

EMAA file format

As for now, the data are given in the RADEX format (<https://personal.sron.nl/~vdtak/radex/index.shtml#moldata>) as employed in the LAMDA database (<https://home.strw.leidenuniv.nl/~moldata/>):

Lines	Description
1 – 2	Molecule name
3 – 4	molecular weight (a.m.u.)
5 – 6	number of energy levels (NLEV)
7 – (7+NLEV)	level number, level energy (cm^{-1}), statistical weight. These numbers are followed by the full set of quantum numbers. The levels are listed in order of increasing energy.
(8+NLEV) – (9+NLEV)	number of radiative transitions (NLIN)
(10+NLEV – (10+NLEV+NLIN)	transition number, upper level, lower level, spontaneous decay rate (s^{-1}). These numbers are followed by the line frequency and upper state energy.
(11+NLEV+NLIN) – (12+NLEV+NLIN)	number of collision partners
(13+NLEV+NLIN) – (14+NLEV+NLIN)	collision partner ID and reference. Identifications are: para-H ₂ = 2, ortho-H ₂ = 3, electrons = 4, H = 5, He = 6, H ⁺ = 7, para-H ₂ O = 2, ortho-H ₂ O = 3, CO = 5.
(15+NLEV+NLIN) – (16+NLEV+NLIN)	number of transitions for which collisional data exist (NCOL)
(17+NLEV+NLIN) – (18+NLEV+NLIN)	number of temperatures for which collisional data exist
(19+NLEV+NLIN) – (20+NLEV+NLIN)	values of temperatures for which collisional data exist
(21+NLEV+NLIN) – (21+NLEV+NLIN+NCOL)	transition number, upper level, lower level; rate coefficients (cm^3s^{-1}) at each temperature