ESI1.

Table of the energetic relation of the products (kcal/mol).

		Average of OH/OD internal energy				COM translational energy release			
	Collision	Insertion			Abstraction	Insertion			Abstraction
	energy	Forward	Sideways	Backward	(whole angle)	Forward	Sideways	Backward	(whole angle)
$CH_3(v=0)$	0.9	28	31	28	38	16	13	16	6
	1.2	29	33	28	38	15	11	16	6
	1.6	28	33	26	37	17	11	18	7
	3.6	32	36	32	36	15	10	14	11
	3.7	31	36	35	35	15	10	12	12
	3.9	32	37	35	35	15	10	12	12
	4.3	32	37	34	35	15	10	13	13
	6.4	34	37	33	34	16	12	16	15
$CD_3(v=0)$	1.0	29	29	23	36	14	15	21	8
	1.3	30	30	24	35	14	13	20	9
	1.8	30	32	25	36	14	13	19	8
	3.8	33	35	28	35	14	12	18	12
	3.9	33	34	27	35	14	12	19	12
	4.2	32	35	28	35	14	12	19	12
	4.7	33	36	29	35	14	12	18	13
	6.8	35	37	30	35	14	12	19	15
$CH_3(v_1=1)$	1.6	22	27	22		14	9	14	
	3.7	24	29	24		14	9	14	
	6.4	26	30	25		15	10	15	
$CD_3(v_1= 1)$	1.8	27	28	21		11	11	18	
	3.8	29	29	23		12	11	18	
	6.8	30	31	25		14	12	18	