

ID	Adsorbent	Production area	Particle size	Aqueous solution				Ion concentration of the solution						
				Composition, etc.	pH	Filtration ○: Yes ×: No	Amount of adsorbent [mg]	Solution volume V[mL]	Mixing time(1) [h]	Cs [ppm]	Sr(2) [ppm]	I(3) [ppm]	Cs adsorption ratio [%]	Kd(Cs)
001	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.14	1.2E+04
002	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.17	1.2E+04
003	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.36	1.6E+04
004	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.64	2.7E+04
005	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	97.2	3.5E+03
006	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	96.5	2.7E+03
007	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	91.4	1.1E+03
008	Type A Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	78.6	3.7E+02
009	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.38	1.6E+04
010	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.29	1.4E+04
011	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.33	1.5E+04
012	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.20	1.2E+04
013	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	96.4	2.7E+03
014	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	95.0	1.9E+03
015	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	88.3	7.6E+02
016	Type A Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	74.2	2.9E+02
017	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.38	1.1E+04
018	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.29	1.3E+04
019	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.33	3.3E+04
020	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.20	1.0E+04
021	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	96.4	3.4E+03
022	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	95.0	2.0E+03
023	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	88.3	6.6E+02
024	Type A Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	74.2	2.3E+02
025	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.20	1.2E+04
026	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.15	1.2E+04
027	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.25	1.3E+04
028	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.52	2.1E+04
029	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	97.8	4.4E+03
030	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	96.0	2.4E+03
031	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	91.5	1.1E+03
032	Type X Zeolite (Type Na <sup>+</sup> )		200 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	81.4	4.4E+02
033	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	98.66	7.4E+03
034	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	98.22	5.5E+03
035	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	97.52	3.9E+03
036	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	97.16	3.4E+03
037	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	88.0	7.3E+02
038	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	82.3	4.6E+02
039	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	70.9	2.4E+02
040	Type X Zeolite (Type K <sup>+</sup> )		200 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	60.4	1.5E+02
041	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.24	1.3E+04
042	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.18	1.2E+04
043	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.26	1.3E+04
044	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.43	1.7E+04
045	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	94.7	1.8E+03
046	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	95.4	2.1E+03
047	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	87.6	7.1E+02
048	Type X Zeolite (Type NH <sub>4</sub> <sup>+</sup> )		200 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	72.4	2.6E+02
049	Clinoptilolite	Nitsui	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.94	1.8E+05
050	Clinoptilolite	Nitsui	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.89	9.3E+04
051	Clinoptilolite	Nitsui	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.94	1.6E+05
052	Clinoptilolite	Nitsui	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.89	9.3E+04
053	Clinoptilolite	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	99.7	3.8E+04
054	Clinoptilolite	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	99.0	1.0E+04
055	Clinoptilolite	Nitsui	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	94.0	1.6E+03
056	Clinoptilolite	Nitsui	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	69.0	2.2E+02
057	Clinoptilolite (Type Na <sup>+</sup> )	Nitsui	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.96	2.8E+05
058	Clinoptilolite (Type Na <sup>+</sup> )	Nitsui	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.99	1.3E+06

ID	Adsorbent	Production area	Particle size	Aqueous solution				Ion concentration of the solution				Cs adsorption ratio [%]	Kd(Cs)	
				Composition, etc.	pH	Filtration ○:Yes ×:No	Amount of adsorbent m[g]	Solution volume V[m]	Mixing time(1) [h]	Cs [ppm]	Sr(2) [ppm]			I(3) [ppm]
059	Clinoptilolite (Type Na+)	Nitsui	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.98	4.3E+05
060	Clinoptilolite (Type Na+)	Nitsui	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.98	5.9E+05
061	Clinoptilolite (Type Na+)	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	99.7	3.8E+04
062	Clinoptilolite (Type Na+)	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	99.7	3.2E+04
063	Clinoptilolite (Type Na+)	Nitsui	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	98.7	7.8E+03
064	Clinoptilolite (Type Na+)	Nitsui	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	83.9	5.2E+02
065	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.92	1.2E+05
066	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.91	1.1E+05
067	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.74	3.8E+04
068	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.46	1.8E+04
069	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	96.9	3.1E+03
070	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	92.4	1.2E+03
071	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	83.7	5.1E+02
072	Clinoptilolite (Type K+)	Nitsui	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	60.4	1.5E+02
073	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.94	1.7E+05
074	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.93	1.5E+05
075	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.89	9.4E+04
076	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.80	5.0E+04
077	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	99.3	1.4E+04
078	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	98.4	6.3E+03
079	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	92.7	1.3E+03
080	Clinoptilolite (Type NH4+)	Nitsui	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	73.2	2.7E+02
081	Mordenite	SHIMANE	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.89	8.9E+04
082	Mordenite	SHIMANE	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.98	5.2E+05
083	Mordenite	SHIMANE	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.98	5.4E+05
084	Mordenite	SHIMANE	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.96	2.5E+05
085	Mordenite	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	99.8	5.7E+04
086	Mordenite	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	99.5	2.0E+04
087	Mordenite	SHIMANE	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	92.9	1.3E+03
088	Mordenite	SHIMANE	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	62.4	1.7E+02
089	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.77	4.3E+04
090	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	100.00	-
091	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.98	6.5E+05
092	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.98	5.8E+05
093	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	99.9	7.3E+04
094	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	99.8	4.3E+04
095	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	91.4	1.1E+03
096	Mordenite (Type Na+)	SHIMANE	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	73.3	2.7E+02
097	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.98	4.7E+05
098	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	99.98	5.2E+05
099	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.92	1.3E+05
100	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.81	5.3E+04
101	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	98.8	8.2E+03
102	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	97.2	3.5E+03
103	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	89.5	8.5E+02
104	Mordenite (Type K+)	SHIMANE	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	67.9	2.1E+02
105	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	5.65	○	0.3	30	24	1	0	0	99.96	2.3E+05
106	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	5.36	○	0.3	30	24	10	0	0	100.00	-
107	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	5.11	○	0.3	30	24	50	0	0	99.76	4.1E+04
108	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	5.15	○	0.3	30	24	100	0	0	99.92	1.2E+05
109	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	300	0	0	99.4	1.8E+04
110	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	4.74	○	0.3	30	24	500	0	0	98.7	7.6E+03
111	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	4.65	○	0.3	30	24	1000	0	0	92.8	1.3E+03
112	Mordenite (Type NH4+型)	SHIMANE	250 mesh	Distilled water	4.61	○	0.3	30	24	2000	0	0	71.7	2.5E+02
113	Clinoptilolite	Niki-HOKKAIDO		Distilled water	5.36	○	0.3	30	24	10	0	0	99.99	6.9E+05
114	Clinoptilolite	Niki-HOKKAIDO		Distilled water	4.65	○	0.3	30	24	1000	0	0	96.28	2.6E+03