

An Updated Reaction Model for the High-Temperature Pyrolysis and Oxidation of Acetaldehyde

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Tabulated characteristic time of reaction

This supplemental material lists the experimental results (characteristic time of reaction based on OH*, CH* and CO₂* emission) obtained during our shock tube study. The uncertainty is on the order of 20%.

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Mix	Φ	T_5 (K)	P_5 (kPa)	$\tau_{100\%}(OH^*)$ (μs)	$\tau_{100\%}(CH^*)$ (μs)	$\tau_{100\%}(CO_2^*)$ (μs)
1	0.5	1481	392	131	98	155
1	0.5	1295	345	709	729	770
1	0.5	1408	375	348	336	375
1	0.5	1402	340	271	267	294
1	0.5	1506	339	121	115	146
1	0.5	1537	328	100	92	110
2	1.00	1370	371	613	561	602
2	1.00	1381	373	574	564	603
2	1.00	1397	345	397	379	413
2	1.00	1418	316	316	308	330
2	1.00	1487	321	152	136	156
2	1.00	1475	357	259	254	286
2	1.00	1407	404	441	421	461
3	1.5	1455	357	456	480	536
3	1.5	1368	356	693	675	716
3	1.5	1338	358	1540	1585	1593
3	1.5	1385	341	759	749	780
3	1.5	1434	342	417	414	433
3	1.5	1456	331	278	276	288
3	1.5	1580	332	116	102	114
3	1.5	1566	306	102	90	107
3	1.5	1498	307	227	213	241
3	1.5	1479	320	176	162	185

Table 1: Summary of the experimental results obtained in the present study from OH^* , CH^* and CO_2^* emission for reflected shock-heated CH_3CHO-O_2-Ar mixtures.