start	end	mask	rate	uncert	process_desc	mask_desc	notes
0b110000	0b100000	0b110110	148d00	2	148 deprotonation	no central cl,no upper	from Sangyun's PT calcs; deprotonation to bulk
0b110010	0b100010	0b110110	148d01	2	148 deprotonation	central cl,no upper	from Sangyun's PT calcs; deprotonation to bulk
0b110100	0b100100	0b110110	148d10	2	148 deprotonation	no central cl,cl upper	from Sangyun's PT calcs; deprotonation to bulk
0b110110	0b100110	0b110110	148d11	2	148 deprotonation	central cl,cl upper	from Sangyun's PT calcs; deprotonation to bulk
0b100000	0b110000	0b110110	148p00	2	148 protonation	no central cl,no upper	from Sangyun's PT calcs; protonation from bulk
0b100010	0b110010	0b110110	148p01	2	148 protonation	central cl,no upper	from Sangyun's PT calcs; protonation from bulk
0b100100	0b110100	0b110110	148p10	2	148 protonation	no central cl,cl upper	from Sangyun's PT calcs; protonation from bulk
0b100110	0b110110	0b110110	148p11	2	148 protonation	central cl,cl upper	from Sangyun's PT calcs; protonation from bulk
0b110000	0b010000	0b110010	d1__0_	2	148 rotation(down)	no central; 148 protonated	from Sangyun's PMF calcs; E148 rotation without Cl_cen
0b100000	0b000000	0b110010	d0__0_	2	148 rotation(down)	no central; 148 deprotonated	from Sangyun's PMF calcs; E148 rotation without Cl_cen
0b010000	0b110000	0b110010	u1__0_	2	148 rotation(up)	no central; 148 protonated	from Sangyun's PMF calcs; E148 rotation without Cl_cen
0b000000	0b100000	0b110010	u0__0_	2	148 rotation(up)	no central; 148 deprotonated	from Sangyun's PMF calcs; E148 rotation without Cl_cen
0b010010	0b110010	0b100010	u1__1_	2	148 rotation(up)	central cl	from Sangyun's PMF calcs; E148 rotation with Cl_cen
0b001000	0b000000	0b001010	203d0	2	203 deprotonation	no central cl	Estimated
0b101010	0b100010	0b001010	203d1	2	203 deprotonation	central cl	Estimated
0b000000	0b001000	0b001010	203p0	2	203 protonation	no central cl	Estimated
0b100010	0b101010	0b001010	203p1	2	203 protonation	central cl	Estimated
0b110010	0b010100	0b110111	cl1_+-0	2	Central to External	No internal,E148p	from Sangyun's 2D PMF for Cl; E148 rotates when Cl move between Cl_cen and Cl_upper
0b110011	0b010101	0b110111	cl1_+-1	2	Central to External	internal,E148p	from Sangyun's 2D PMF for Cl; E148 rotates when Cl move between Cl_cen and Cl_upper
0b100010	0b000001	0b110111	cl0_0-+	2	Central to Internal	No external,E148d	from Sangyun's 2D PMF for Cl
0b110010	0b010001	0b110111	cl1_0-+	2	Central to Internal	No external,E148p	from Sangyun's 2D PMF for Cl
0b100110	0b000101	0b110111	cl0_1-+	2	Central to Internal	external,E148d	from Sangyun's 2D PMF for Cl
0b110110	0b010101	0b110111	cl1_1-+	2	Central to Internal	external,E148p	from Sangyun's 2D PMF for Cl
0b000000	0b000100	0b010111	cl0_+00	2	External Chloride Attach	No central,no internal	from Sangyun's BD calcs
0b010000	0b010100	0b010111	cl1_+00	2	External Chloride Attach	No central,no internal	from Sangyun's BD calcs
0b000001	0b000101	0b010111	cl0_+01	2	External Chloride Attach	No central,internal	from Sangyun's BD calcs
0b010001	0b010101	0b010111	cl1_+01	2	External Chloride Attach	No central,internal	from Sangyun's BD calcs
0b100010	0b100110	0b110111	cl0_+10	2	External Chloride Attach	central,no internal	from Sangyun's BD calcs
0b110010	0b110110	0b110111	cl1_+10	2	External Chloride Attach	central,no internal	from Sangyun's BD calcs
0b100011	0b100111	0b110111	cl0_+11	2	External Chloride Attach	central,internal	from Sangyun's BD calcs
0b110011	0b110111	0b110111	cl1_+11	2	External Chloride Attach	central,internal	from Sangyun's BD calcs
0b000100	0b000000	0b010111	cl0_-00	2	External Chloride Leave	No central,no internal	from Sangyun's BD calcs
0b010100	0b010000	0b010111	cl1_-00	2	External Chloride Leave	No central,no internal	from Sangyun's BD calcs
0b000101	0b000001	0b010111	cl0_-01	2	External Chloride Leave	No central,internal	from Sangyun's BD calcs
0b010101	0b010001	0b010111	cl1_-01	2	External Chloride Leave	No central,internal	from Sangyun's BD calcs
0b100110	0b100010	0b110111	cl0_-10	2	External Chloride Leave	central,no internal	from Sangyun's BD calcs
0b110110	0b110010	0b110111	cl1_-10	2	External Chloride Leave	central,no internal	from Sangyun's BD calcs
0b100111	0b100011	0b110111	cl0_-11	2	External Chloride Leave	central,internal	from Sangyun's BD calcs
0b110111	0b110011	0b110111	cl1_-11	2	External Chloride Leave	central,internal	from Sangyun's BD calcs
0b010100	0b110010	0b110111	cl1_-+0	2	External to Central	No internal,E148p	from Sangyun's 2D PMF for Cl; E148 rotates when Cl move between Cl_cen and Cl_upper
0b010101	0b110011	0b110111	cl1_-+1	2	External to Central	internal,E148p	from Sangyun's 2D PMF for Cl; E148 rotates when Cl move between Cl_cen and Cl_upper
0b000000	0b000001	0b010111	cl0_00+	2	Internal Chloride Attach	No external,no central	from Sangyun's BD calcs
0b010000	0b010001	0b010111	cl1_00+	2	Internal Chloride Attach	No external,no central	from Sangyun's BD calcs
0b000100	0b000101	0b010111	cl0_10+	2	Internal Chloride Attach	external,no central	from Sangyun's BD calcs
0b010100	0b010101	0b010111	cl1_10+	2	Internal Chloride Attach	external,no central	from Sangyun's BD calcs
0b100010	0b100011	0b110111	cl0_01+	2	Internal Chloride Attach	No external,central	from Sangyun's BD calcs
0b110010	0b110011	0b110111	cl1_01+	2	Internal Chloride Attach	No external,central	from Sangyun's BD calcs
0b100110	0b100111	0b110111	cl0_11+	2	Internal Chloride Attach	external,central	from Sangyun's BD calcs
0b110110	0b110111	0b110111	cl1_11+	2	Internal Chloride Attach	external,central	from Sangyun's BD calcs
0b000001	0b000000	0b010111	cl0_00-	2	Internal Chloride Leave	No external,no central	from Sangyun's BD calcs

0b010001	0b010000	0b010111	cl1_00-	2	Internal Chloride Leave	No external,no central	from Sangyun's BD calcs					
0b000101	0b000100	0b010111	cl0_10-	2	Internal Chloride Leave	external,no central	from Sangyun's BD calcs					
0b010101	0b010100	0b010111	cl1_10-	2	Internal Chloride Leave	external,no central	from Sangyun's BD calcs					
0b100011	0b100010	0b110111	cl0_01-	2	Internal Chloride Leave	No external,central	from Sangyun's BD calcs					
0b110011	0b110010	0b110111	cl1_01-	2	Internal Chloride Leave	No external,central	from Sangyun's BD calcs					
0b100111	0b100110	0b110111	cl0_11-	2	Internal Chloride Leave	external,central	from Sangyun's BD calcs					
0b110111	0b110110	0b110111	cl1_11-	2	Internal Chloride Leave	external,central	from Sangyun's BD calcs					
0b000001	0b100010	0b110111	cl0_0+-	2	Internal to Central	No external,E148d	from Sangyun's 2D PMF for Cl					
0b010001	0b110010	0b110111	cl1_0+-	2	Internal to Central	No external,E148p	from Sangyun's 2D PMF for Cl					
0b000101	0b100110	0b110111	cl0_1+-	2	Internal to Central	external,E148d	from Sangyun's 2D PMF for Cl					
0b010101	0b110110	0b110111	cl1_1+-	2	Internal to Central	external,E148p	from Sangyun's 2D PMF for Cl					
0b001000	0b010000	0b111110	h+-00_	2	proton transfer	no Cl	8 to 16,... from Sangyun's PT calcs; this rate is specifically for E148 down					
0b010000	0b001000	0b111110	h-+00_	2	proton transfer	no Cl	16 to 8,... from Sangyun's PT calcs; this rate is specifically for E148 down					
0b101010	0b110010	0b111110	h+-01_	2	proton transfer	central cl only	10 to 18,... from Sangyun's PT calcs; E148 cannot be fully down with Cl_cen					
0b110010	0b101010	0b111110	h-+01_	2	proton transfer	central cl only	18 to 10,... from Sangyun's PT calcs; E148 cannot be fully down with Cl_cen					
0b001100	0b010100	0b111110	h+-10_	2	proton transfer	no central	estimated based on 8 to 16,... from Sangyun's PT calcs; this rate is specifically for E148 down					
0b010100	0b001100	0b111110	h-+10_	2	proton transfer	no central	estimated based on 16 to 8,... from Sangyun's PT calcs; this rate is specifically for E148 down					
0b101110	0b110110	0b111110	h+-11_	2	proton transfer	central cl	estimated based on 10 to 18,... from Sangyun's PT calcs; E148 cannot be fully down with Cl_cen					
0b110110	0b101110	0b111110	h-+11_	2	proton transfer	central cl	estimated based on 18 to 10,... from Sangyun's PT calcs; E148 cannot be fully down with Cl_cen					