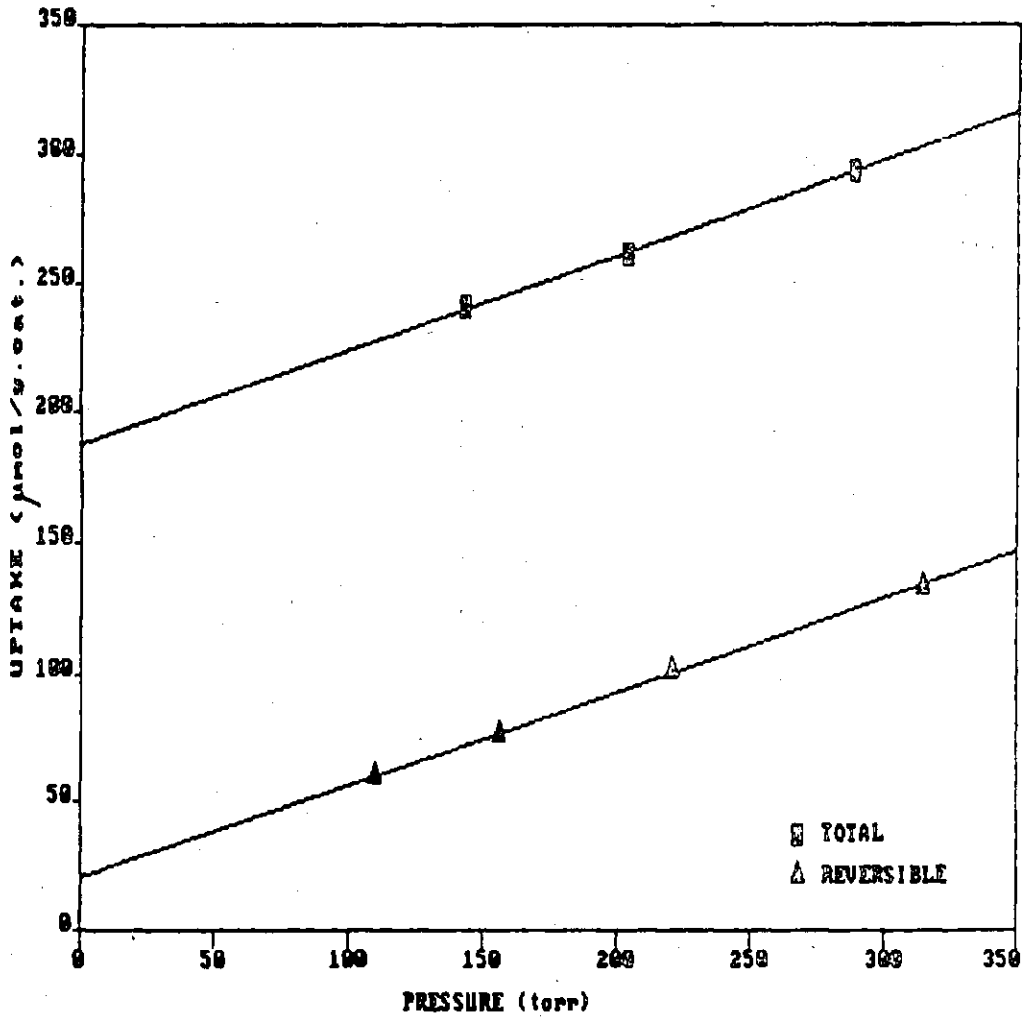

Figure A-19 CO Adsorption Isotherms on RuHY at 298 K (Decomposed in Flowing Helium)

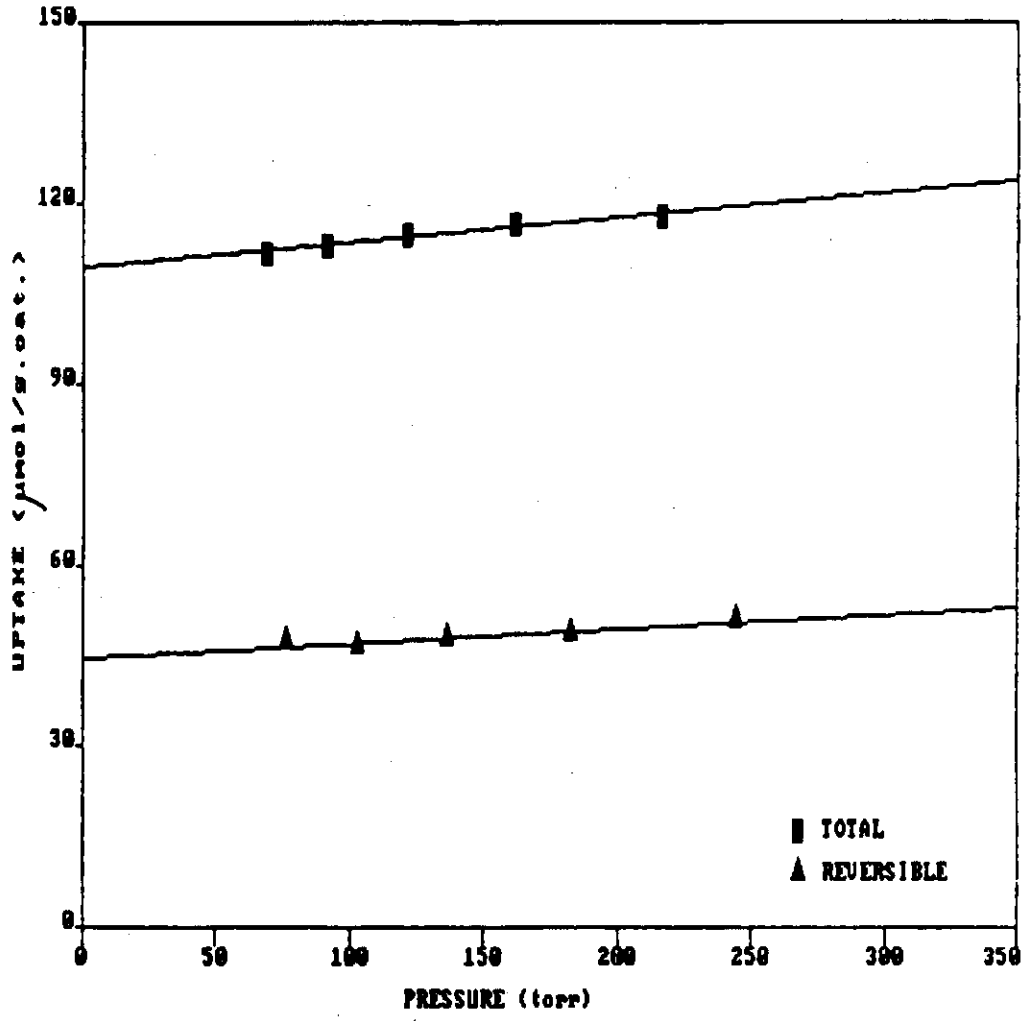

Figure A-20 Hydrogen Adsorption Isotherms on RuLiY at 298 K (Decomposed in Flowing Helium)

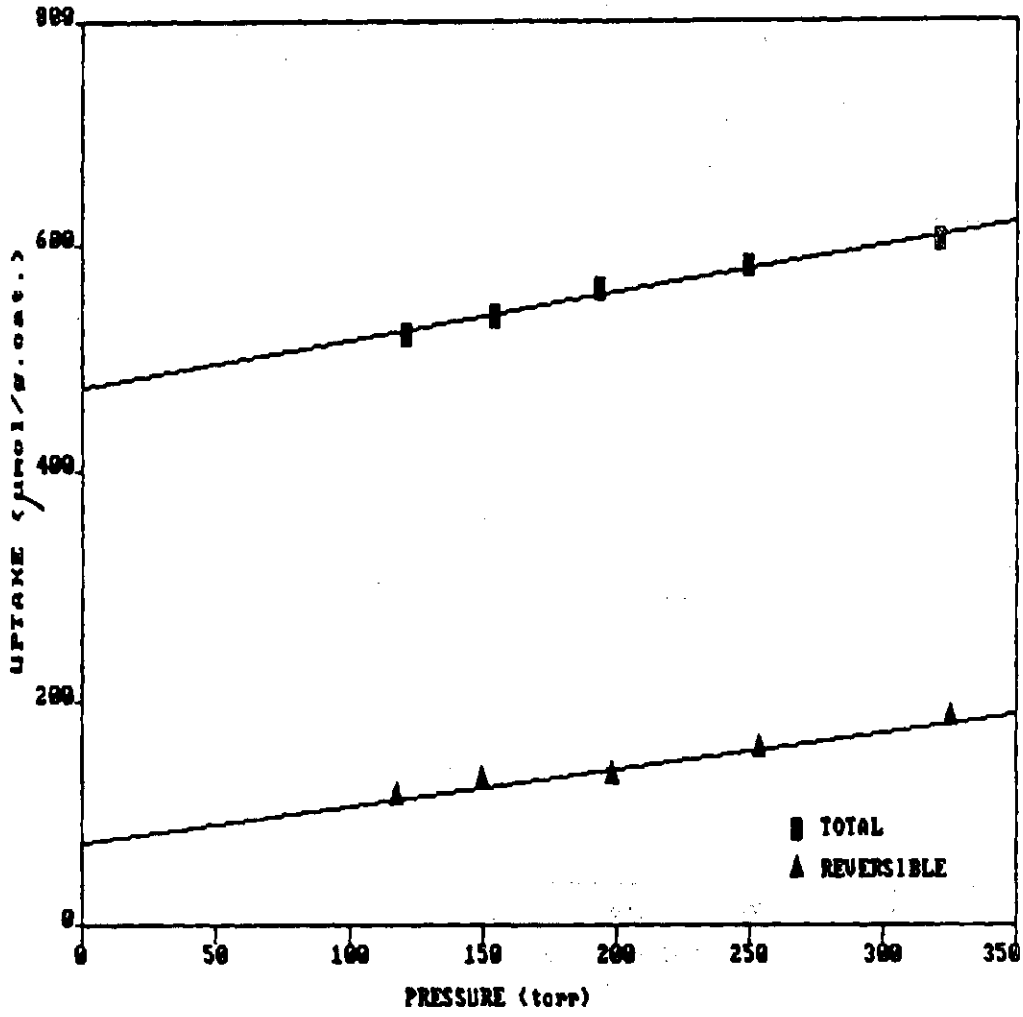

Figure A-21 CO Adsorption Isotherms on RuLiY at 298 K
(Decomposed in Flowing Helium)

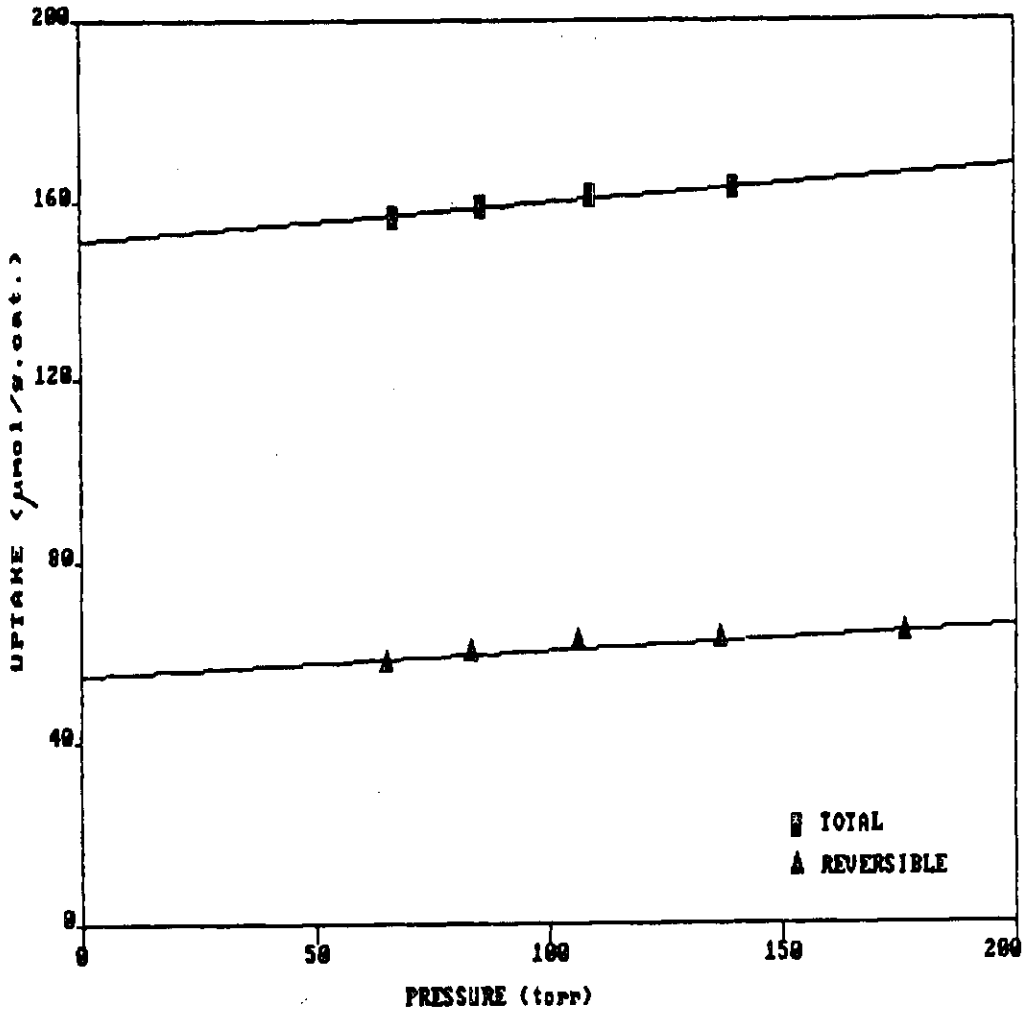

Figure A-22 Hydrogen Adsorption Isotherms on RuNaY at 298 K (Decomposed in Flowing Helium)

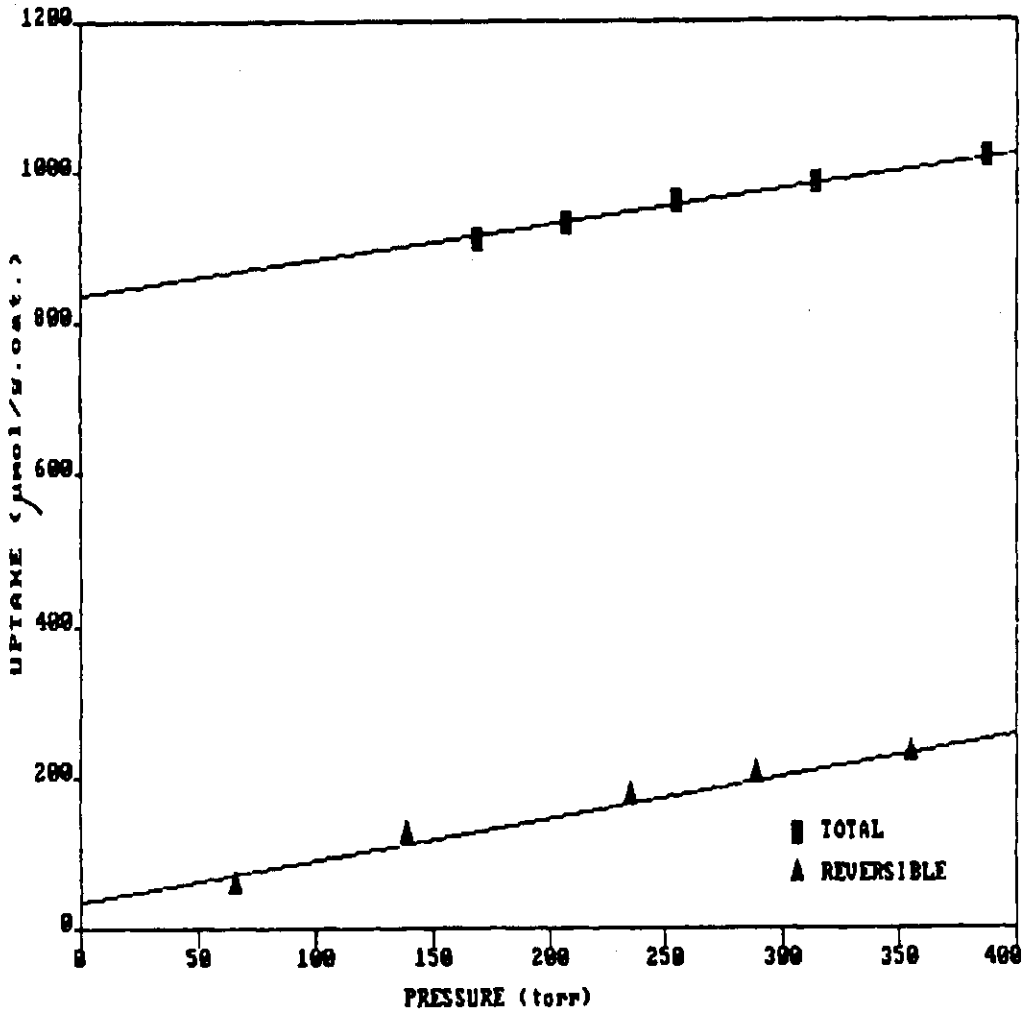

Figure A-23 CO Adsorption Isotherms on RuNaY at 298 K (Decomposed in Flowing Helium)

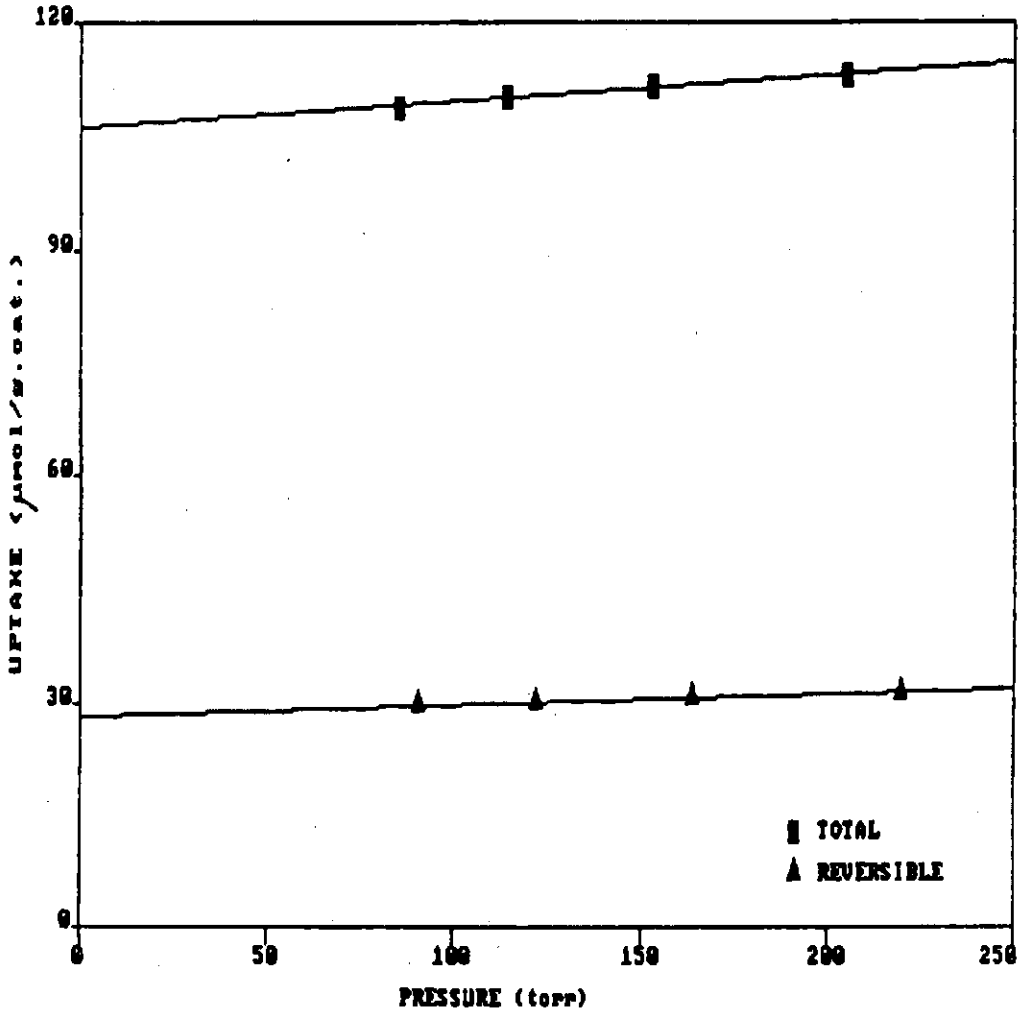

Figure A-24 Hydrogen Adsorption Isotherms on RuKY at 298 K (Decomposed in Flowing Helium)

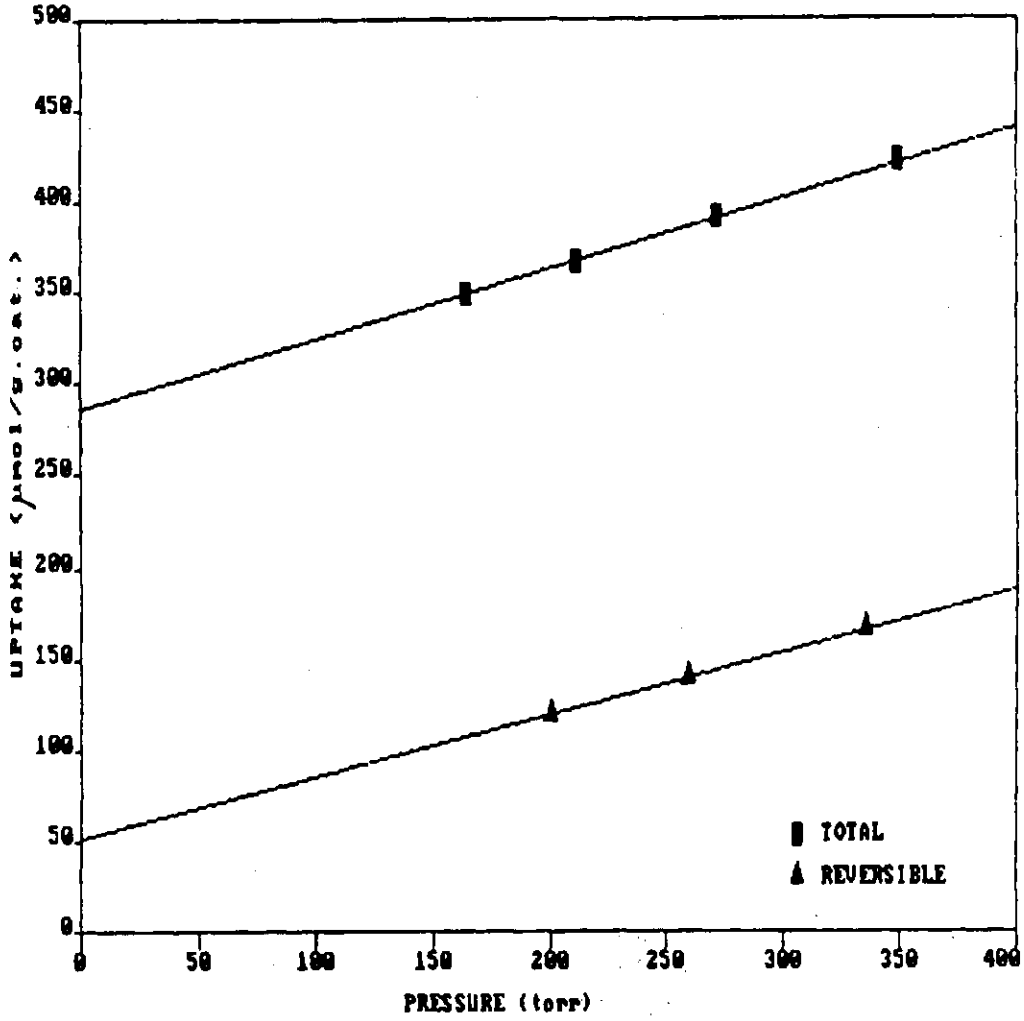

Figure A-25 CO Adsorption Isotherms on RuKY at 298 K (Decomposed in Flowing Helium)

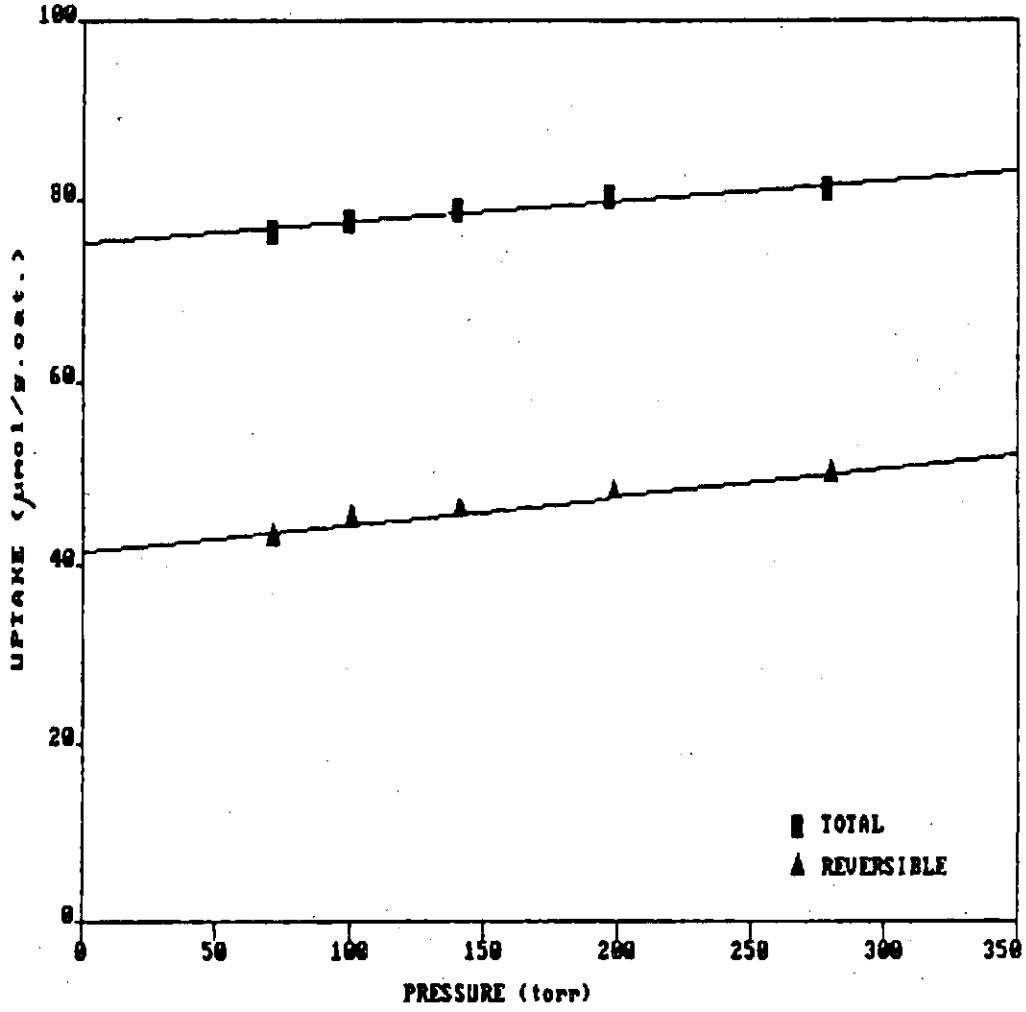

Figure A-26 Hydrogen Adsorption Isotherms on RuRbY at 298 K (Decomposed in Flowing Helium)

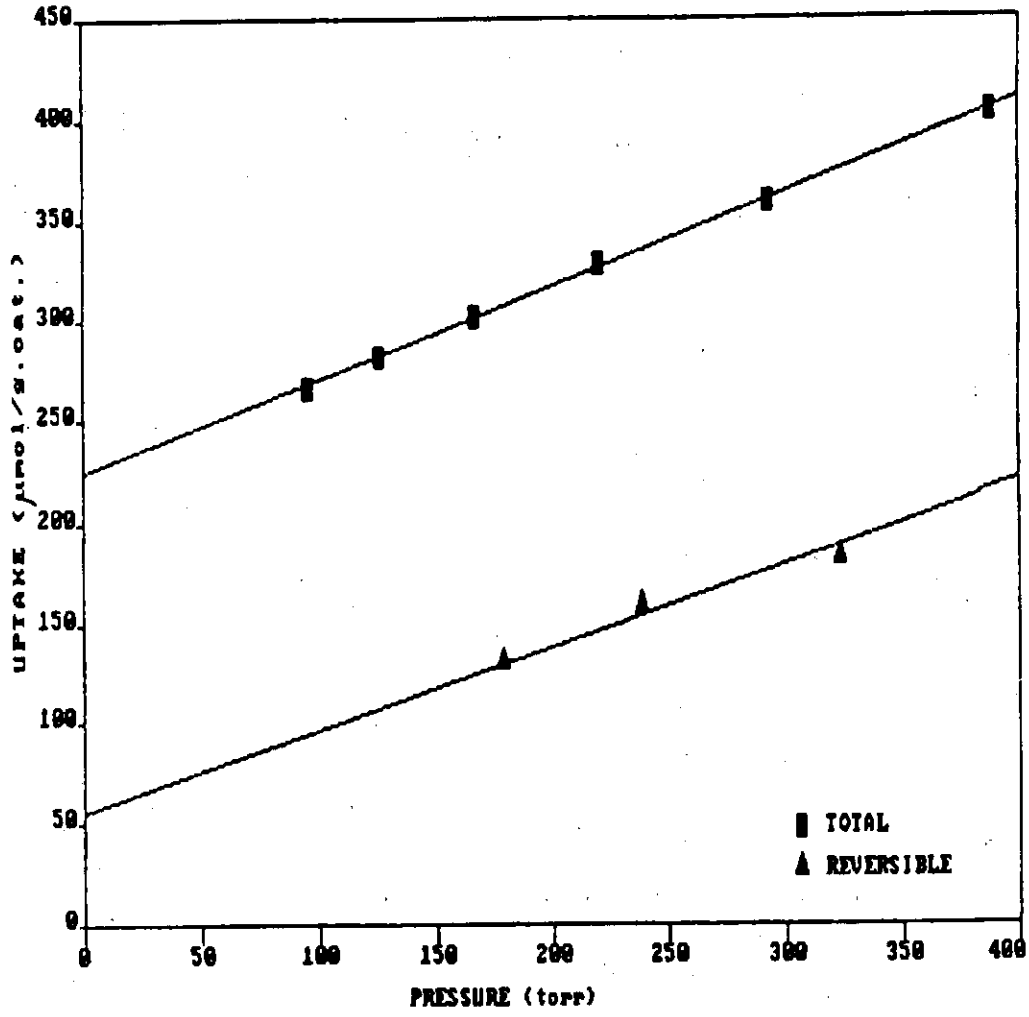

Figure A-27 CO Adsorption Isotherms on RuRbY at 298 K (Decomposed under Vacuum).

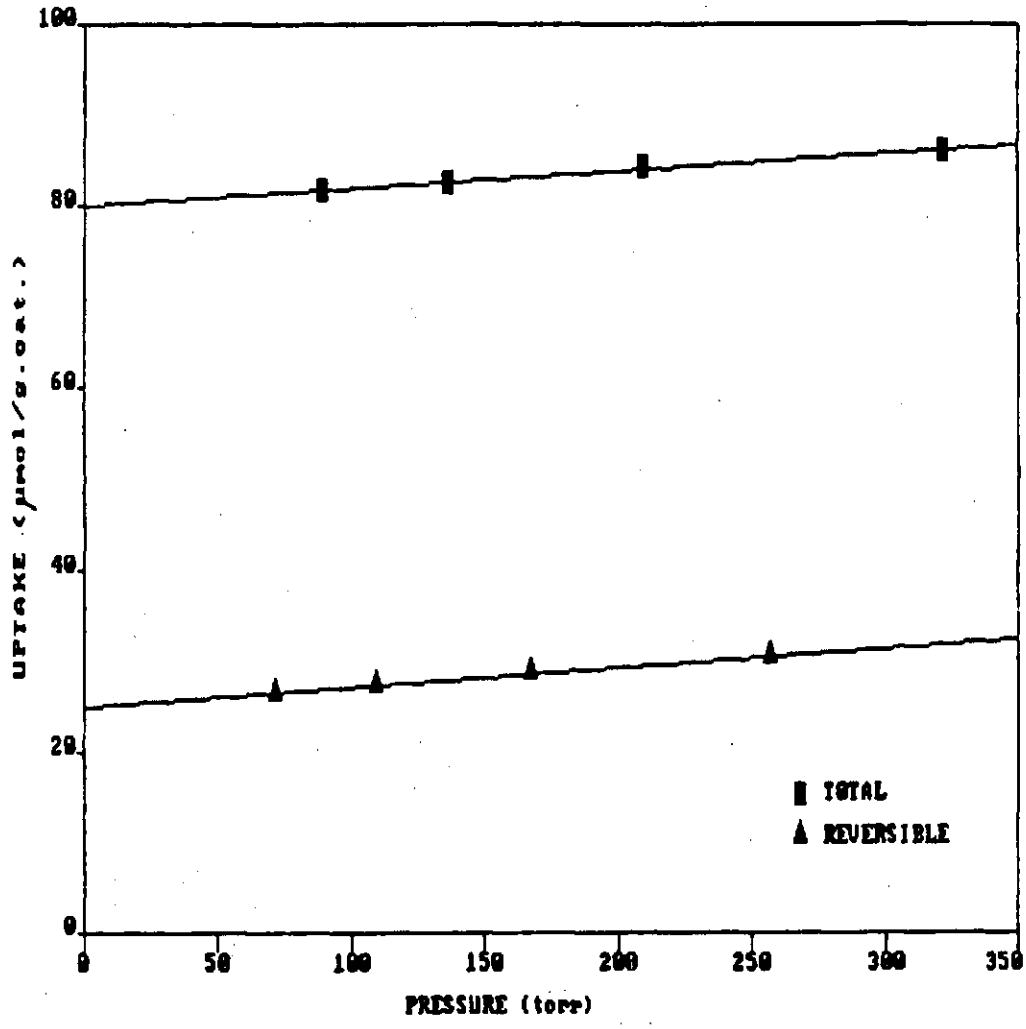

Figure A-28 Hydrogen Adsorption Isotherms on RuCsY at 298 K (Decomposed in Flowing Helium)

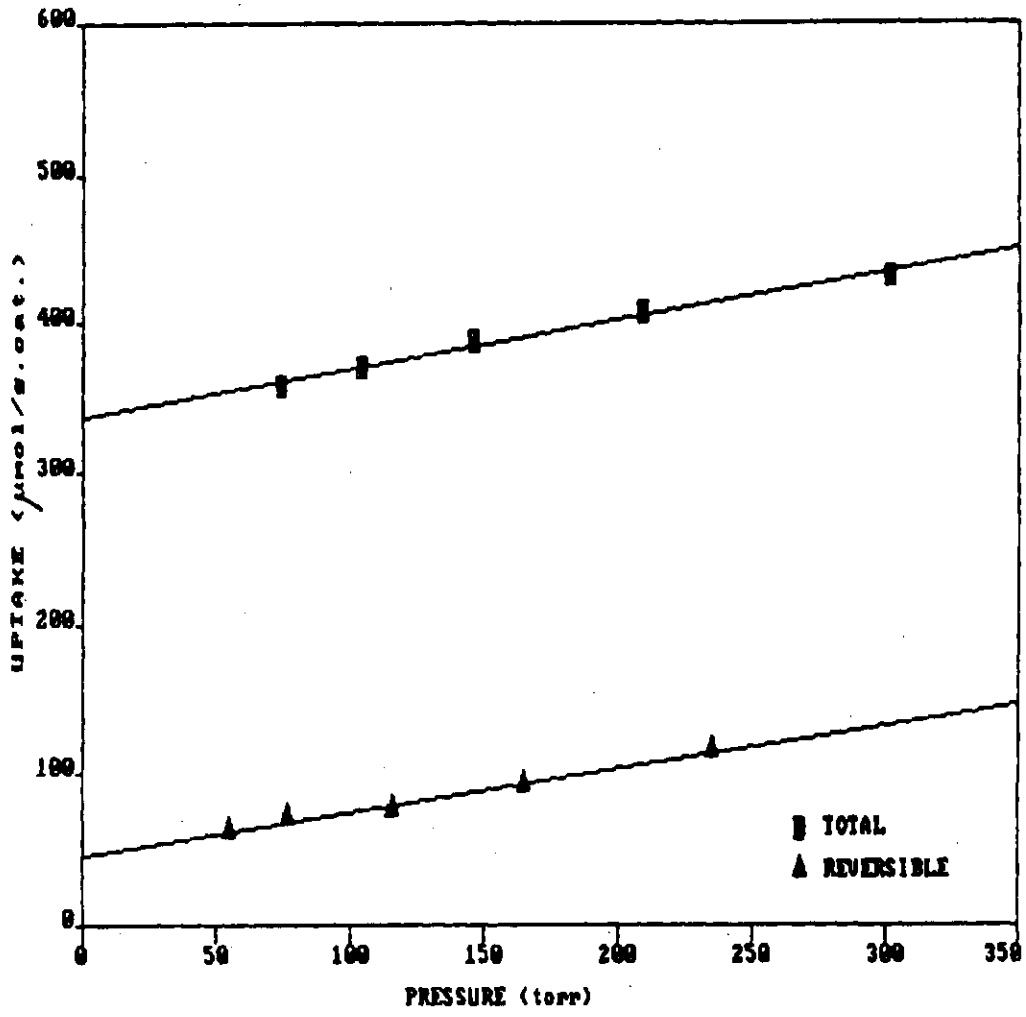

Figure A-29 CO Adsorption Isotherms on RuCsY at 298 K (Decomposed in Flowing Helium)

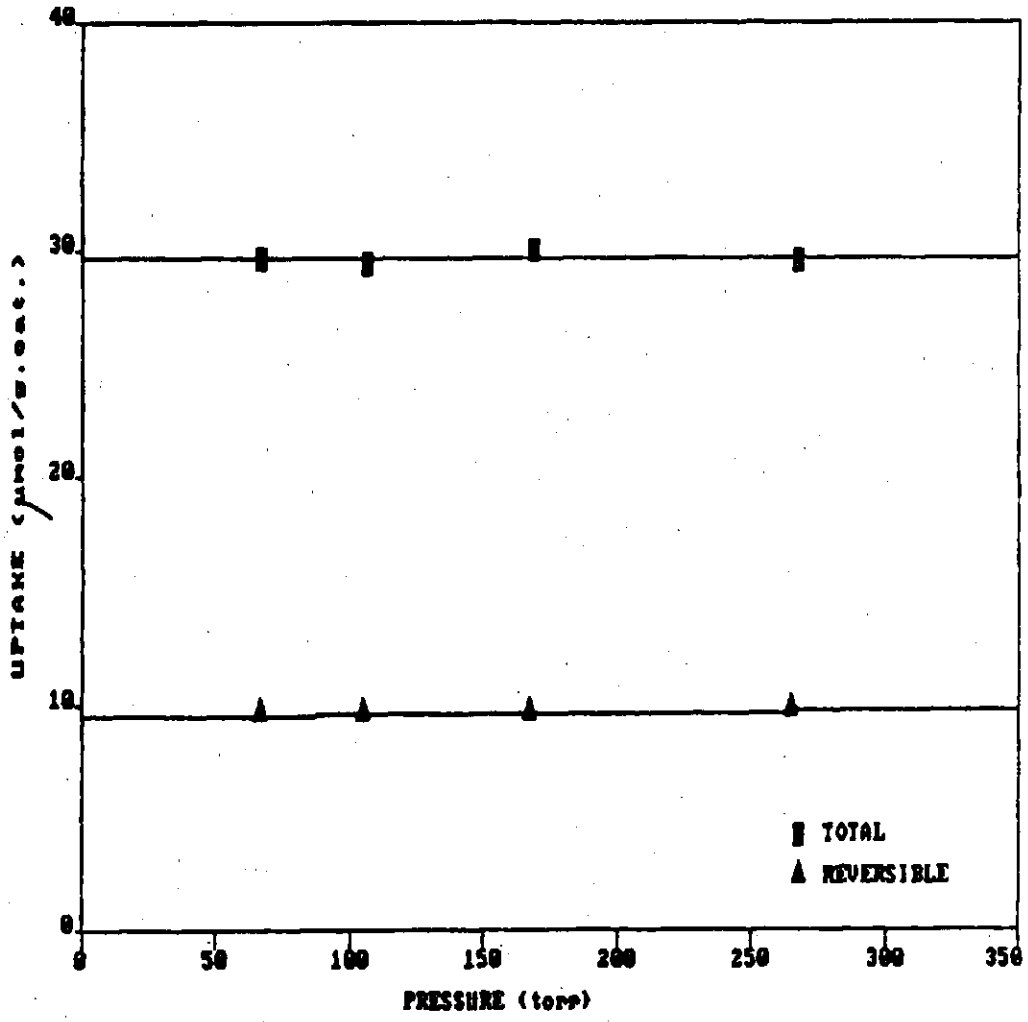

Figure A-30 Hydrogen Adsorption Isotherms on RuNaX at 298 K (Decomposed in Flowing Helium)

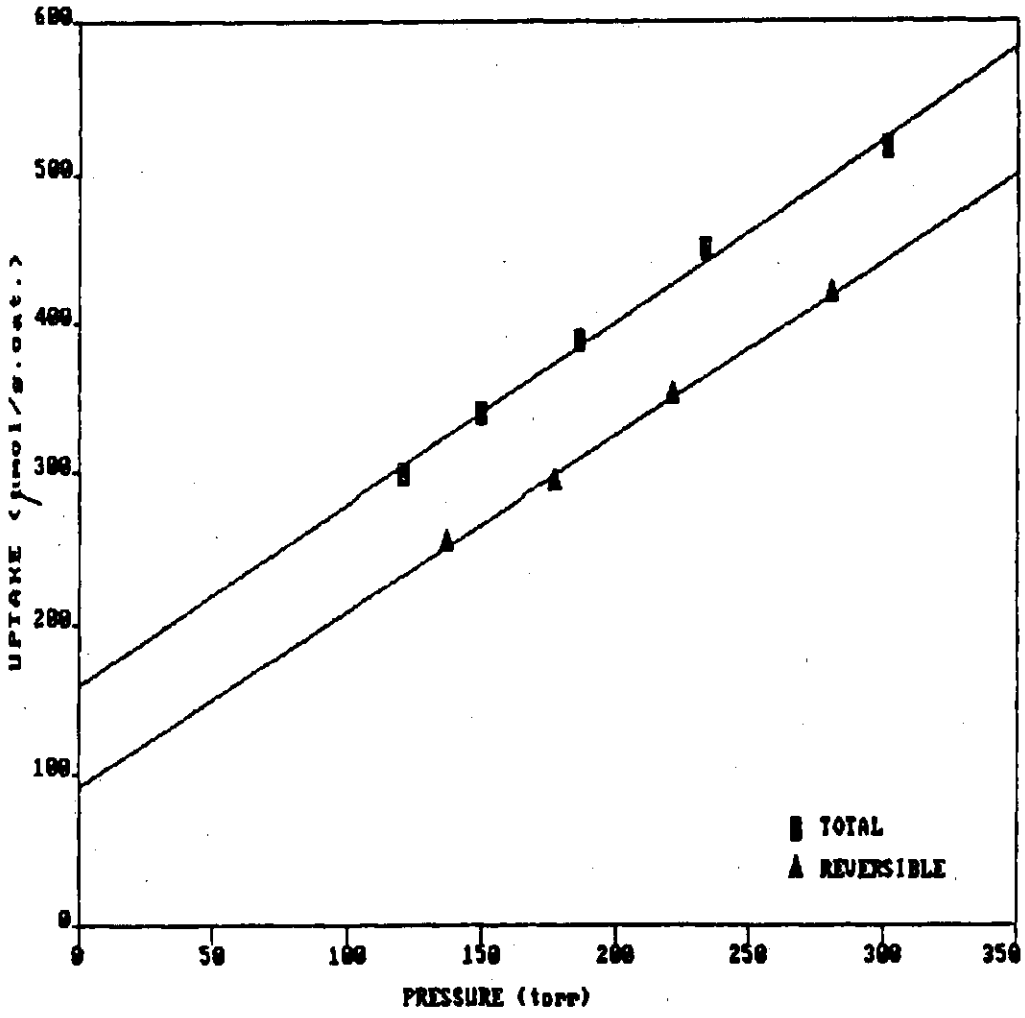

Figure A-31 CO Adsorption Isotherms on RuNaX at 298 K (Decomposed in Flowing Helium)

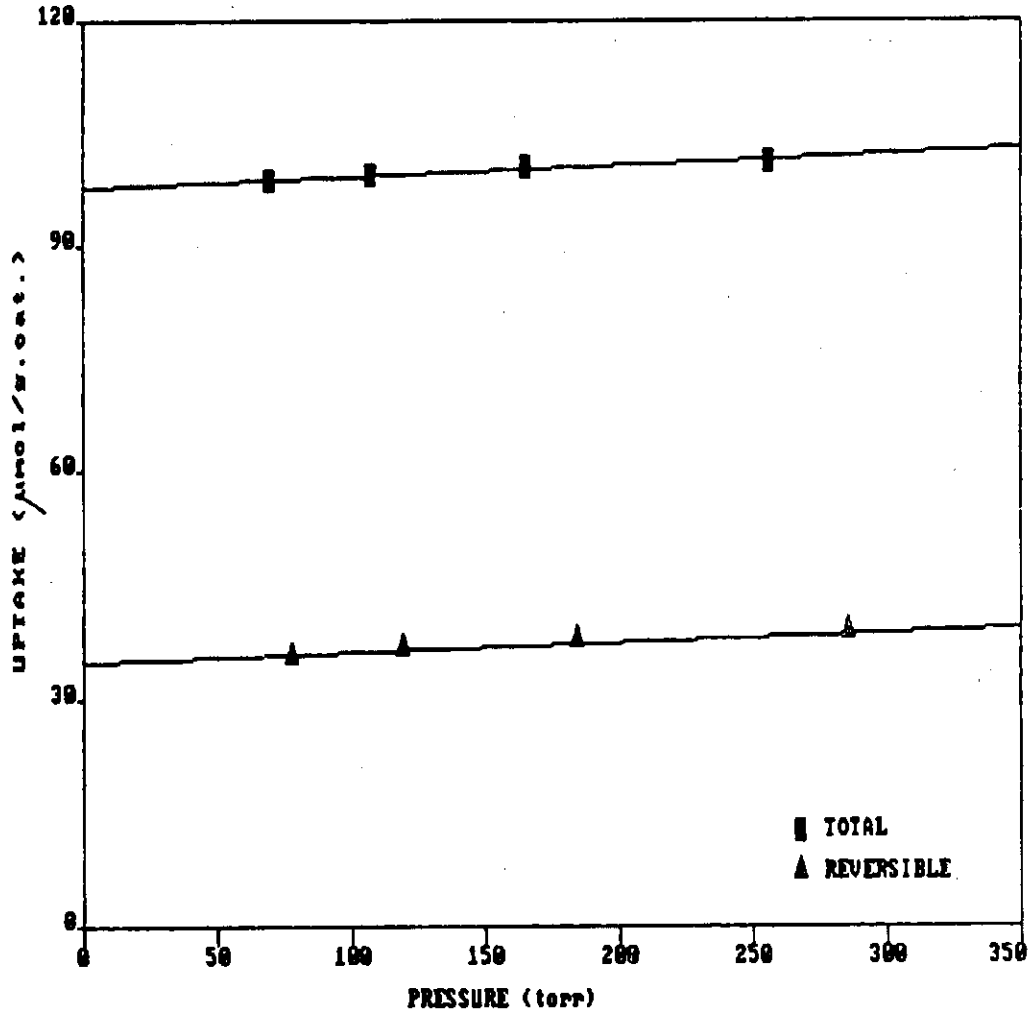

Figure A-32 Hydrogen Adsorption Isotherms on RuKL at 298 K (Decomposed in Flowing Helium)

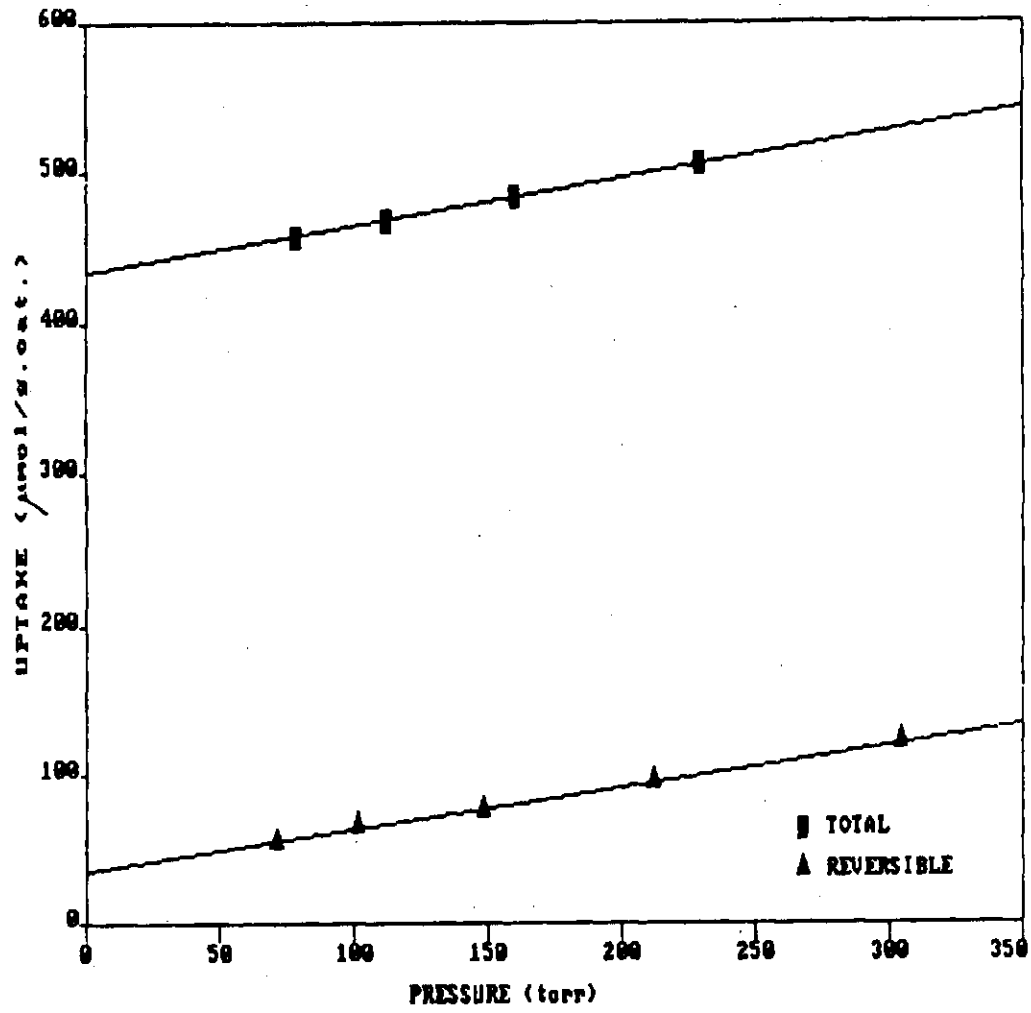

Figure A-33 CO Adsorption Isotherms on RuKL at 298 K
(Decomposed in Flowing Helium)

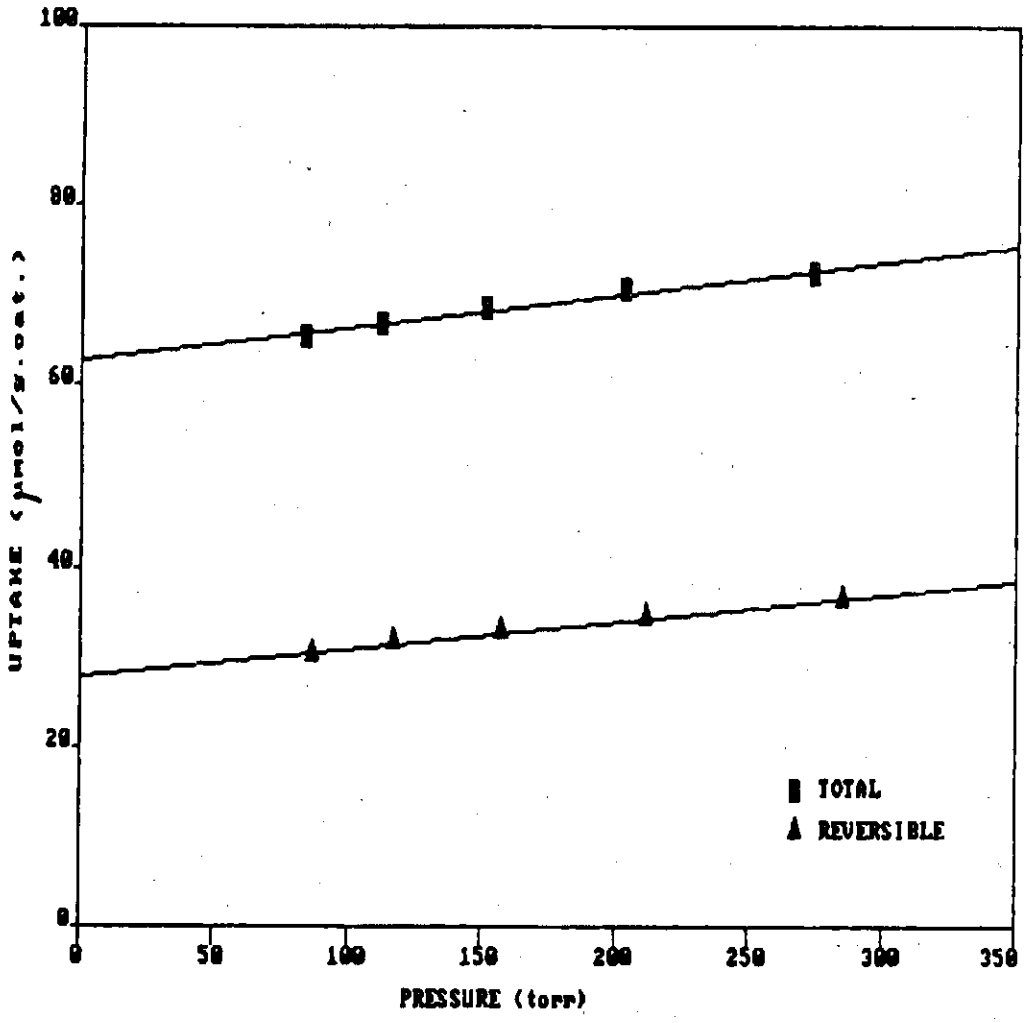

Figure A-34 Hydrogen Adsorption Isotherms on RuNa-Mordenite at 298 K (Decomposed in Flowing Helium)

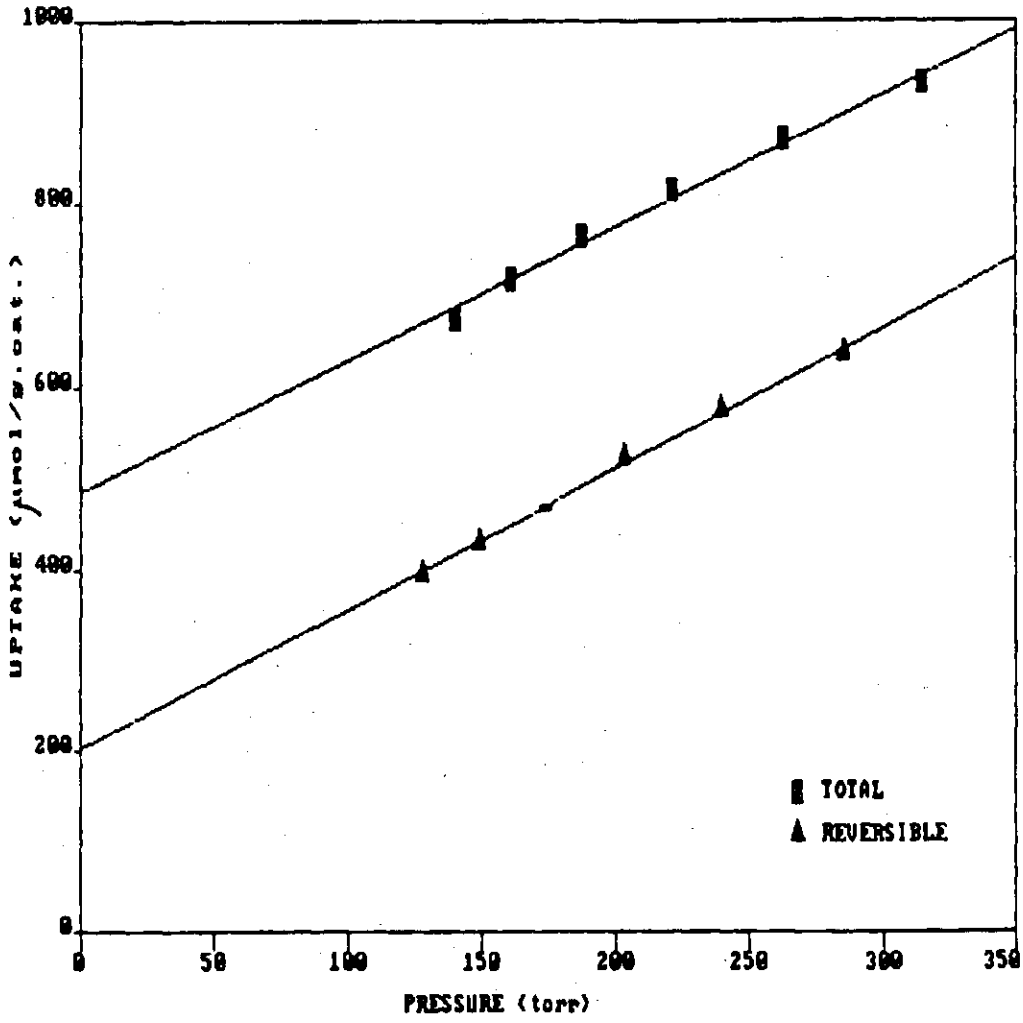

Figure A-35 CO Adsorption Isotherms on RuNa-Mordenite at 298 K (Decomposed in Flowing Helium)

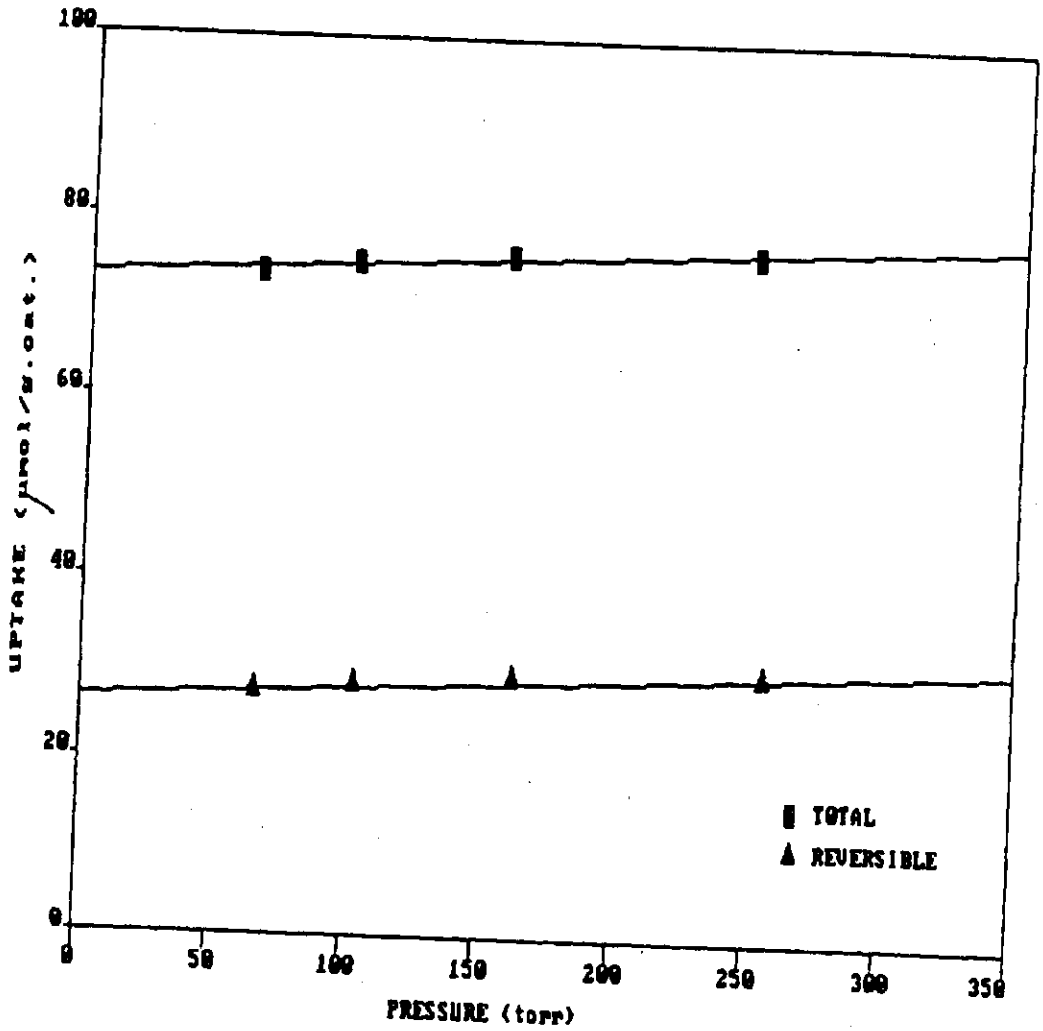

Figure A-36 Hydrogen Adsorption Isotherms on Ru/SiO_2 at 298 K (Decomposed in Flowing Helium)

Table A.2 Summary of Chemisorption Results(*)

Catalyst	Hydrogen Uptake (μmol/g.cat.)			CO Uptake (μmol/g.cat.)		
	Total	Revers.	Irrevers.	Total	Revers.	Irrevers.
RuHY	50	18	32	187	20	167
RuLiY	109	45	64	474	73	401
RuNaY	151	54	97	836	36	800
RuKY	106	28	78	286	51	235
RuRbY	75	41	34	223	56	167
RuCsY	80	25	55	336	46	290
RuNaX	30	10	20	158	91	67
RuKL	98	35	63	434	35	399
RuNa-Mord.	63	28	35	484	20	464
Ru/SiO2	73	27	46	-	-	-

(*) Catalysts Decomposed In Flowing Helium