

Table S2. Detailed reactions and kinetic parameters of the 13 backside attack reactions proposed in this work.(units: cm³/mol/s/cal)

No.	Reactions	A	N	E_a
R1	EO+H=C ₂ H ₅ O	1.02E+19	-1.69	14800
R2	EO+H=CH ₃ OCH ₂	1.12E+16	-0.66	24100
R3	EO+H=PC ₂ H ₄ OH	5.95E+18	-1.28	21100
R4	EO+CH ₃ =CH ₃ CH ₂ CH ₂ O	1.96E+16	-1.50	18300
R5	EO+CH ₃ =CH ₃ CH ₂ OCH ₂	3.47E+09	0.95	32100
R6	EO+CH ₃ =CH ₂ CH ₂ OCH ₃	3.49E+15	-0.68	32900
R7	EO+OH=HOCH ₂ CH ₂ O	4.55E+17	-1.61	16800
R8	EO+OH=HOCH ₂ OCH ₂	4.65E+17	-1.25	24600
R9	EO+OH=C ₂ H ₄ O ₂ H	1.74E+05	2.38	32200
R10	C ₂ H ₆ +H=CH ₄ +CH ₃	4.04E+10	1.13	37600
R11	CH ₃ OH+H=CH ₄ +OH	2.34E+08	1.58	29900
R12	CH ₃ OH+H=CH ₃ +H ₂ O	1.77E+10	1.42	24300
R13	CH ₃ OH+OH=CH ₃ +H ₂ O ₂	4.09E+00	3.91	50300