

**Statistical universal branching ratios for cosmic ray dissociation, photodissociation, and dissociative recombination of the C_n=2-10, C_n=2-4H and C₃H₂ neutral and cationic species
Chabot M., Tuna T., Béroff K., Pino T., Le Padellec A. et al, *Astronomy & Astrophysics*,
524, A39, (2010)**

ANGELOVA G Branching ratios for the dissociative recombination of hydrocarbon ions III: the cases of C₃H_n⁺ (n=1-8) INTERNATIONAL JOURNAL OF MASS SPECTROMETRY 235: 7 DOI 10.1016/j.ijms.2004.03.002 2004

ANGELOVA G Branching ratios for the dissociative recombination of hydrocarbon ions - II. The cases of C₄H_n⁺ (n=1-9) INTERNATIONAL JOURNAL OF MASS SPECTROMETRY 232: 195 DOI 10.1016/j.ijms.2003.12.013 2004

BELL MB Observations of long C_nH molecules in the dust cloud TMC-1 ASTROPHYSICAL JOURNAL 518: 740 1999

BETTENS RPA THE INTERSTELLAR GAS-PHASE PRODUCTION OF HIGHLY COMPLEX HYDROCARBONS - CONSTRUCTION OF A MODEL INTERNATIONAL JOURNAL OF MASS SPECTROMETRY 149: 321 1995

BLACK JH MODELS OF INTERSTELLAR CLOUDS 1. ZETA-OPIUCHI CLOUD ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES 34 : 405 1977

CERNICHARO J A new infrared band in interstellar and circumstellar clouds: C-4 or C₄H? ASTROPHYSICAL JOURNAL 580: L157 2002

CERNICHARO J Infrared Space Observatory's discovery of C-4H₂, C-6H₂, and benzene in CRL 618 ASTROPHYSICAL JOURNAL 546: L123 2001

CHABOT M Charge transfer in high velocity C_n(⁺)+He collisions JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS 39: 2593 DOI 10.1088/0953-4075/39/11/022 2006

CHABOT M Shape analysis of current pulses delivered by semiconductor detectors: A new tool for fragmentation studies of high velocity atomic clusters and molecules NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS 197: 155 2002

CHABOT M Scaling Law for the Partitioning of Energy in Fragmenting Multicharged Carbon Clusters PHYSICAL REVIEW LETTERS 104: ARTN 043401 2010

CHOI H Photodissociation of linear carbon clusters C_n (n=4-6) JOURNAL OF PHYSICAL CHEMISTRY A 104: 2025 2000

DIAZTENDERO S Fragmentation of small neutral carbon clusters INTERNATIONAL JOURNAL OF MASS SPECTROMETRY 252: 126 DOI 10.1016/j.ijms.2005.12.055 2006

DICKINS JE A study of the physics and chemistry of L134N ASTROPHYSICAL JOURNAL 542: 870 2000

DRAINE BT T APJS 36 : 595 1978

DULEY WW INTERSTELLAR CHEM: 1984

EHLERDING A Dissociative recombination of C₂H⁺ and C₂H₄⁺: Absolute cross sections and product branching ratios PHYSICAL CHEMISTRY CHEMICAL PHYSICS 6: 949 DOI 10.1039/b314882c 2004

FOSSE D Molecular carbon chains and rings in TMC-1 ASTROPHYSICAL JOURNAL 552: 168 2001

GALAZUTDINOV G The interstellar C-3 chain molecule in different interstellar environments ASTRONOMY & ASTROPHYSICS 395: 969 DOI 10.1051/0004-6361:20021324 2002

GEUSIC ME PHOTOFAGMENTATION OF MASS RESOLVED CARBON CLUSTER IONS ZEITSCHRIFT FUR PHYSIK D-ATOMS MOLECULES AND CLUSTERS 3: 309 1986

GRAEDEL TE THE KINETIC CHEMISTRY OF DENSE INTER-STELLAR CLOUDS ASTROPHYSICAL

JOURNAL SUPPLEMENT SERIES 48: 321 1982

GREDEL R THE C/CO RATIO IN DENSE INTERSTELLAR CLOUDS ASTROPHYSICAL JOURNAL 323: L137 1987

GREENBERG JMAP M AP SS 39: 9 1976

GROSS DHE STATISTICAL FRAGMENTATION OF HOT ATOMIC METAL-CLUSTERS ZEITSCHRIFT FUR PHYSIK D-ATOMS MOLECULES AND CLUSTERS 35: 27 1995

HEBER O Dissociative recombination of small carbon cluster cations PHYSICAL REVIEW A 73: ARTN 022712 2006

HELBERT J The chemistry of C-2 and C-3 in the coma of Comet C/1995 O1 (Hale-Bopp) at heliocentric distances $r(h)=2.9$ AU ASTRONOMY & ASTROPHYSICS 442 : 1107 DOI 10.1051/0004-6361:20041571 2005

HERBST E WHAT ARE PRODUCTS OF POLYATOMIC ION-ELECTRON DISSOCIATIVE RECOMBINATION REACTIONS ASTROPHYSICAL JOURNAL 222: 508 1978

HERBST E New dissociative recombination product branching fractions and their effect on calculated interstellar molecular abundances ASTROPHYSICAL JOURNAL 485: 689 1997

HERBST E GAS-PHASE PRODUCTION OF COMPLEX HYDROCARBONS, CYANOPOLYINES, AND RELATED-COMPOUNDS IN DENSE INTERSTELLAR CLOUDS ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES 69: 271 1989

HERBST E DISSOCIATIVE RECOMBI : 2003

HINKLE KH DETECTION OF C-3 IN THE CIRCUMSTELLAR SHELL OF IRC+10216 SCIENCE 241: 1319 1988

HOBBS LM INTER-STELLAR C-2 MOLECULES TOWARD ZETA-OPIUCHI ASTROPHYSICAL JOURNAL 254: 108 1982

JURA M DUST AROUND AFGL-2688, MOLECULAR SHIELDING, AND THE PRODUCTION OF CARBON CHAIN MOLECULES ASTROPHYSICAL JOURNAL 351: 222 1990

LARSSON M INT J MASS SPECTROM 403: 149 1995

LAVVAS PP Coupling photochemistry with haze formation in Titan's atmosphere, Part II: Results and validation with Cassini/Huygens data PLANETARY AND SPACE SCIENCE 56: 67 DOI 10.1016/j.pss.2007.05.027 2008

LEGER A PHOTO-THERMO-DISSOCIATION .1. A GENERAL MECHANISM FOR DESTROYING MOLECULES ASTRONOMY AND ASTROPHYSICS 213: 351 1989

LEONORI F Crossed molecular beam study of gas phase reactions relevant to the chemistry of planetary atmospheres: The case of C-2 + C₂H₂ PLANETARY AND SPACE SCIENCE 56: 1658 DOI 10.1016/j.pss.2008.04.011 2008

LEPETIT F H-3(+) and other species in the diffuse cloud towards zeta Persei: A new detailed model ASTRONOMY & ASTROPHYSICS 417: 993 DOI 10.1051/0004-6361:20035629 2004

LEPETIT F A model for atomic and molecular interstellar gas: The meudon PDR code ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES 164: 506 2006

LEUNG CM SYNTHESIS OF COMPLEX-MOLECULES IN DENSE INTERSTELLAR CLOUDS VIA GAS-PHASE CHEMISTRY - A PSEUDO TIME-DEPENDENT CALCULATION ASTROPHYSICAL JOURNAL SUPPLEMENTS SERIES 56: 231 1984

MAIER JP Detection of C-3 in diffuse interstellar clouds ASTROPHYSICAL JOURNAL 553: 267 2001

MARTINET G Fragmentation of highly excited small neutral carbon clusters PHYSICAL REVIEW LETTERS 93: ARTN 063401 2004

MILLAR TJ THE SENSITIVITY OF GAS-PHASE MODELS OF DENSE INTERSTELLAR CLOUDS TO CHANGES IN DISSOCIATIVE RECOMBINATION BRANCHING RATIOS ASTRONOMY AND ASTROPHYSICS 194: 250 1988

MILLAR TJ Large molecules in the envelope surrounding IRC+10216 MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 316: 195 2000

MORGAN TJ CROSS SECTIONS FOR DESTRUCTION OF 1-TO 25-KEV/NUCLEON X1SIGMA+G AND C 3IIU HYDROGEN MOLECULES IN COLLISIONS WITH H2 GAS PHYSICAL REVIEW LETTERS 26: 602 1971

PETY J Are PAHs precursors of small hydrocarbons in photo-dissociation regions? The Horsehead case ASTRONOMY & ASTROPHYSICS 435: 885 DOI 10.1051/0004-6361:20041170 2005

PRASAD SS UV-RADIATION FIELD INSIDE DENSE CLOUDS - ITS POSSIBLE EXISTENCE AND CHEMICAL IMPLICATIONS ASTROPHYSICAL JOURNAL 267: 603 1983

ROLLIG M A photon dominated region code comparison study ASTRONOMY & ASTROPHYSICS 467: 187 DOI 10.1051/0004-6361:20065918 2007

ROUEFF E Interstellar C-3 toward HD 210121 ASTRONOMY & ASTROPHYSICS 384: 629 2002

SAKAI N Abundant carbon-chain molecules toward the low-mass protostar IRAS 04368+2557 in L1527 ASTROPHYSICAL JOURNAL 672: 371 2008

SOWA MB DISSOCIATION-ENERGIES FOR CARBON CLUSTER IONS (C2-15+) - A SYSTEM WHERE PHOTODISSOCIATION IS MISLEADING JOURNAL OF CHEMICAL PHYSICS 95: 4719 1991

SPITZER L HEATING OF H I REGIONS BY ENERGETIC PARTICLES ASTROPHYSICAL JOURNAL 152: 971 1968

TERZIEVA R The sensitivity of gas-phase chemical models of interstellar clouds to C and O elemental abundances and to a new formation mechanism for ammonia ASTROPHYSICAL JOURNAL 501: 207 1998

TEYSSIER D Carbon budget and carbon chemistry in Photon Dominated Regions ASTRONOMY & ASTROPHYSICS 417: 135 DOI 10.1051/0004-6361:20034534 2004

TUNA T Fragmentation branching ratios of highly excited hydrocarbon molecules C_nH and their cations C_nH⁺ (n <= 4) JOURNAL OF CHEMICAL PHYSICS 128: ARTN 124312 2008

TURNER BE The physics and chemistry of small translucent molecular clouds. XIII. The basic hydrocarbon chemistry ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES 126: 427 2000

VANDISHOECK EF P C HELD UMIST MANCH: 49 1988

VANHEMERT MC Photodissociation of small carbonaceous molecules of astrophysical interest CHEMICAL PHYSICS 343: 292 2008

VANORDEN A Small carbon clusters: Spectroscopy, structure, and energetics CHEMICAL REVIEWS 98: 2313 1998

WAAST B Acceleration of heavy clusters to MeV energies at the Orsay MP tandem NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT 382: 348 1996

WAKELAM V The effect of uncertainties on chemical models of dark clouds ASTRONOMY & ASTROPHYSICS 451: 551 DOI 10.1051/0004-6361:20054682 2006

WAKELAM V Resetting chemical clocks of hot cores based on S-bearing molecules ASTRONOMY & ASTROPHYSICS 422: 159 DOI 10.1051/0004-6361:20047186 2004

WOHRER K Swift cluster-atom collisions: a progress report NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS 146: 29 1998

WOHRER K MODEL-CALCULATIONS OF MULTIELECTRON IONIZATION OF O2 MOLECULES BY FAST-HEAVY-ION IMPACT PHYSICAL REVIEW A 48: 4784 1993