Table 1. Molecular Bond Dissociation Energies for RH → R + H: Experimental Bond Enthalpies and Radical Heats of Formation at 298 K

	DH_{298} (kcal mol^{-1})	$\Delta_f H_{298}$(R) (kcal mol^{-1})	ref		DH_{298} (kcal mol^{-1})	$\Delta_f H_{298}$(R) (kcal mol^{-1})	ref
			Inorganics				
H_2	104.206 ± 0.003	52.103 ± 0.003	4	$OH^- \rightarrow O^- + H$	110.21 ± 0.07	−33.23 ± 0.07	34
HF	136.25 ± 0.01	18.83 ± 0.17	6	$OH^+ \rightarrow O + H^+$	115.2 ± 0.1	59.55 ± 0.02	34
HCl	103.15 ± 0.03	29.03 ± 0.04	9	H_2S	91.2 ± 0.1	34.2 ± 0.2	6
HBr	87.54 ± 0.05	28.62 ± 0.06	9	SH	84.1 ± 0.2	66.2 ± 0.3	6
HI	71.32 ± 0.06	26.04 ± 0.08	9	H−NO	49.5 ± 0.7	21.8 ± 0.1	4
H−CN	126.3 ± 0.2	105.0 ± 0.7	6	H−ONO (trans)	79.1 ± 0.2	8.2 ± 0.1	4
NH_3	107.6 ± 0.1	44.5 ± 0.1	6	$H-ONO_2$	101.7 ± 0.4	17.6 ± 0.3	35
H_2O	118.82 ± 0.07	8.86 ± 0.07	34	SiH_4	91.7 ± 0.5	47.9 ± 0.6	9
OH	101.76 ± 0.07	59.55 ± 0.02	34	GeH_4	83 ± 2	53 ± 2	9
			Hydrocarbons				
CH_4	104.99 ± 0.03	35.05 ± 0.07	31	CH_2CH-H	110.7 ± 0.6	71.1 ± 0.7	6
CH_3	110.4 ± 0.2	93.3 ± 0.2	31	HCC−H	133.32 ± 0.07	135.6 ± 0.2	36
CH_2	101.3 ± 0.3	142.5 ± 0.2	9	C_6H_5-H	112.9 ± 0.5	80.5 ± 0.5	6
CH	80.9 ± 0.2	171.3 ± 0.1	9	$C_6H_5 \rightarrow o\text{-}C_6H_4 + H$	78 ± 3	106 ± 3	37
CH_3CH_2-H	101.1 ± 0.4	29.0 ± 0.4	10	$C_6H_5 \rightarrow m\text{-}C_6H_4 + H$	94 ± 3	122 ± 3	37
$(CH_3)_2CH-H$	98.6 ± 0.4	21.5 ± 0.4	10	$C_6H_5 \rightarrow p\text{-}C_6H_4 + H$	109 ± 3	138 ± 3	37
$CH_3CH_2(CH_3)CH-H$	98.2 ± 0.5	16.1 ± 0.5	10	CH_2CHCH_2-H	88.8 ± 0.4	41.4 ± 0.4	38
$(CH_3)_3C-H$	96.5 ± 0.4	12.3 ± 0.4	10	$C_6H_5CH_2-H$	89.8 ± 0.6	49.7 ± 0.6	38
			Alcohols				
$H-CH_2OH$	96.1 ± 0.2	−4.08 ± 0.2	16	CH_3CH_2O-H	104.7 ± 0.8	−3.6 ± 0.8	6
CH_3O-H	104.6 ± 0.7	4.3 ± 0.7	6	$(CH_3)_2CHO-H$	105.7 ± 0.7	−11.5 ± 0.7	6
CH_3S-H	87.4 ± 0.5	29.8 ± 0.4	39,40	$(CH_3)_3CO-H$	106.3 ± 0.7	−20.5 ± 0.7	6
$H-CH_2SH$	94 ± 2	36 ± 2	39, 40	C_6H_5O-H	90 ± 3	−58 ± 3	41
			Peroxides				
HOO−H	87.8 ± 0.5	3.2 ± 0.5	14	CH_3CH_2OO-H	85 ± 2	−6.8 ± 2.3	42
CH_3OO-H	88 ± 1	4.8 ± 1.2	42	$(CH_3)_3COO-H$	84 ± 2	−25.2 ± 2.3	42
			Carbonyls				
H−CHO	88.144 ± 0.008	10.1 ± 0.1	6	H−COOH is ≥	96 ± 1	−46.5 ± 0.7	45
$CH_3C(O)-H$	89.4 ± 0.3	−2.4 ± 0.3	43	CH_3COO-H	112 ± 3	−43 ± 3	44
$H-CH_2CHO$	94 ± 2	2.5 ± 2.2	9	C_6H_5COO-H	111 ± 4	−12 ± 4	44
HCOO−H	112 ± 3	−30 ± 3	44				