Detonation Database

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Abstract

Welcome to the GALCIT Explosion Dynamics Laboratory Detonation Database. The goal of this project is to compile, catalog and present experimental data on gaseous detonations. These data currently include cell width, critical tube diameter, initiation energy, and minimum tube diameter. They are formatted in tables and summary graphs, with citations to the original references. A printed version and a World Wide Web version have been prepared. The purpose of this database is to facilitate explosion hazards evaluations and comparisons with numerical simulations of detonation behavior.

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1 Introduction

Detonation data are widely scattered among monographs, journal literature, and institutional reports. Indeed, some valuable but obscure sources may be unavailable through ordinary literature searches. Data are often only available graphically and comparisons between data sets or between experiments and simulations requires digitizing graphs to obtain numerical values. Considerable effort can be spent gathering data for a comparison or during design of an experiment. The purpose of this archive is to minimize the effort required to locate and obtain numerical data, by compiling it in a single, accessible document.

The project originated during the mid 1980's with the notion of writing a review article about detonations and chemistry. In the course of writing that article, it became clear that there was a need for a comprehensive set of references and a data library for comparisons with model computations. Since the advent of the World Wide Web, it has become obvious that publishing the database on the WWW would be much more useful than print alone. A Web document allows searching and linking tools to be employed, and is always up to date. Of course, hardcopy offers its own traditional advantages.

1.0.1 Contributors

- The researchers who generated the experimental data are the primary contributors.
- Joe Shepherd conceived the database idea and provides the guiding force for the continuing effort.
- Mike Kaneshige created the structure and software for maintaining the print and online versions and has done some of the data organization and entry.
- Andrzej Teodorczyk created the initial database of publications, digitized the first set of data plots and made the first summary graphs.
- Jamie Guthrie has done some of the data organization and entry.
- Joanna Austin updated the database in 1999.
- We hope that anyone who is involved in detonation research will be willing to be a contributor. For the present, simply contact Joe Shepherd to submit data or obtain information about how to submit data.

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1.0.2 Dislaimer

We hope the information in this database is useful and accurate, but at present we can not guarantee its accuracy. Corrections are occasionally made without notice. Original references should be consulted for the purpose of inclusion in publications. If you find any inaccuracies, please let us know. For specific warnings, see the section on Pitfalls and Hints 1.1.4.

1.0.3 Citations

The expectation is that the data presented here will be used by other researchers and incorporated into reports and publications. The data presented in this compilation are, properly speaking, the intellectual property of the researchers cited in the associated references. Therefore, when using this data, please be sure to give the appropriate citation. Do not cite this database in reference to specific numerical data but if you found the database useful we would appreciate a general citation. The correct reference is:

M. Kaneshige and J.E. Shepherd. **Detonation database.** Technical Report FM97-8, GALCIT, July 1997. See also the electronic hypertext version athttp://www.galcit.caltech.edu/detn_db/html/.

1.1 Accessing the Data

This document is available in three forms: as a LaTeX typeset postscript file, as a PDF (portable document format) file, and as HTML. The online version is accessible at the URL http://www.-galcit.caltech.edu/detn_db/html/. The postscript version (1.83 MB) and pdf version (1.02 MB) can be downloaded from the WWW, through the HTML version. The printable and online formats contain the same information with somewhat different features. For instance, the printed document is more readable, but the WWW version offers a search engine.

The data are organized into three main sections that are linked together. The summary graphs represent a compilation of typical data organized in terms of type of fuel/oxidizer/diluent and category of data. Many inquiries may be satisfied by one of the plots. These plots are generated from, and refer to, the data tables. The numerical values in the data tables are available for reduction and inclusion in further graphs. Each data table is referenced to one of the sources listed in the References section, which stands alone as a useful bibliography of detonation literature.

1.1.1 Categories

The data sets are organized into a number of categories, some with a set of sub-categories. In situations where this is not specific enough, notes are attached to each data set to describe its individual nature. The formal categories and subcategories we are using (or hope to use) are as follows:

1. Cell Size
   (a) Width
   (b) Length
2. Critical Tube
   (a) Round
   (b) Square
   (c) Other
3. Critical Energy
   (a) Spherical, High Explosive
   (b) Cylindrical, High Explosive
   (c) Spherical, Exploding Wire
   (d) Cylindrical, Exploding Wire
   (e) Planar
   (f) Other
4. Minimum Tube

   (a) Round, Confined
   (b) Square, Confined
   (c) Other, Confined
   (d) Unconfined

5. DDT (not implemented)
   (a) Round, Obstructed Tube
   (b) Square, Obstructed Tube
   (c) Obstructed Channel
   (d) Hot Jet Injection
   (e) Accelerated Flame

6. Projectile Initiated Detonations (not implemented)

1.1.2 Units

We are trying to put all the data in consistent units, at least for the sake of the summary graphs. The data tables (generally) contain the original units as presented in the literature along with our standard units. The standard units used in our summary graphs are as follows:

1. Pressure (Initial Pressure) - kPa
2. Length (Cell Size, Critical Tube, Minimum Tube) - mm
3. Speed - m/s
4. Temperature (Initial Temperature) - K
5. Energy
   - Spherical Critical Energy - J (4520 J = 1 g tetryl)
   - Cylindrical Critical Energy - J/cm

1.1.3 Abbreviations

Following are abbreviations for all the journals and serials mentioned in the References. Wherever possible, they are based on the recommendations of the Bibliographic Guide for Editors and Authors, published by the American Chemical Society (1974).

Acta Astron. Acta Astronomica

AIAA J. AIAA Journal

Annu. Rev. Fluid Mech. Annual Review of Fluid Mechanics

Annu. Rev. Phys. Chem. Annual Review of Physical Chemistry

Astronaut. Acta Astronautica Acta

Ber. Bunsenges. Phys. Chem. Berichte der Bunsengesellschaft für Physikalische Chemie (International Journal of Physical Chemistry)

Combust. Explos. Shock Waves (USSR) Combustion, Explosion and Shock Waves (USSR); Fizika Gorniya i Vzryva

Combust. Flame Combustion and Flame

Combust. Sci. Technol. Combustion Science and Technology

Dokl. Akad. Nauk SSSR Doklady Akademii Nauk SSSR (Proceedings of the Academy of Sciences of the USSR, Physical Chemistry Section)

J. Hazard M. Journal of Hazardous Materials†

J. Phys. D. Journal of Physics D: Applied Physics

Phys. Fluids Physics of Fluids

Prog. Astronaut. Aeronaut. Progress in Astronautics and Aeronautics

Sov. Phys. Tech. Phys. Soviet Physics - Technical Physics

Symp. Int. Combust. Proc. Symposium (International) on Combustion, Proceedings

Symp. Mil. App. Blast Sim. Symposium on Military Applications of Blast Simulation†

Trans. Inst. Chem. Eng. Transactions of the Institution of Chemical Engineers

Z. Phys. Chem. Neue Folge Zeitschrift fur Physikalische Chemie - Neue Folge; International Journal of Research in Physical Chemistry and Chemical Physics

†Not taken from Bibliographic Guide for Editors and Authors

1.1.4 Pitfalls and Hints

When searching the database for a particular item, there are several pitfalls to avoid and hints that can help you:

- Appropriate data points may be found in unexpected places. Each data set represents a set of measurements as some variable (initial pressure, equivalence ratio, etc.) is varied, while other variables are held constant. Therefore, different data sets may overlap but not be presented together. Also, Air is considered an oxidizer, but will generally not be found during searches for O2 or N2.

- When using the search engine, unwanted information may be found. Of course, this is preferable to not finding wanted information, but can be a hassle. For instance, searching for H2 will also find C2H2.

- Temperature information are frequently lacking in experimental reports, even though it is very important as a modeling parameter. In cases where the temperature is not reported but is presumably "room temperature", 293 K is listed in the database.

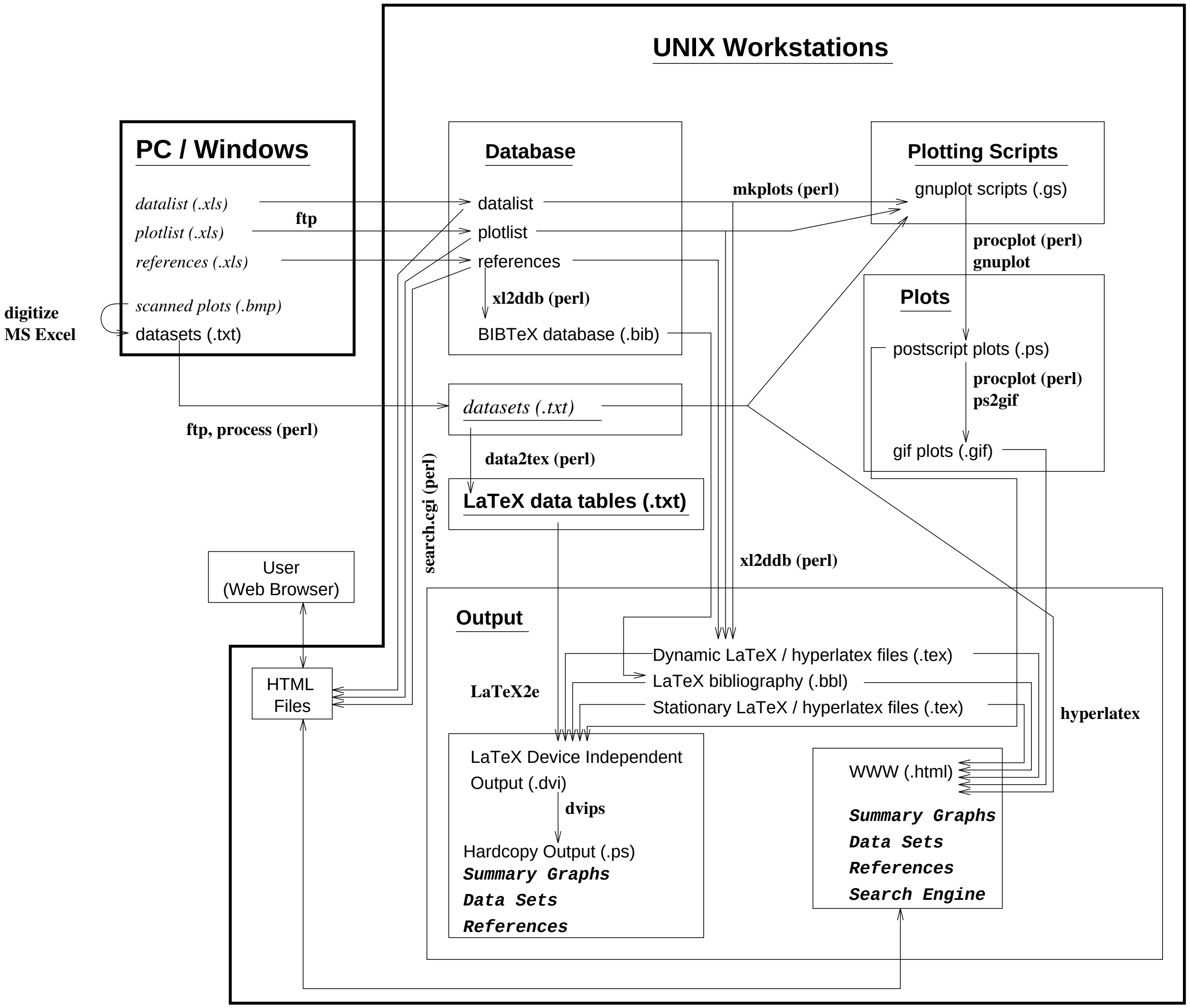
- Data in the literature are often reported along with error bars. Only nominal values are currently contained in this database. Error analysis information must be obtained from the original references.

1.2 How it Works

In raw form, the database consists of a collection of data files, three tables describing the contents of the data files and the links between the three branches of the database, and a collection of scripts for building the processed document. Also, the textual portion of the document exists as LaTeX files on the Unix platform. The data files are created by digitizing the original references and are stored in semi-formatted form on our Unix cluster. The raw linking tables are stored and edited as Microsoft Excel files on a PC. The linking tables are uploaded to the Unix cluster and the rest of the build process is automated by *make* and a series of *perl* scripts.

Since the full build process involves generating a series of LaTeX files, plotting the summary graphs from the data sets, processing the plots into two different forms, formatting the data sets, running LaTeX, and generating the HTML files, *make* saves considerable time by omitting tasks that are not required.

The figure below shows the procedure used to generate this database following additions or modifications.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datalist (.xls)
plotlist (.xls)
references (.xls)
scanned plots (.bmp)
datasets (.txt)
digitize
MS Excel
ftp
ftp, process (perl)
Database
datalist
plotlist
references
xl2ddb (perl)
BIBTeX database (.bib)
datasets (.txt)
data2tex (perl)
LaTeX data tables (.txt)
search.cgi (perl)
mkplots (perl)
xl2ddb (perl)
Plotting Scripts
gnuplot scripts (.gs)
procplot (perl)
gnuplot
Plots
postscript plots (.ps)
procplot (perl)
ps2gif
gif plots (.gif)
User
(Web Browser)
HTML
Files
Output
LaTeX2e
Dynamic LaTeX / hyperlatex files (.tex)
LaTeX bibliography (.bbl)
Stationary LaTeX / hyperlatex files (.tex)
hyperlatex
LaTeX Device Independent
Output (.dvi)
dvips
Hardcopy Output (.ps)
Summary Graphs
Data Sets
References
WWW (.html)
Summary Graphs
Data Sets
References
Search Engine

2 Plots

2.1 Cell Size

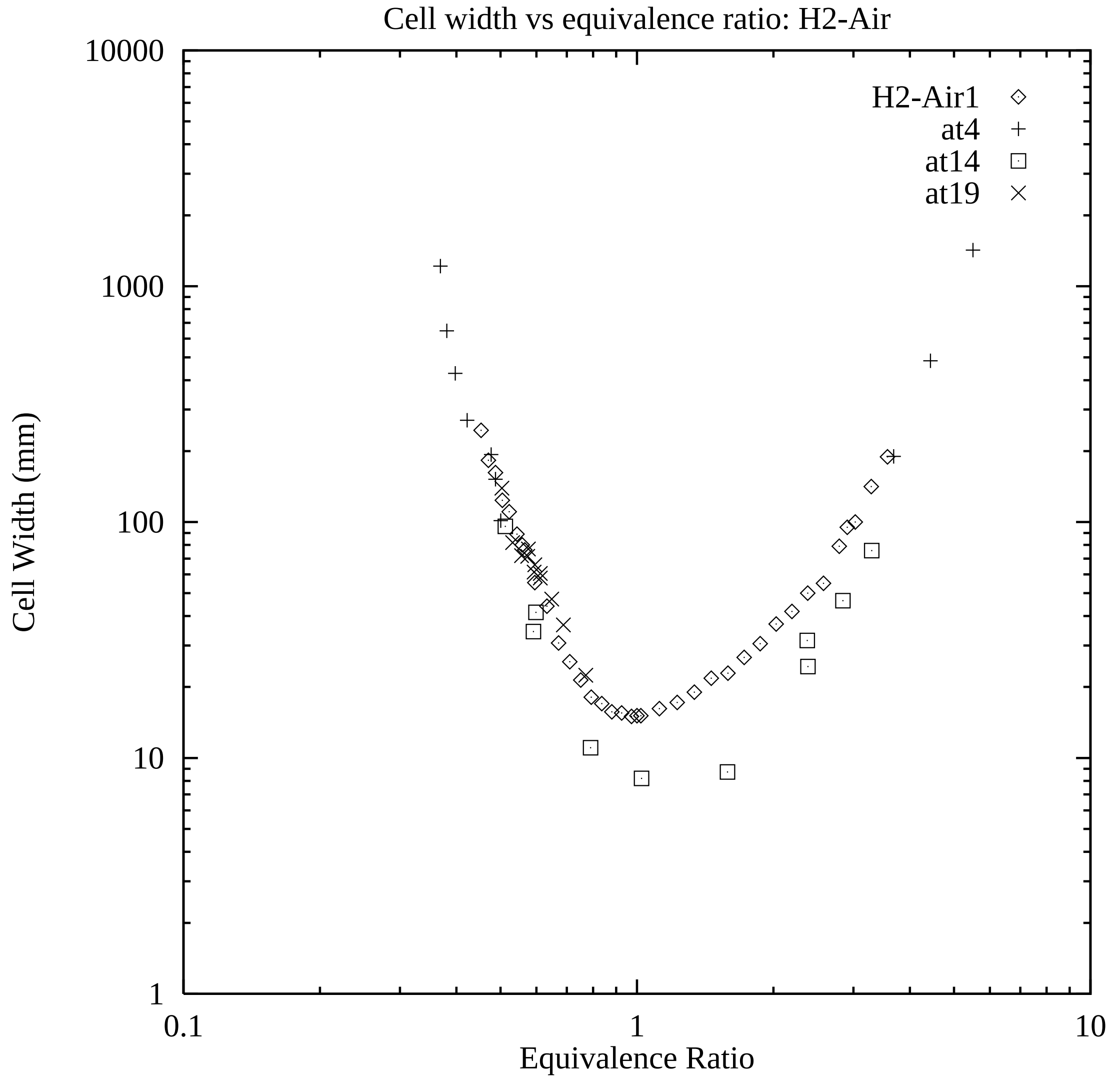

Figure 1: Cell width vs equivalence ratio; H2-Air

H2-Air1 - Table 30 [48, Guirao (1982)] T=293 K, P=101.3 kPa

at4 - Table 88 [113, Tieszen (1986)] T=298 K, P=101.3 kPa

at14 - Table 10 [29, Ciccarelli (1994)] T=300 K, P=100 kPa

at19 - Table 9 [16, Benedick (1984)] T=293 K, P=82.7 kPa

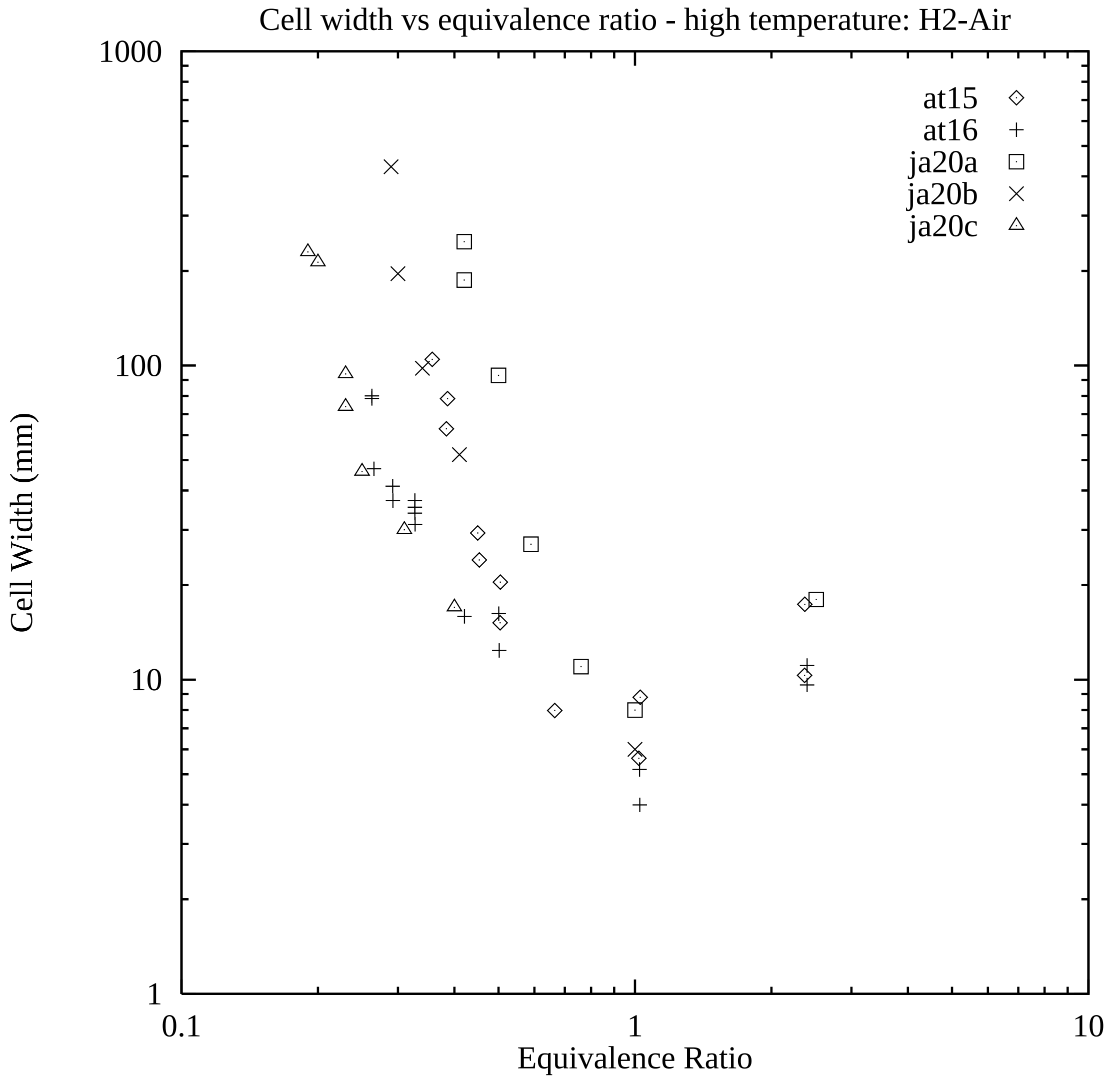

Figure 2: Cell width vs equivalence ratio - high temperature; H2-Air

at15 - Table 11 [29, Ciccarelli (1994)] T=500 K, P=100 kPa
at16 - Table 12 [29, Ciccarelli (1994)] T=650 K, P=100 kPa
ja20a - Table 13 [30, Ciccarelli (1997)] T=300 K, P=100 kPa
ja20b - Table 14 [30, Ciccarelli (1997)] T=500 K, P=100 kPa
ja20c - Table 15 [30, Ciccarelli (1997)] T=650 K, P=100 kPa

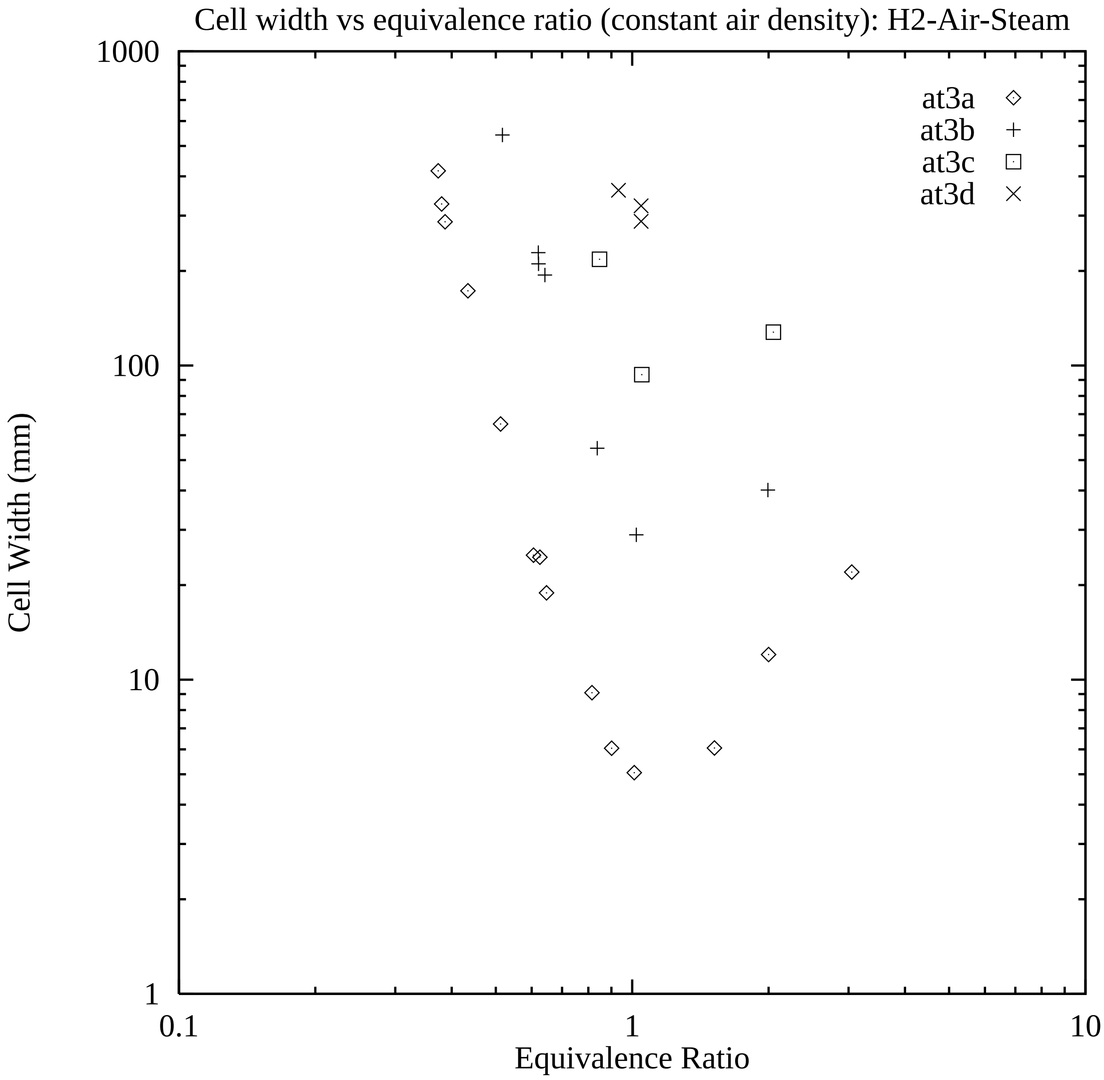

Figure 3: Cell width vs equivalence ratio (constant air density); H2-Air-Steam

at3a - Table 84 [113, Tieszen (1986)] T=373 K, P=150 - 300 kPa
at3b - Table 85 [113, Tieszen (1986)] T=373 K, P=150 - 304 kPa, 10% steam
at3c - Table 86 [113, Tieszen (1986)] T=373 K, P=150 - 304 kPa, 20% steam
at3d - Table 87 [113, Tieszen (1986)] T=373 K, P=150 - 304 kPa, 30% steam

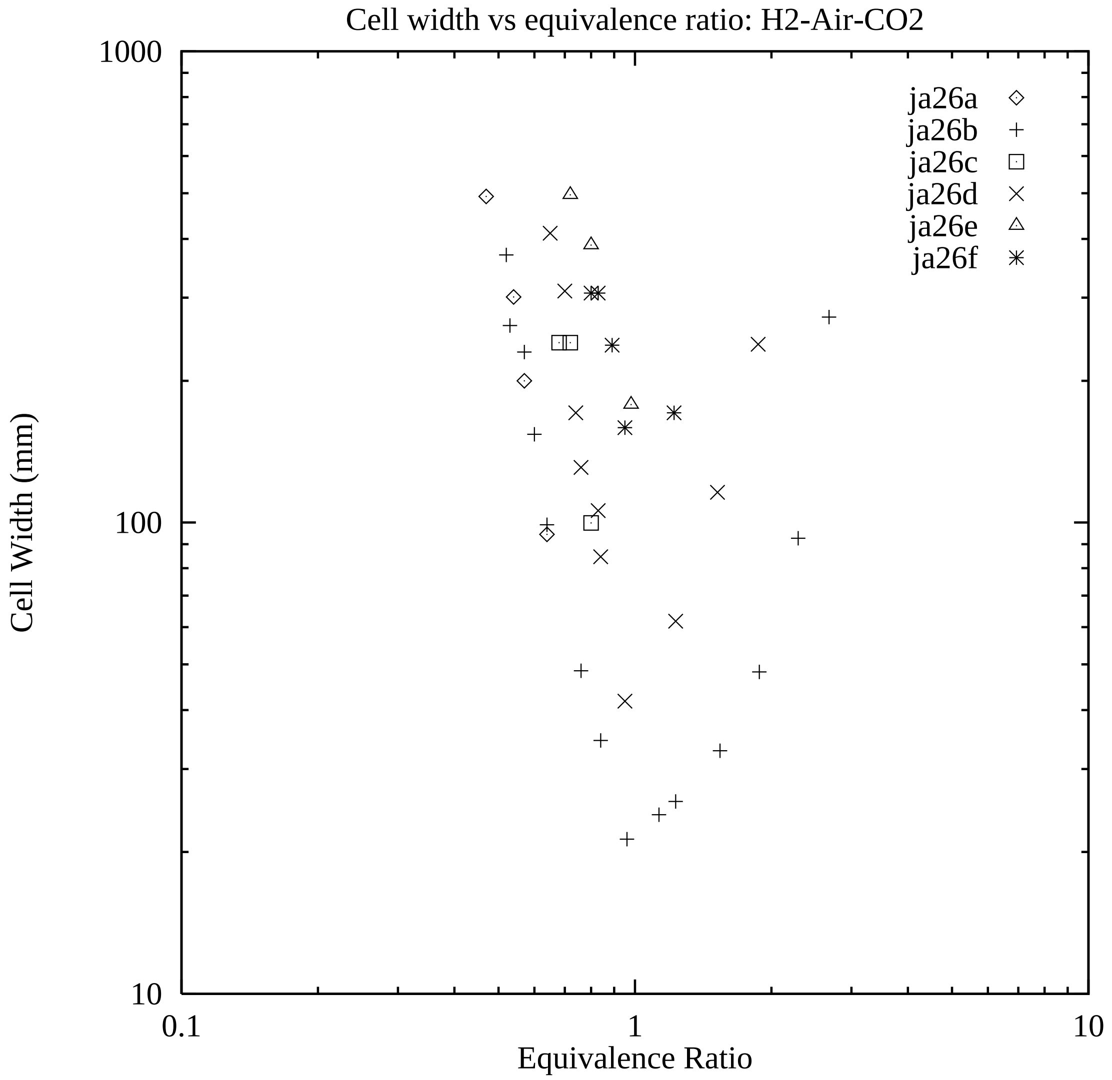

Figure 4: Cell width vs equivalence ratio; H2-Air-CO2

ja26a - Table 93 [112, Tieszen (1987)] T=293 K, P=100 kPa, 5% CO2

ja26b - Table 31 [49, Guirao (1989)] T=293 K, P=100 kPa, 5% CO2

ja26c - Table 94 [112, Tieszen (1987)] T=293 K, P=100 kPa, 10% CO2

ja26d - Table 32 [49, Guirao (1989)] T=293 K, P=100 kPa, 10% CO2

ja26e - Table 95 [112, Tieszen (1987)] T=293 K, P=100 kPa, 15% CO2

ja26f - Table 33 [49, Guirao (1989)] T=293 K, P=100 kPa, 15% CO2

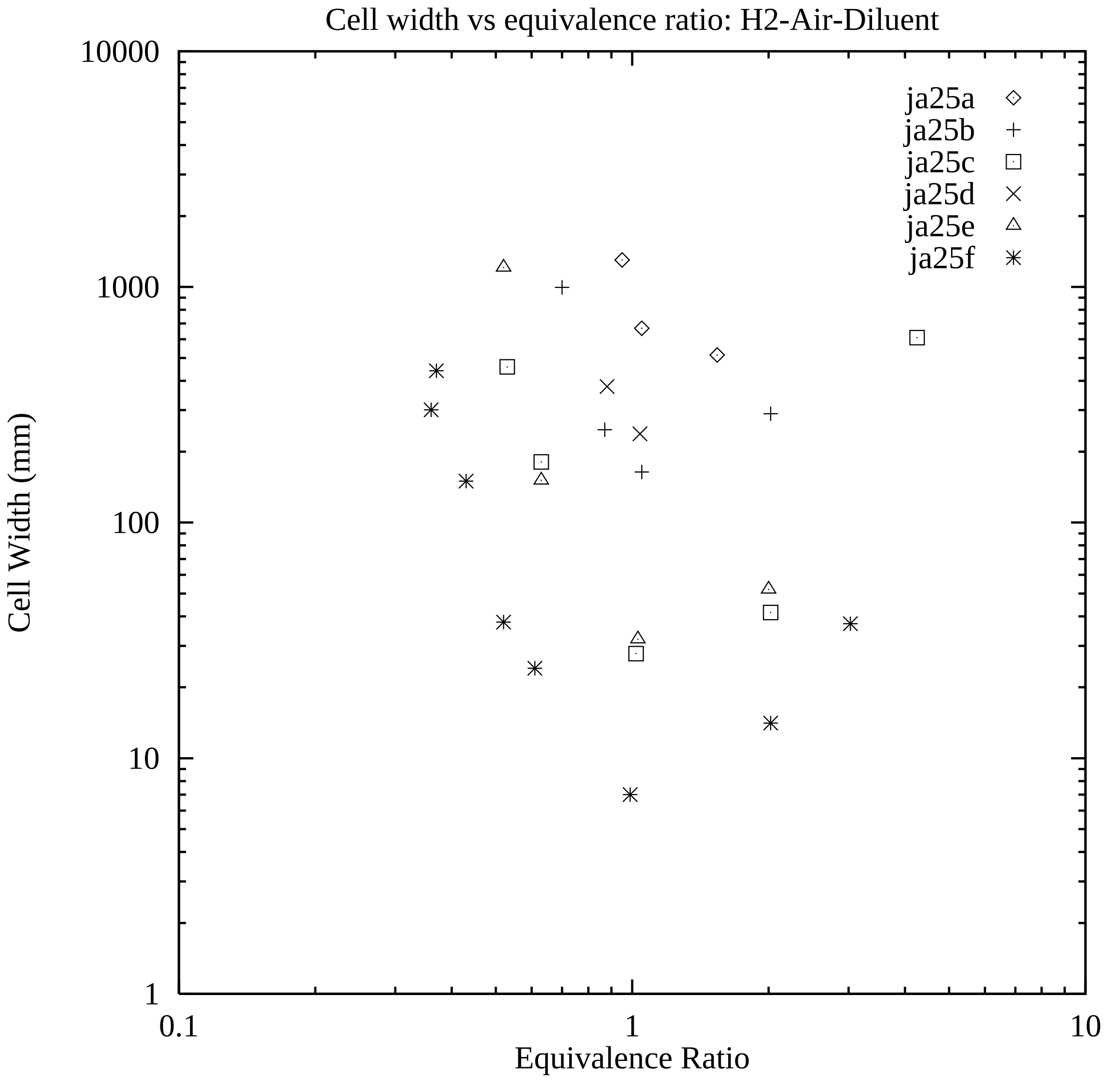

Figure 5: Cell width vs equivalence ratio; H2-Air-Diluent

ja25a - Table 67 [105, Stamps (1991)] T=393 K, P=100 kPa, 30% H2O

ja25b - Table 68 [105, Stamps (1991)] T=393 K, P=100 kPa, 20% H2O

ja25c - Table 69 [105, Stamps (1991)] T=393 K, P=100 kPa, 10% H2O

ja25d - Table 70 [105, Stamps (1991)] T=393 K, P=100 kPa, 20% CO2

ja25e - Table 71 [105, Stamps (1991)] T=393 K, P=100 kPa, 10% CO2

ja25f - Table 72 [105, Stamps (1991)] T=393 K, P=100 kPa

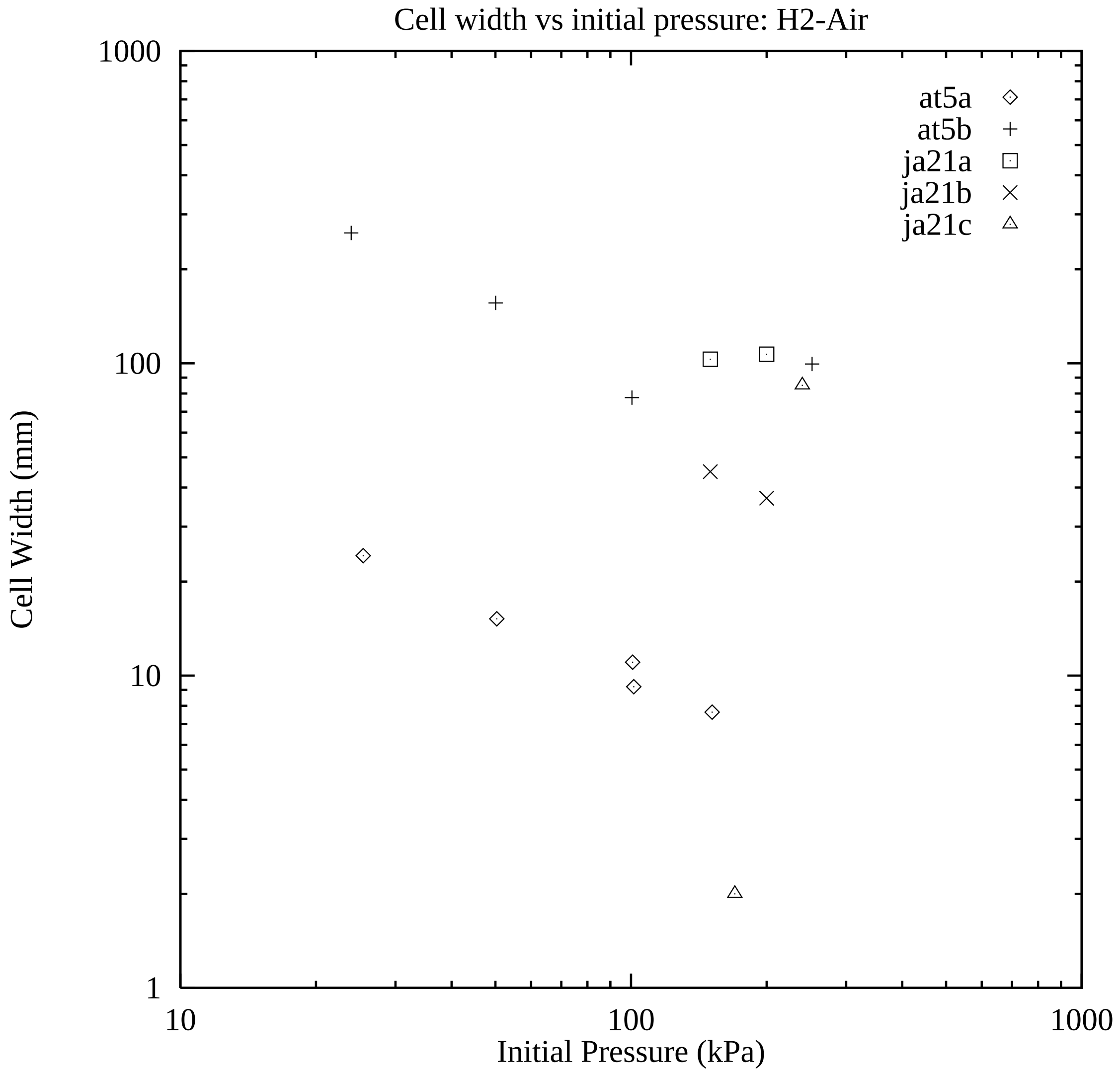

Figure 6: Cell width vs initial pressure; H2-Air

at5a - Table 61 [106, Stamps (1991)] T=293 K, ER=1

at5b - Table 62 [106, Stamps (1991)] T=293 K, ER=0.5

ja21a - Table 16 [30, Ciccarelli (1997)] T=650 K, ER=0.5, 20% H_2O

ja21b - Table 17 [30, Ciccarelli (1997)] T=650 K, ER=0.4, 30% H_2O

ja21c - Table 18 [30, Ciccarelli (1997)] T=650 K, ER=0.2

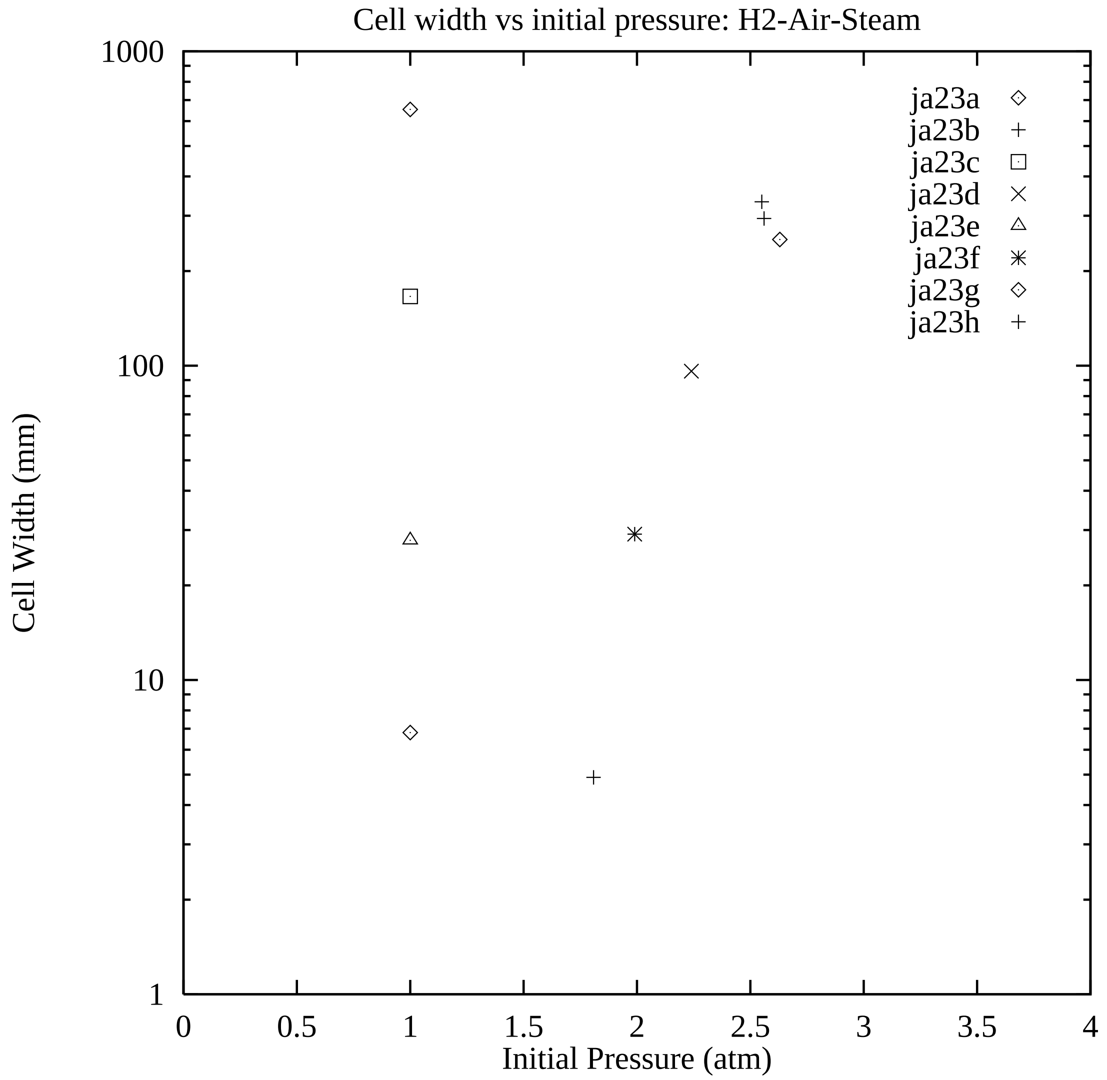

Figure 7: Cell width vs initial pressure; H2-Air-Steam

ja23a - Table 63 [106, Stamps (1991)] T=373 K, ER=1, 30% H2O

ja23b - Table 89 [113, Tieszen (1986)] T=373 K, ER=1, 30% H2O

ja23c - Table 64 [106, Stamps (1991)] T=373 K, ER=1, 20% H2O

ja23d - Table 90 [113, Tieszen (1986)] T=373 K, ER=1, 20% H2O

ja23e - Table 65 [106, Stamps (1991)] T=373 K, ER=1, 10% H2O

ja23f - Table 91 [113, Tieszen (1986)] T=373 K, ER=1, 10% H2O

ja23g - Table 66 [106, Stamps (1991)] T=373 K, ER=1

ja23h - Table 92 [113, Tieszen (1986)] T=373 K, ER=1

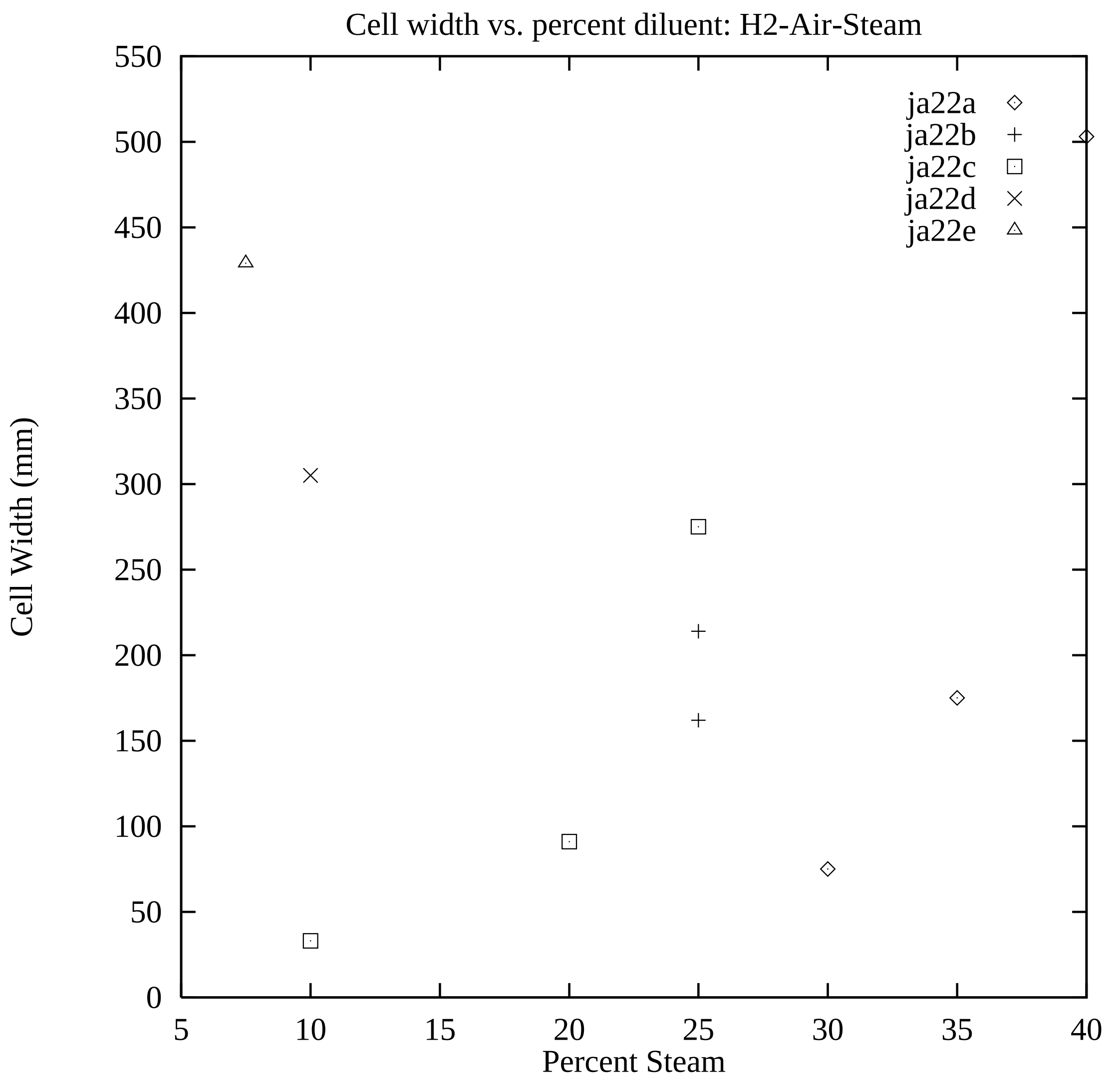

Figure 8: Cell width vs. percent diluent; H2-Air-Steam

ja22a - Table 19 [30, Ciccarelli (1997)] T=650 K, P=100 kPa, ER=1
ja22b - Table 20 [30, Ciccarelli (1997)] T=400 K, P=100 kPa, ER=1
ja22c - Table 21 [30, Ciccarelli (1997)] T=650 K, P=100 kPa, ER=0.5
ja22d - Table 22 [30, Ciccarelli (1997)] T=400 K, P=100 kPa, ER=0.5
ja22e - Table 23 [30, Ciccarelli (1997)] T=650 K, P=100 kPa, ER=0.3

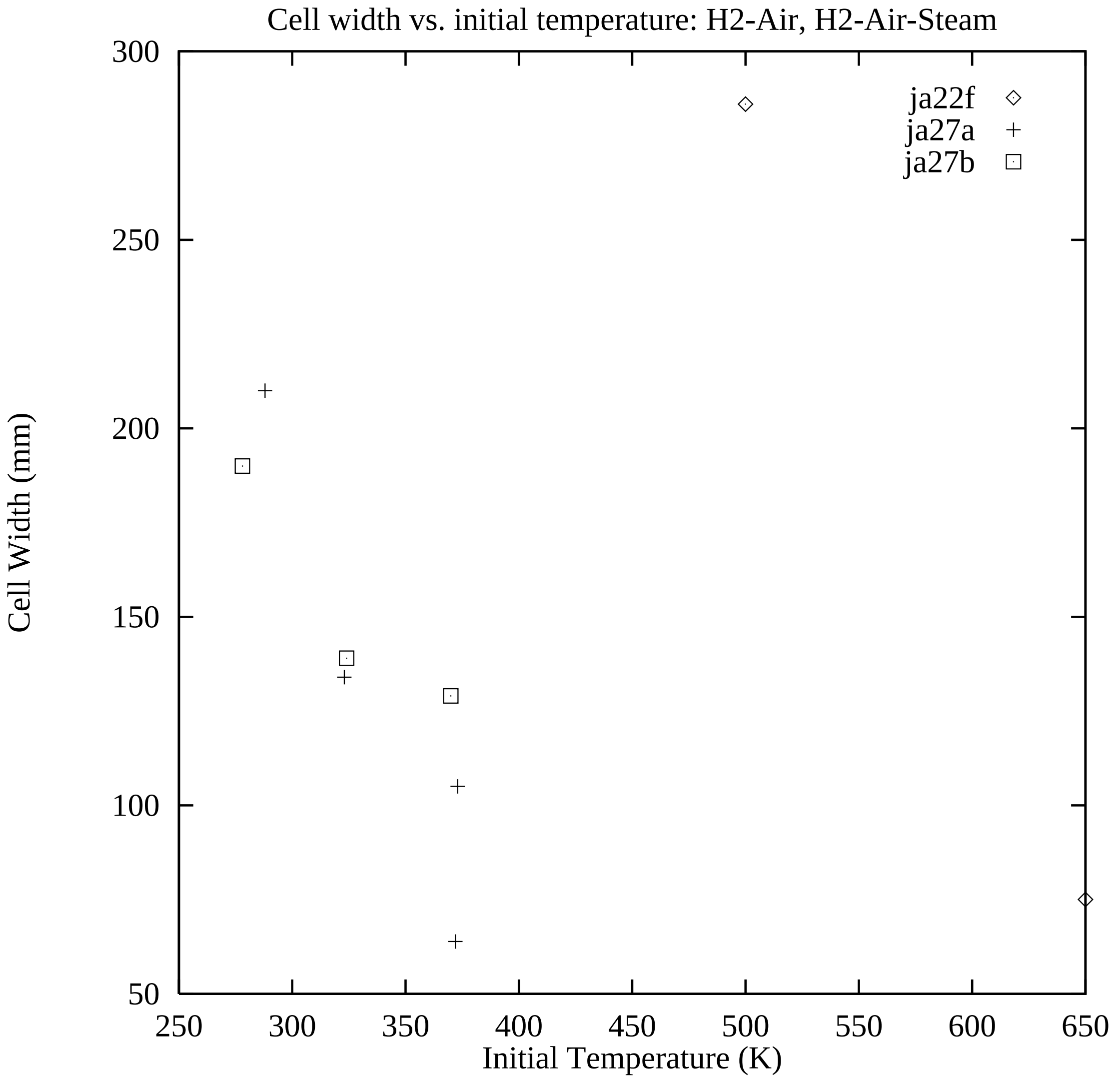

Figure 9: Cell width vs. initial temperature; H2-Air, H2-Air-Steam

ja22f - Table 24 [30, Ciccarelli (1997)] P=100 kPa, ER=1, 30% H2O

ja27a - Table 96 [112, Tieszen (1987)] P=100 kPa, ER=0.448-0.51

ja27b - Table 97 [112, Tieszen (1987)] P=100-102 kPa, ER=0.446-0.511

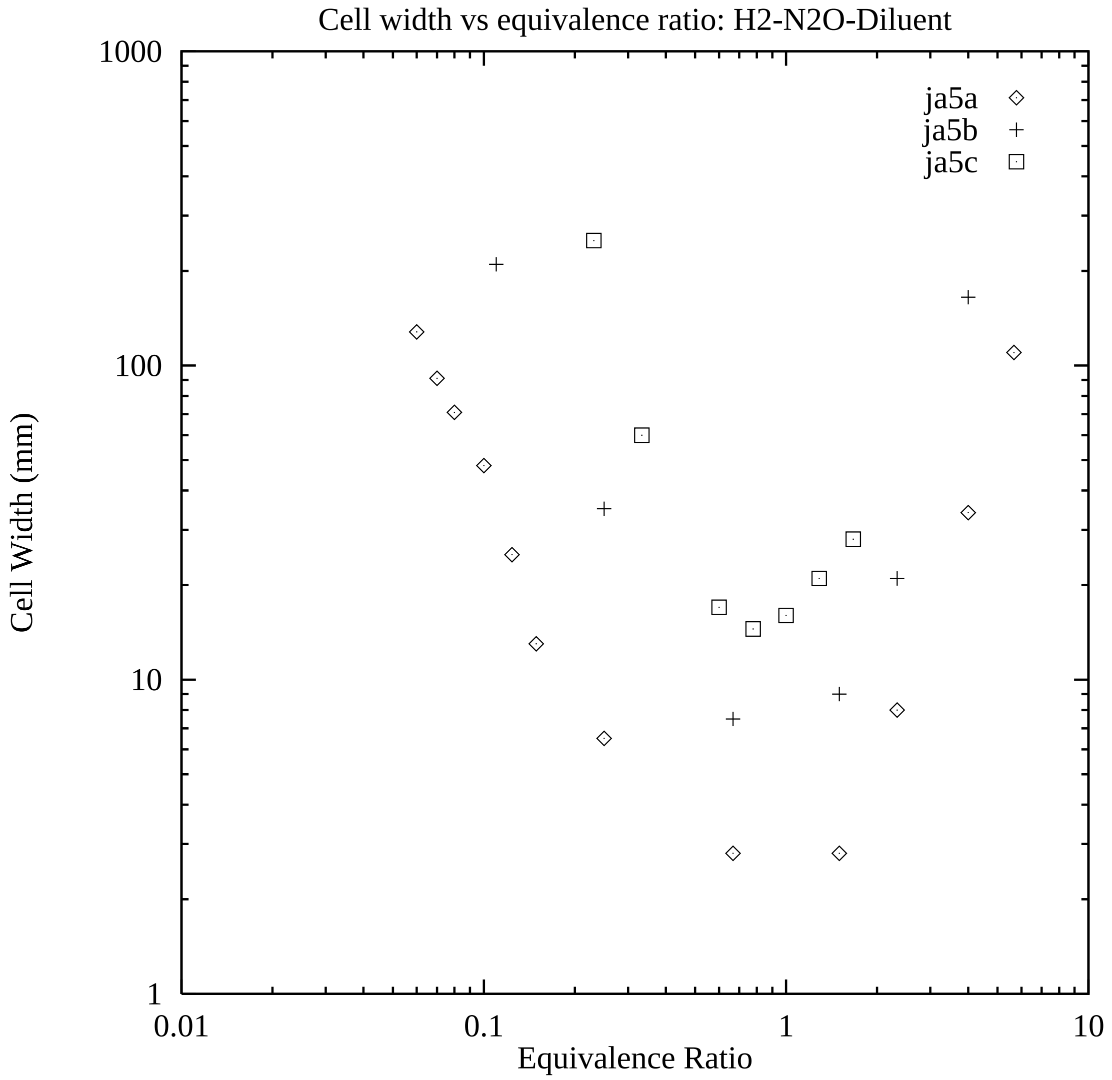

Figure 10: Cell width vs equivalence ratio; H2-N2O-Diluent

ja5a - Table 58 [98, Pfahl (1998)] T=293 K, P=70.9 kPa

ja5b - Table 59 [98, Pfahl (1998)] T=293 K, P=70.9 kPa, 30% N2

ja5c - Table 60 [98, Pfahl (1998)] T=293 K, P=70.9 kPa, 54.5% N2

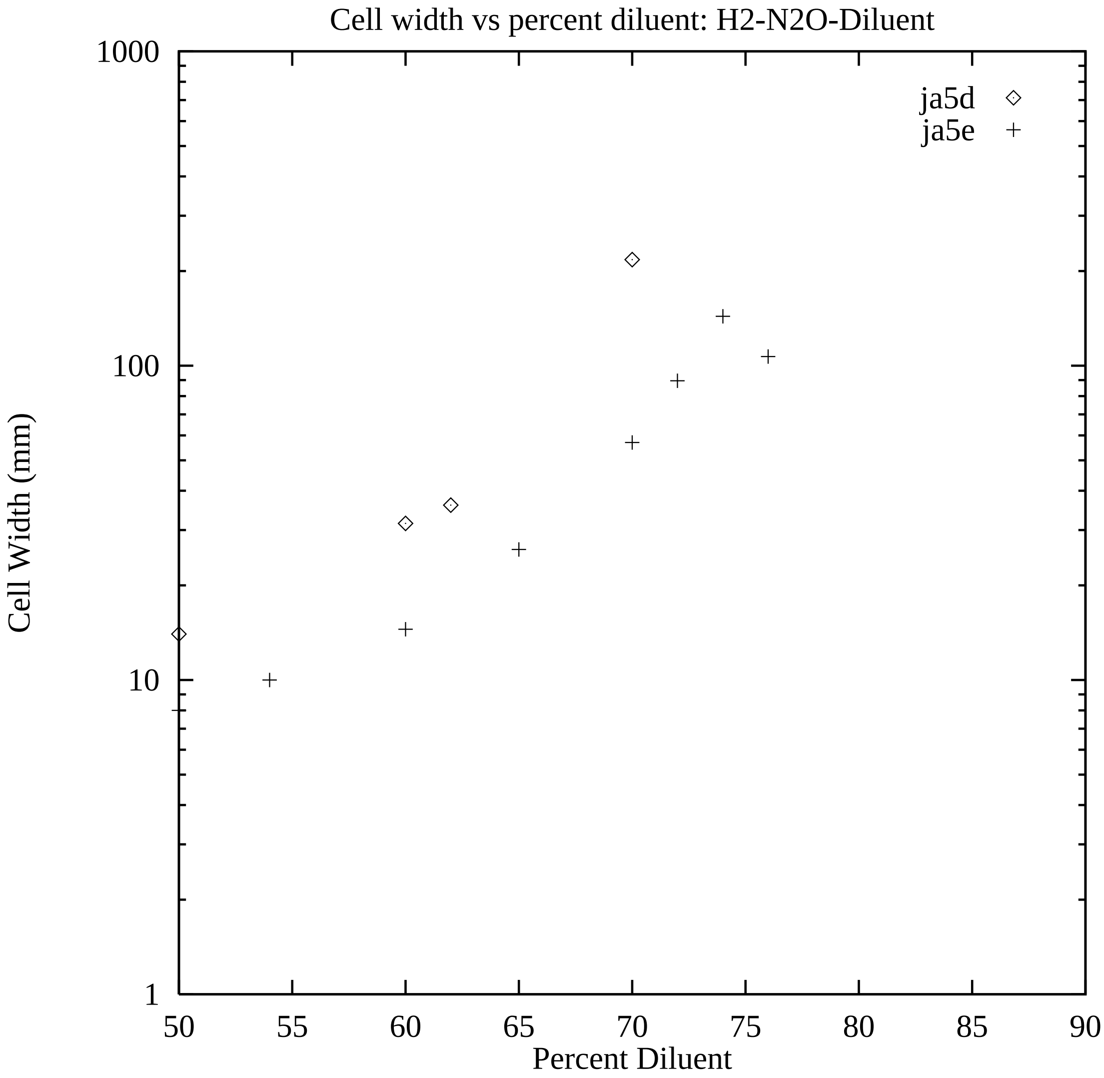

Figure 11: Cell width vs percent diluent; H2-N2O-Diluent

ja5d - Table 1 [3, Akbar (1997)] P=100 kPa, ER=1, 50-70% N2, Oxidizer=N2O
ja5e - Table 2 [3, Akbar (1997)] P=70-100 kPa, ER=0.07-0.39, 28-76% Air, Oxidizer=N2O

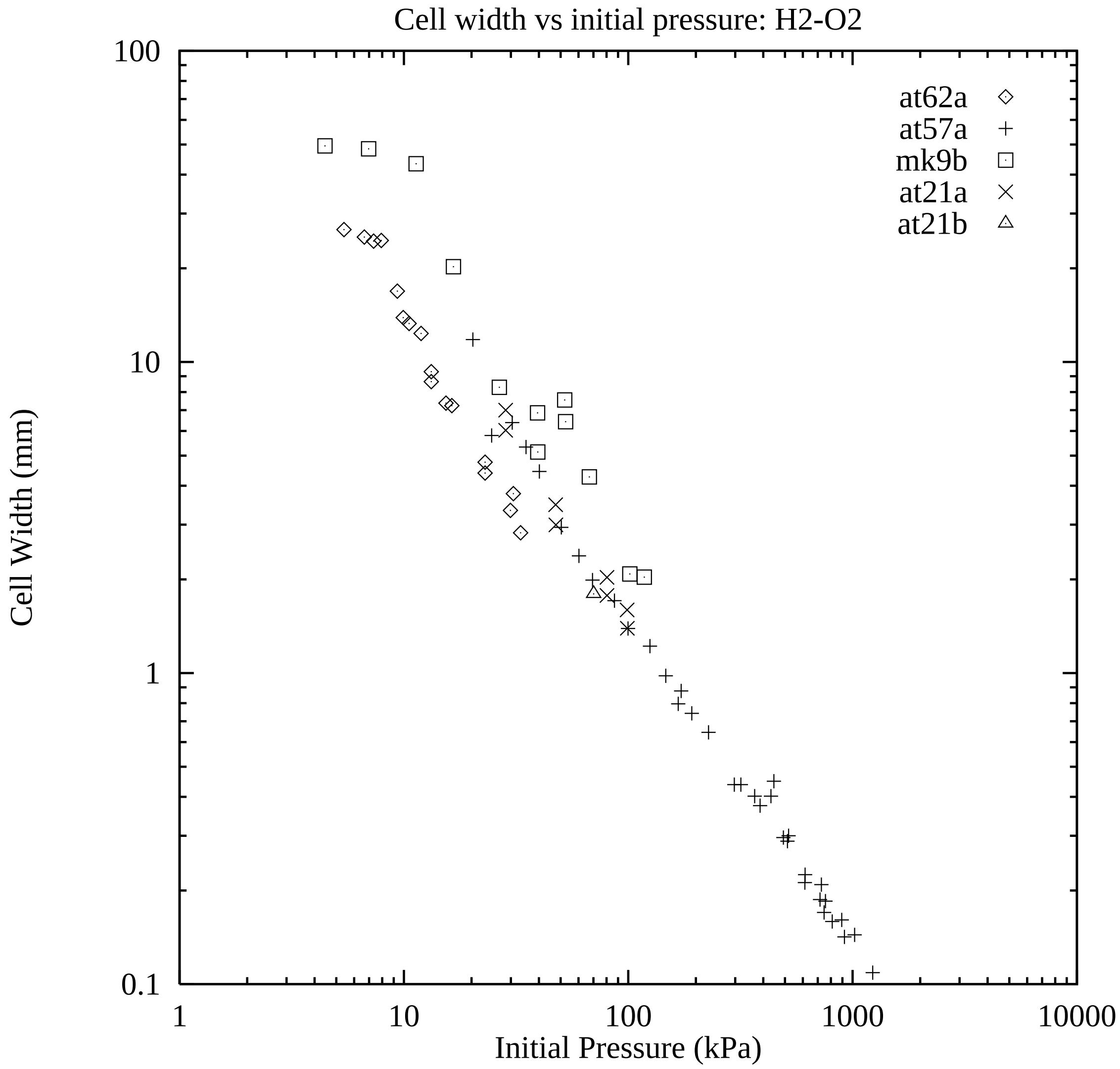

Figure 12: Cell width vs initial pressure; H2-O2

at62a - Table 76 [108, Strehlow (1969)] T=293 K, ER=1

at57a - Table 57 [79, Manzhalei (1974)] T=293 K, ER=1

mk9b - Table 25 [32, Denisov (1960)] T=293 K, ER=1

at21a - Table 26 [36, Desbordes (1990)] T=293 K, ER=1

at21b - Table 99 [130, Zitoun (1995)] T=293 K, ER=1

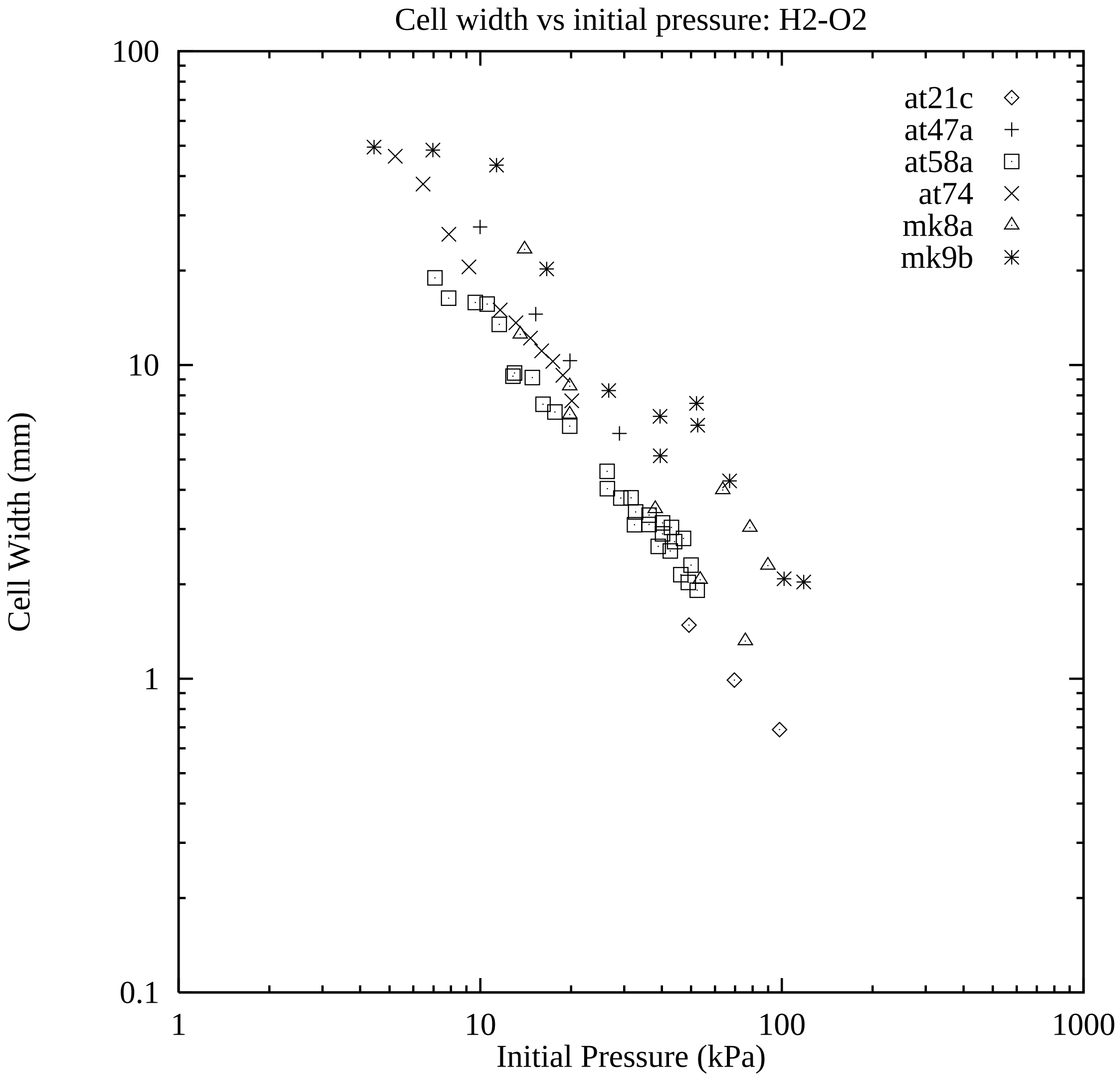

Figure 13: Cell width vs initial pressure; H2-O2

at21c - Table 100 [130, Zitoun (1995)] T=123 K, ER=1

at47a - Table 55 [68, Lee (1977)] T=293 K, ER=1

at58a - Table 6 [9, Barthel (1974)] T=298 K, ER=1

at74 - Table 43 [56, Knystautas (1982)] T=293 K, ER=1

mk8a - Table 98 [125, Voitsekhovskii (1966)] T=293 K, ER=1

mk9b - Table 25 [32, Denisov (1960)] T=293 K, ER=1

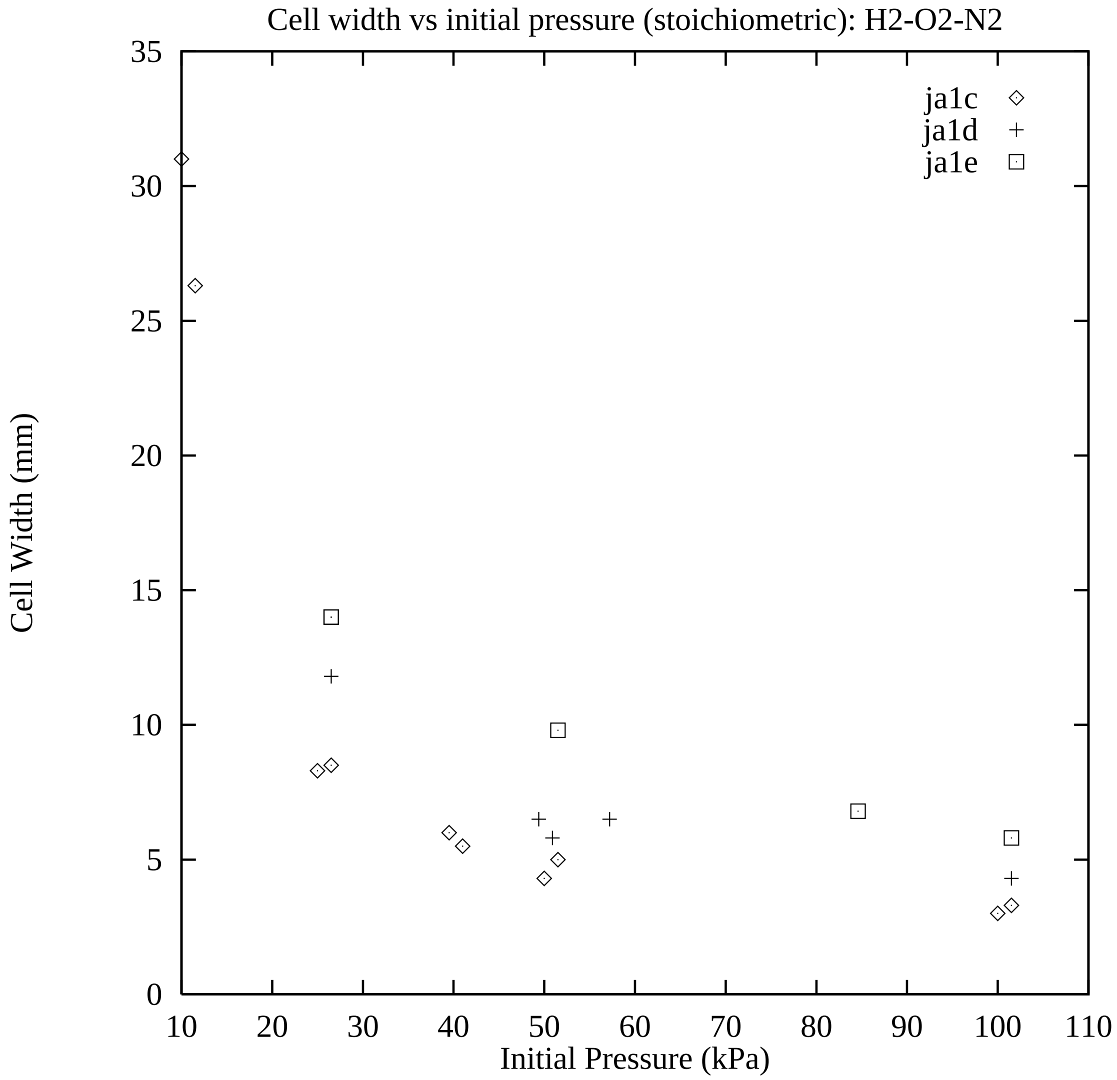

Figure 14: Cell width vs initial pressure (stoichiometric); H2-O2-N2

ja1c - Table 35 [53, Kaneshige (1999)] T=293 K, ER=1, 25% N2

ja1d - Table 36 [53, Kaneshige (1999)] T=293 K, ER=1, 40% N2

ja1e - Table 37 [53, Kaneshige (1999)] T=293 K, ER=1, 50% N2

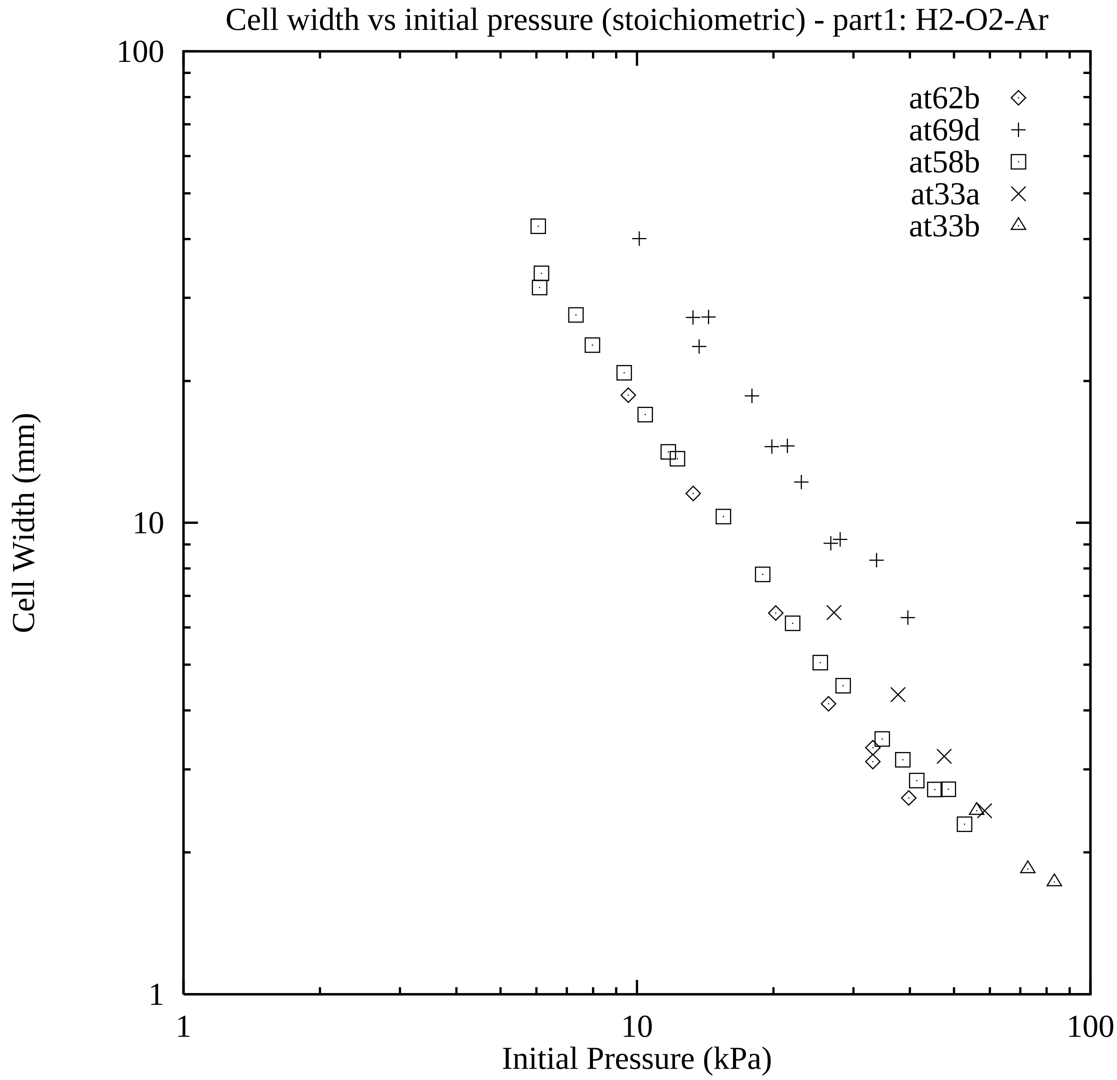

Figure 15: Cell width vs initial pressure (stoichiometric) - part1; H2-O2-Ar

at62b - Table 77 [108, Strehlow (1969)] T=293 K, ER=1, 40% Ar

at69d - Table 80 [110, Strehlow (1967)] T=293 K, ER=1, 70% Ar

at58b - Table 7 [9, Barthel (1974)] T=298 K, ER=1, 40% Ar

at33a - Table 3 [5, Anderson (1992)] T=293 K, ER=1, 55.6% Ar

at33b - Table 4 [5, Anderson (1992)] T=293 K, ER=1, 50% Ar

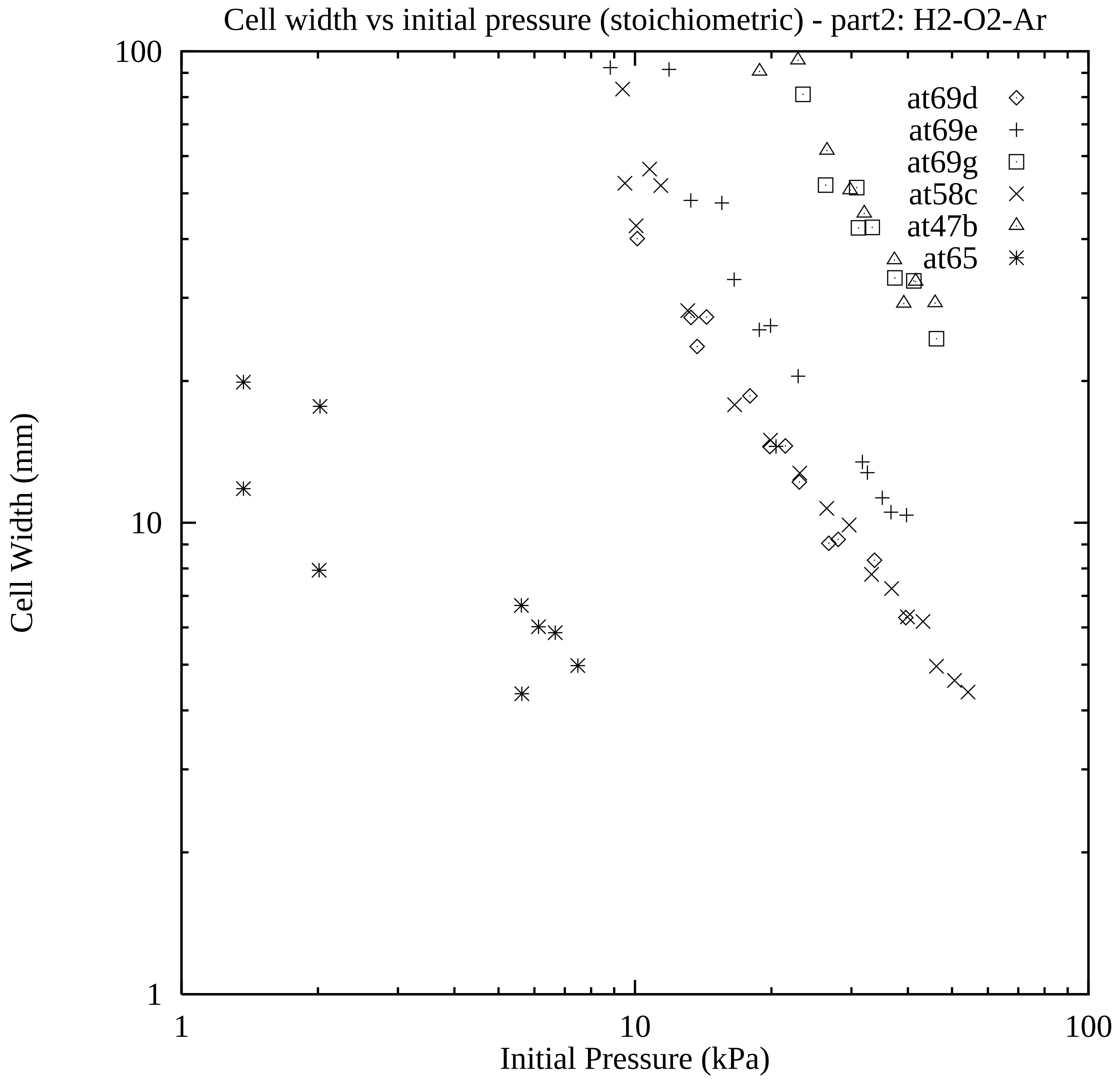

Figure 16: Cell width vs initial pressure (stoichiometric) - part2; H2-O2-Ar

at69d - Table 80 [110, Strehlow (1967)] T=293 K, ER=1, 70% Ar

at69e - Table 81 [110, Strehlow (1967)] T=293 K, ER=1, 77.5% Ar

at69g - Table 82 [110, Strehlow (1967)] T=293 K, ER=1, 85% Ar

at58c - Table 8 [9, Barthel (1974)] T=298 K, ER=1, 70% Ar

at47b - Table 56 [68, Lee (1977)] T=293 K, ER=1, 85% Ar

at65 - Table 83 [111, Strehlow (1969)] T=600 - 800 K, ER=1, 70% Ar

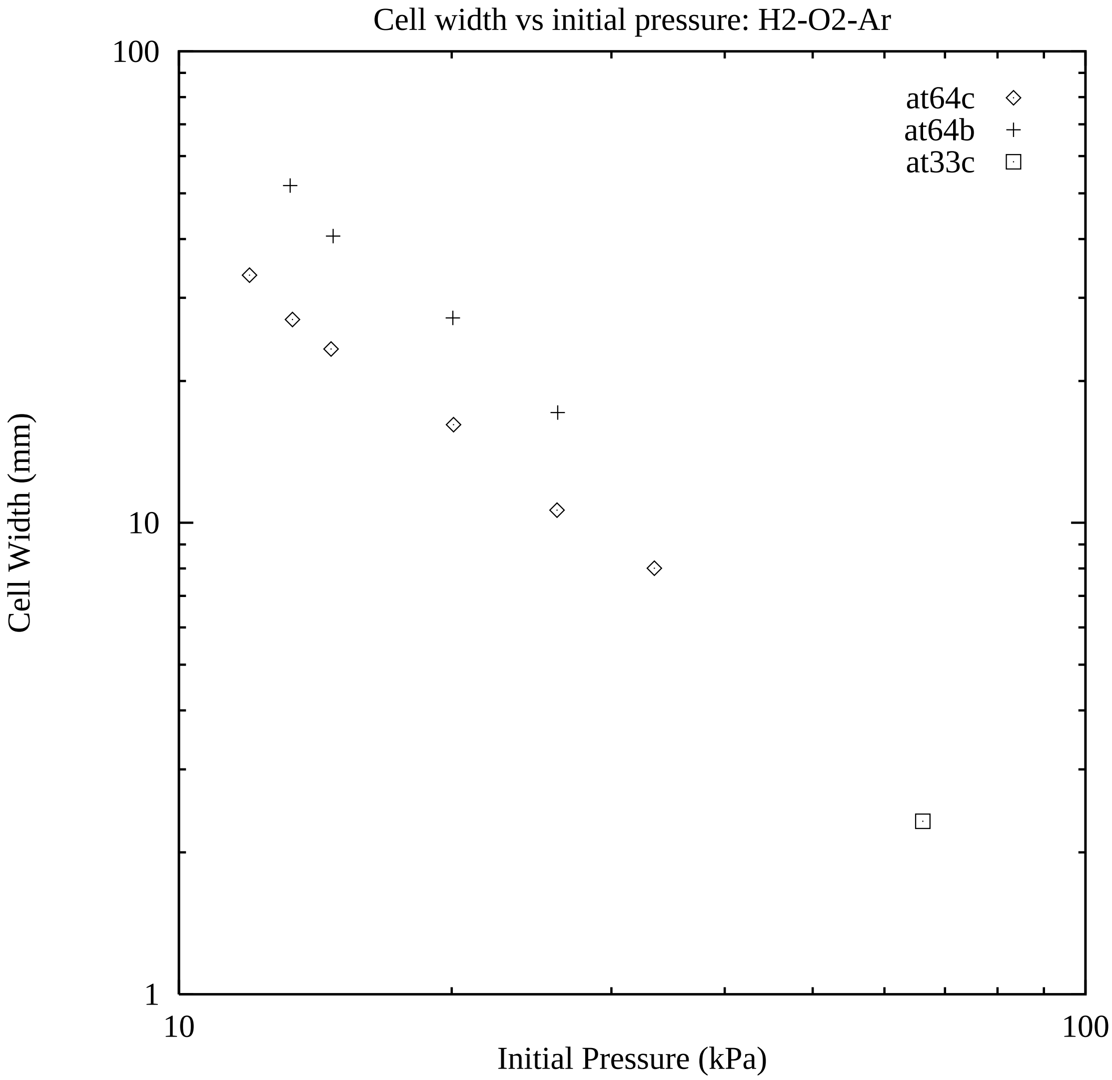

Figure 17: Cell width vs initial pressure; H2-O2-Ar

at64c - Table 73 [111, Strehlow (1969)] T=293 K, ER=0.36, 60% Ar

at64b - Table 74 [111, Strehlow (1969)] T=293 K, ER=2.12, 60% Ar

at33c - Table 5 [5, Anderson (1992)] T=293 K, ER=0.75, 50% Ar

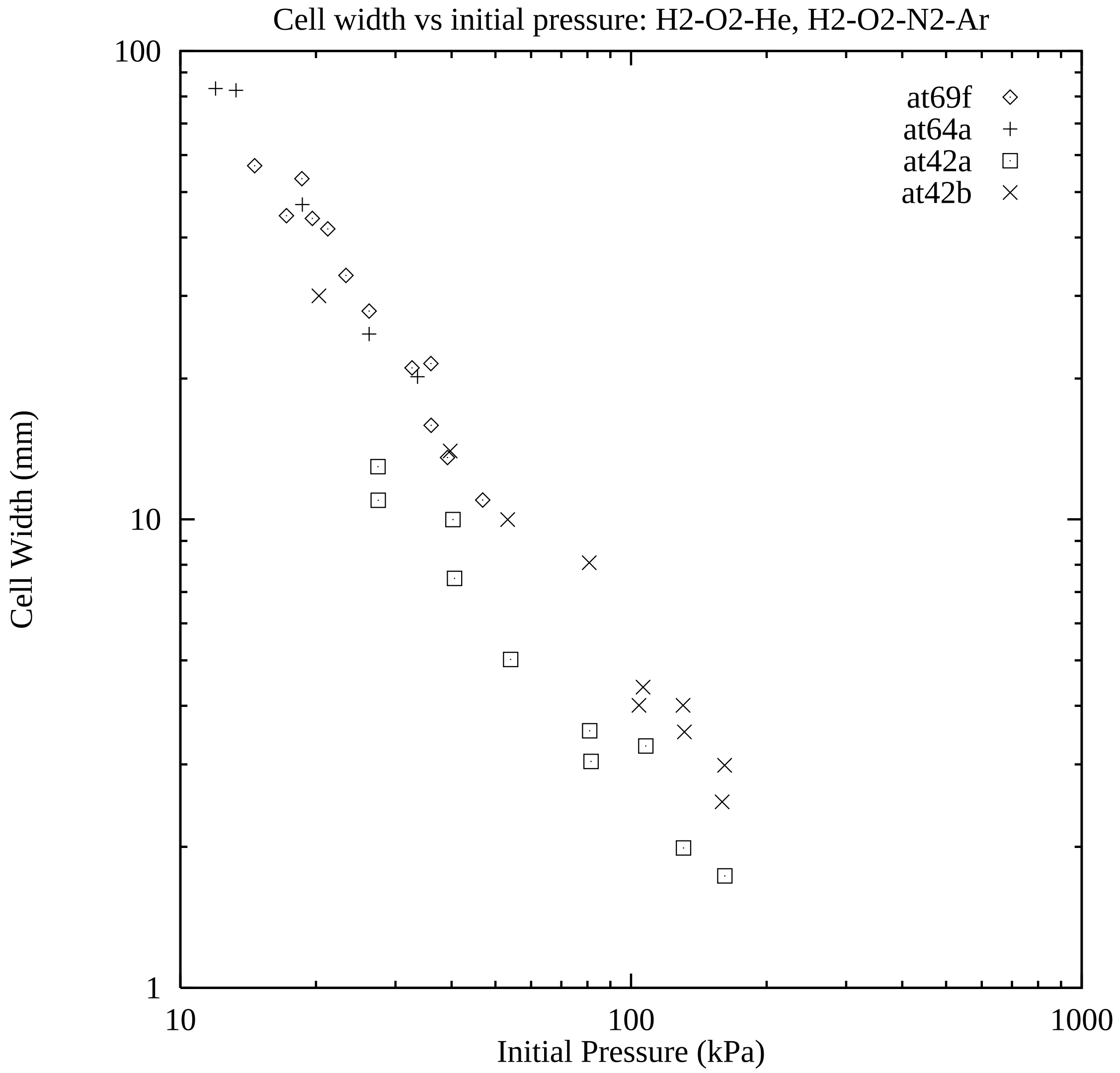

Figure 18: Cell width vs initial pressure; H2-O2-He, H2-O2-N2-Ar

at69f - Table 78 [110, Strehlow (1967)] T=293 K, ER=1, 70% He

at64a - Table 75 [111, Strehlow (1969)] T=293 K, ER=1, 76% 3.75Ar+N2

at42a - Table 53 [61, Kumar (1990)] T=295 K, ER=1, 55% He

at42b - Table 54 [61, Kumar (1990)] T=295 K, ER=1, 70% He

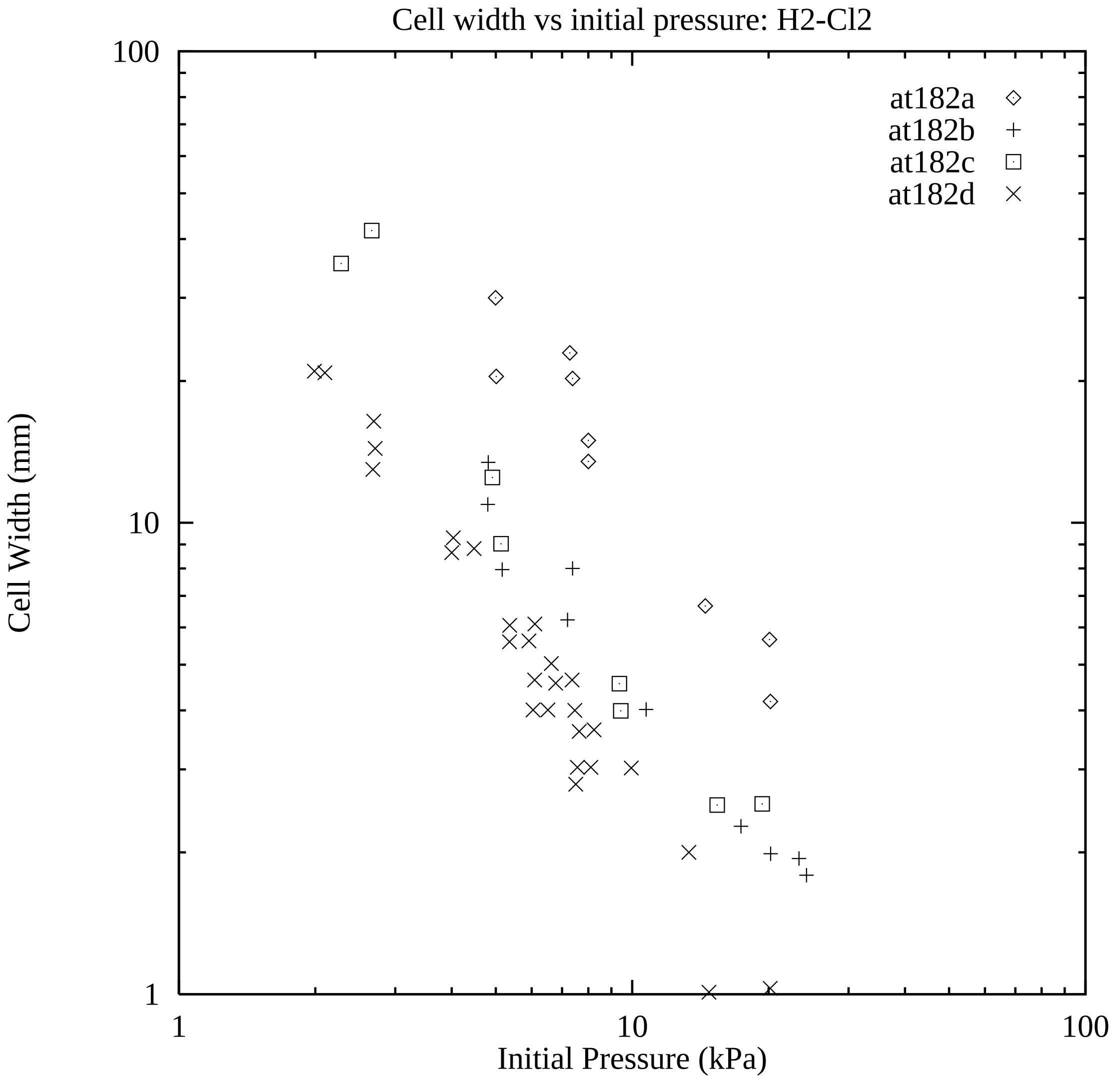

Figure 19: Cell width vs initial pressure; H2-Cl2

at182a - Table 38 [55, Knystautas (1988)] ER=0.56
at182b - Table 39 [55, Knystautas (1988)] ER=0.67
at182c - Table 40 [55, Knystautas (1988)] ER=1.5
at182d - Table 41 [55, Knystautas (1988)] ER=1

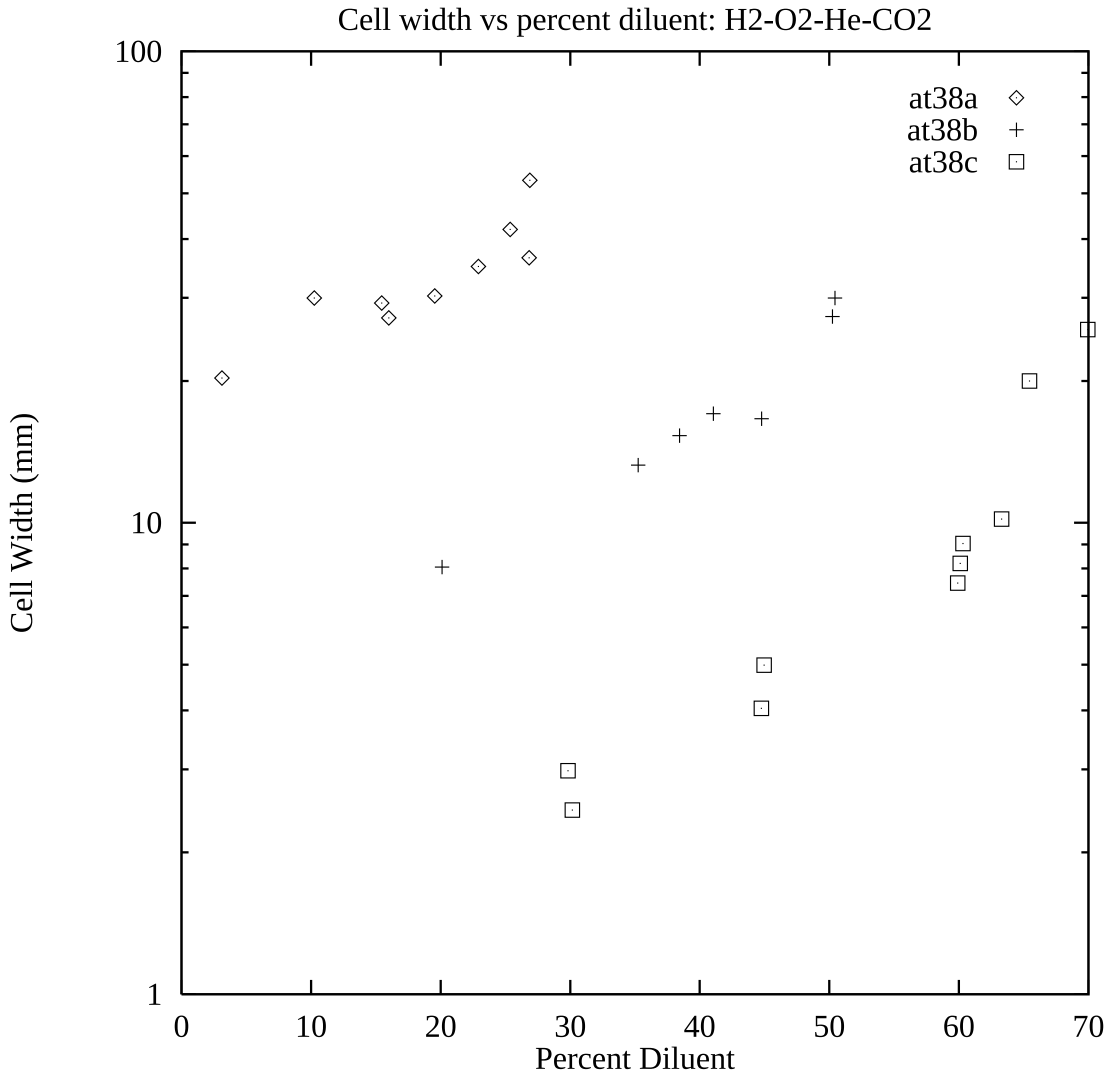

Figure 20: Cell width vs percent diluent; H2-O2-He-CO2

at38a - Table 46 [61, Kumar (1990)] T=295 K, P=106.6 kPa, ER=1, 30-55% He and CO2, Fuel=H2
at38b - Table 47 [61, Kumar (1990)] T=295 K, P=106.6 kPa, ER=1, 40-65% He and CO2, Fuel=H2
at38c - Table 48 [61, Kumar (1990)] T=295 K, P=106.6 kPa, ER=1, 35-70% He and CO2, Fuel=H2

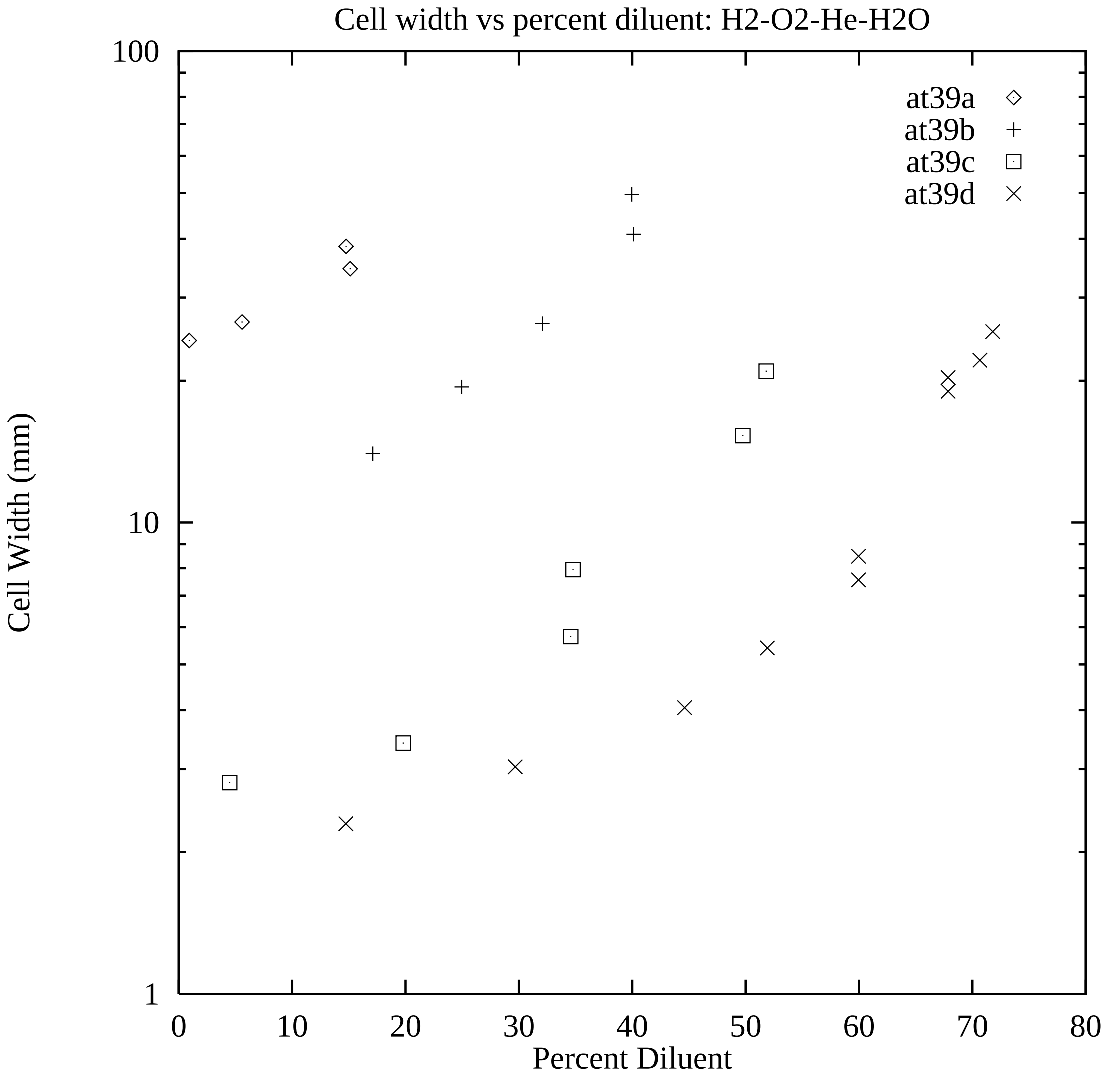

Figure 21: Cell width vs percent diluent; H2-O2-He-H2O

at39a - Table 49 [61, Kumar (1990)] T=353 K, P=106.6 kPa, ER=1, 5-70% He and H2O, Fuel=H2
at39b - Table 50 [61, Kumar (1990)] T=353 K, P=106.6 kPa, ER=1, 5-70% He and H2O, Fuel=H2
at39c - Table 51 [61, Kumar (1990)] T=353 K, P=106.6 kPa, ER=1, 5-70% He and H2O, Fuel=H2
at39d - Table 52 [61, Kumar (1990)] T=353 K, P=106.6 kPa, ER=1, 5-70% He and H2O, Fuel=H2

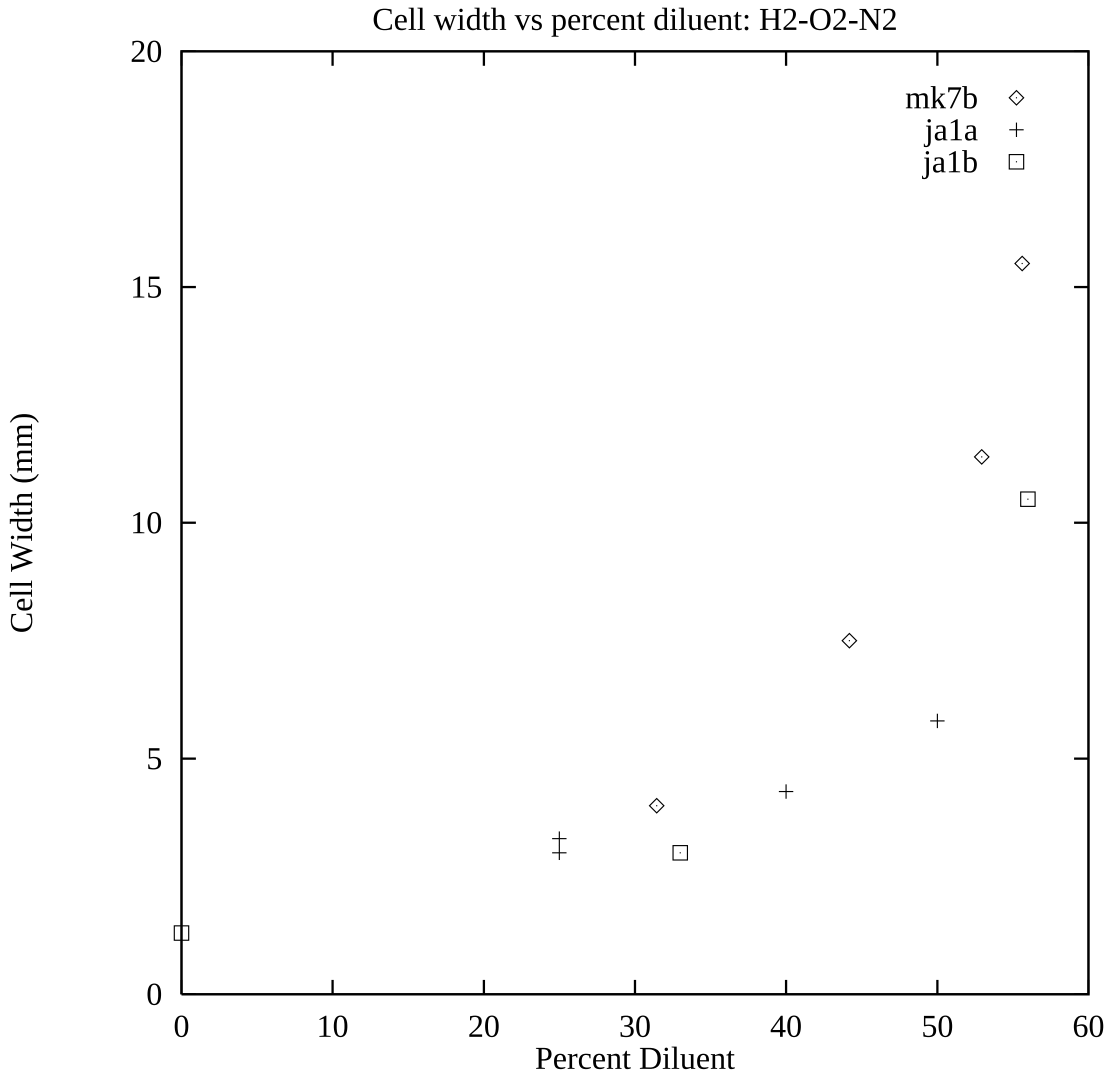

Figure 22: Cell width vs percent diluent; H2-O2-N2

mk7b - Table 42 [56, Knystautas (1982)] T=293 K, P=101.3 kPa, ER=1, Fuel=H2
ja1a - Table 34 [53, Kaneshige (1999)] T=293 K, P=100 kPa, ER=1, Fuel=H2
ja1b - Table 101 [39, EDL (unpublished)] T=293 K, P=100 kPa, ER=1, Fuel=H2

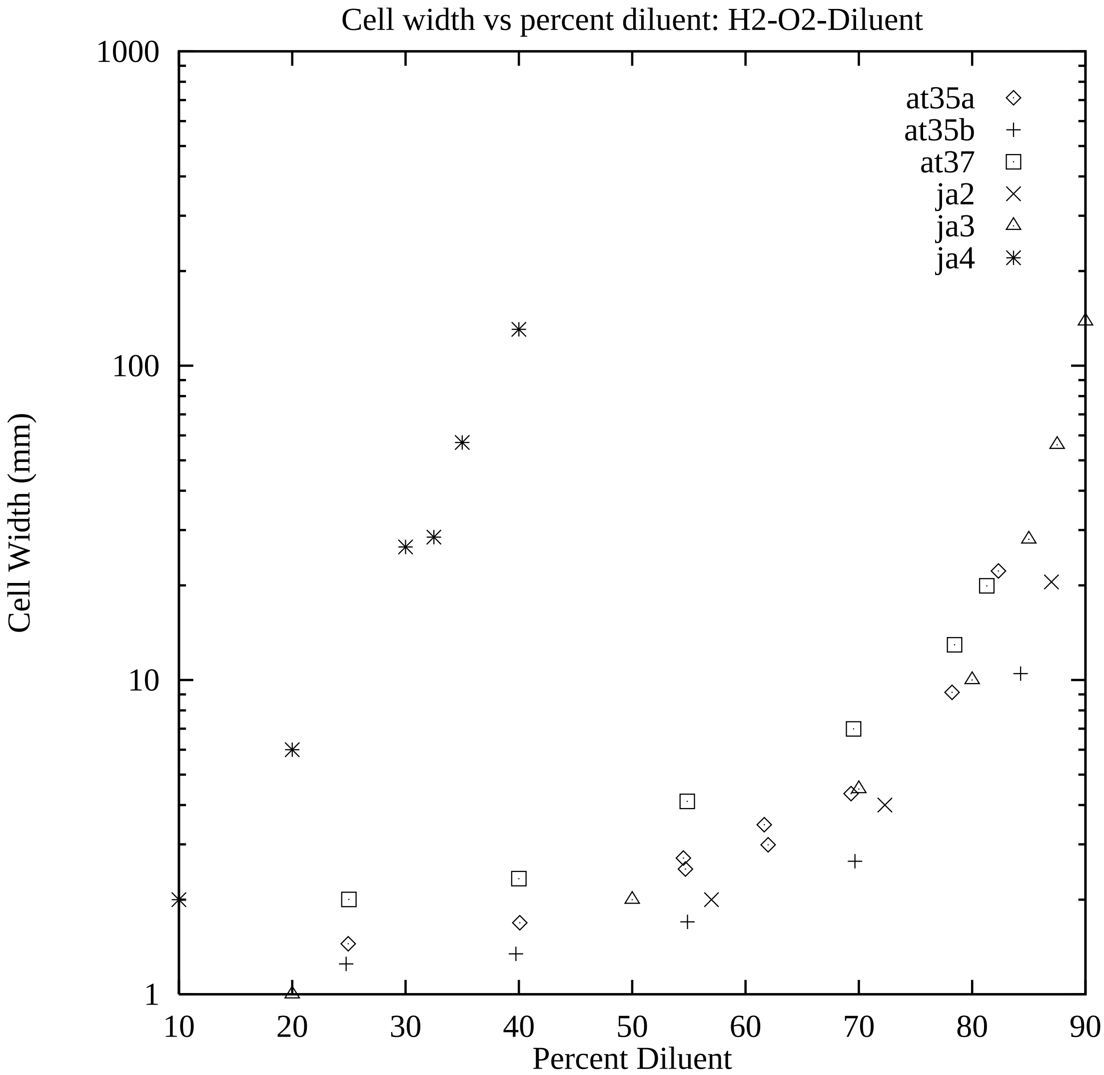

Figure 23: Cell width vs percent diluent; H2-O2-Diluent

at35a - Table 44 [61, Kumar (1990)] T=293 K, P=106.6 kPa, ER=1, 25-85% He, Fuel=H2

at35b - Table 45 [61, Kumar (1990)] T=293 K, P=106.6 kPa, ER=1, 25-85% Ar, Fuel=H2

at37 - Table 209 [61, Kumar (1990)] T=293 K, P=106.6 kPa, ER=1, 25-85% He, Fuel=Deuterium

ja2 - Table 27 [39, EDL (unpublished)] T=293 K, P=100 kPa, ER=1, 57-87% Ar, Fuel=H2

ja3 - Table 28 [39, EDL (unpublished)] T=293 K, P=100 kPa, ER=1, 20-90% He, Fuel=H2

ja4 - Table 29 [39, EDL (unpublished)] T=293 K, P=100 kPa, ER=1, 10-40% CO2, Fuel=H2

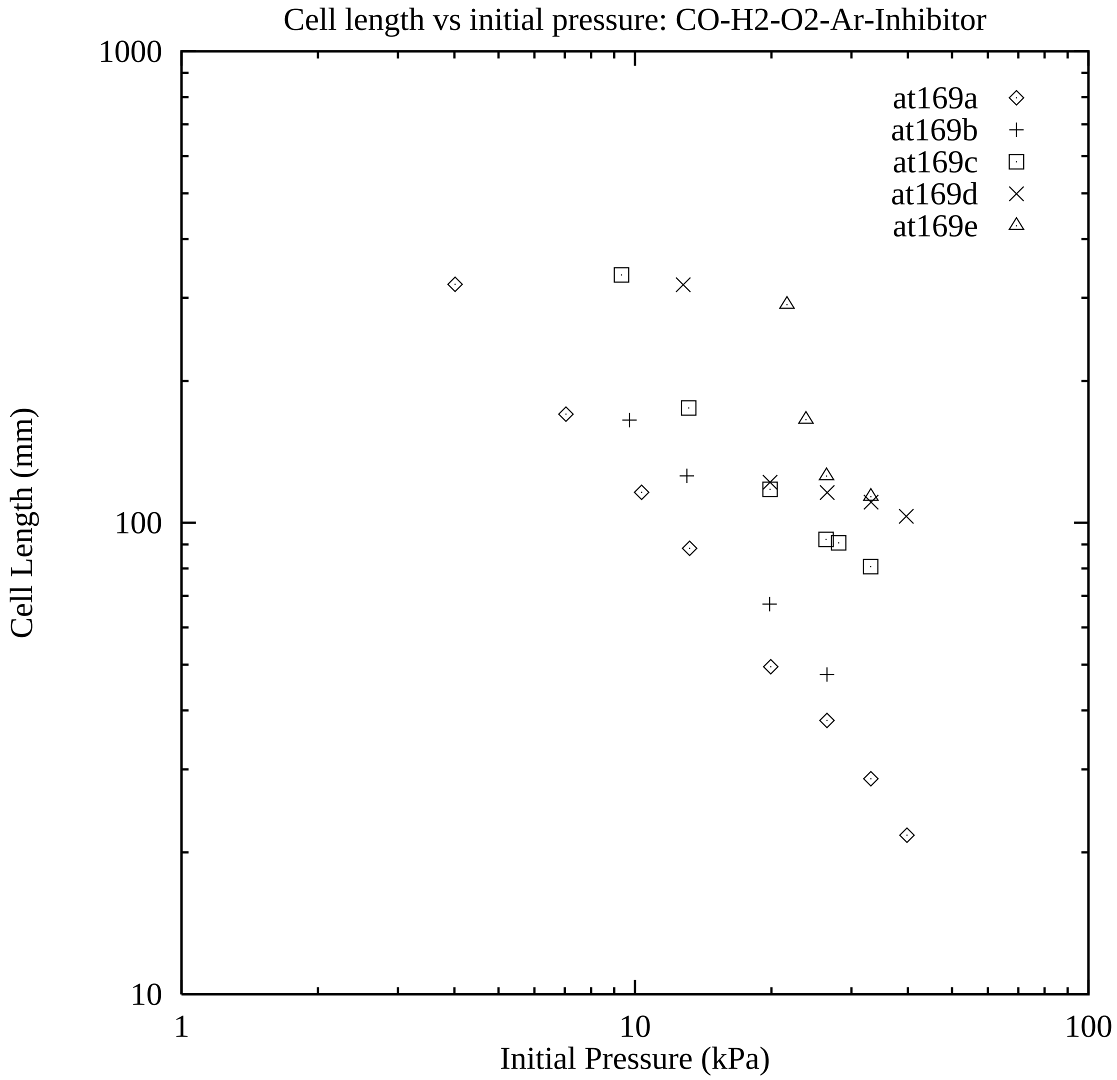

Figure 24: Cell length vs initial pressure; CO-H2-O2-Ar-Inhibitor

at169a - Table 267 [72, Libouton (1975)] ER=1, 30% Ar

at169b - Table 270 [72, Libouton (1975)] ER=1, 30% 11.88Ar+CF3Cl

at169c - Table 269 [72, Libouton (1975)] ER=1, 30% 11.88Ar+CF2Cl2

at169d - Table 268 [72, Libouton (1975)] ER=1, 30% 11.88Ar+CFCl3

at169e - Table 266 [72, Libouton (1975)] ER=1, 30% 11.88Ar+CF3Br

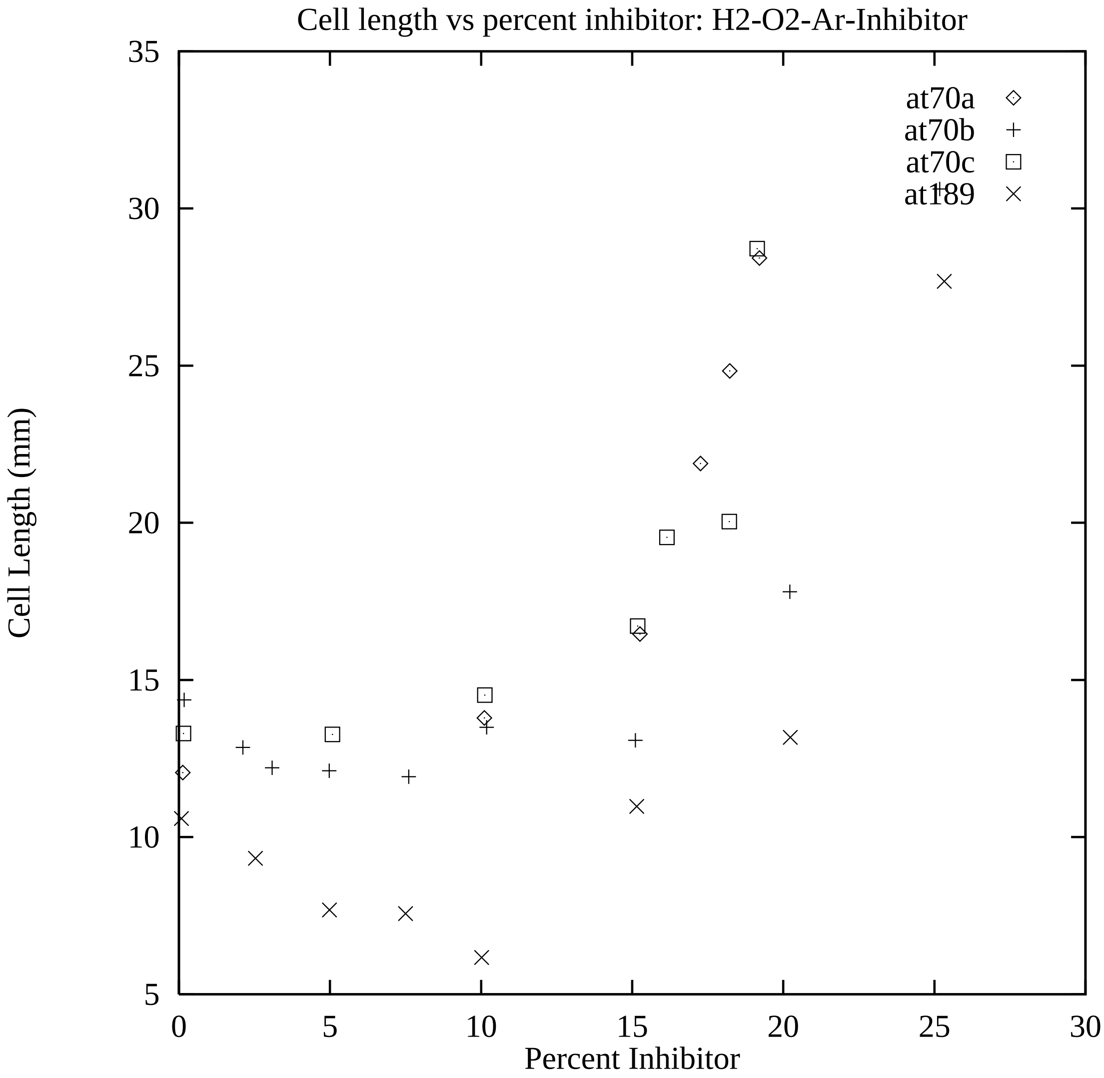

Figure 25: Cell length vs percent inhibitor; H2-O2-Ar-Inhibitor

at70a - Table 235 [94, Nzeyimana (1991)] P=26.7 kPa, ER=0.8, 50% Ar+CF4
at70b - Table 236 [94, Nzeyimana (1991)] P=26.7 kPa, ER=1, 50% Ar+CF4
at70c - Table 237 [94, Nzeyimana (1991)] P=26.7 kPa, ER=1.2, 50% Ar+CF4
at189 - Table 234 [71, Lefebvre (1993)] P=26.7 kPa, ER=1, 50% Ar+CF3H

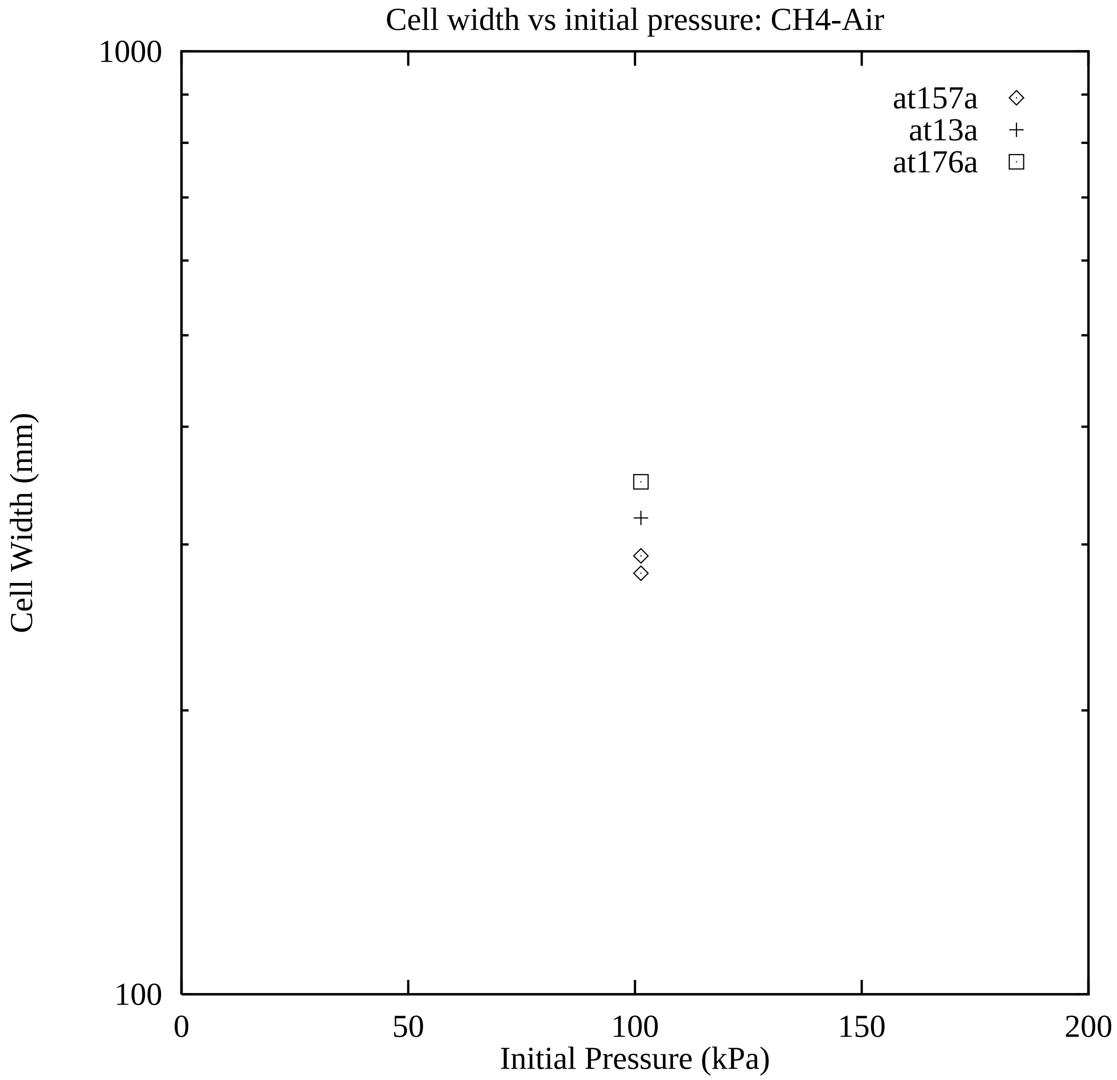

Figure 26: Cell width vs initial pressure; CH4-Air

at157a - Table 116 [84, Moen (1984)] T=293 K, ER=1

at13a - Table 112 [54, Knystautas (1984)] T=293 K, ER=1

at176a - Table 111 [13, Beeson (1991)] T=293 K, ER=1

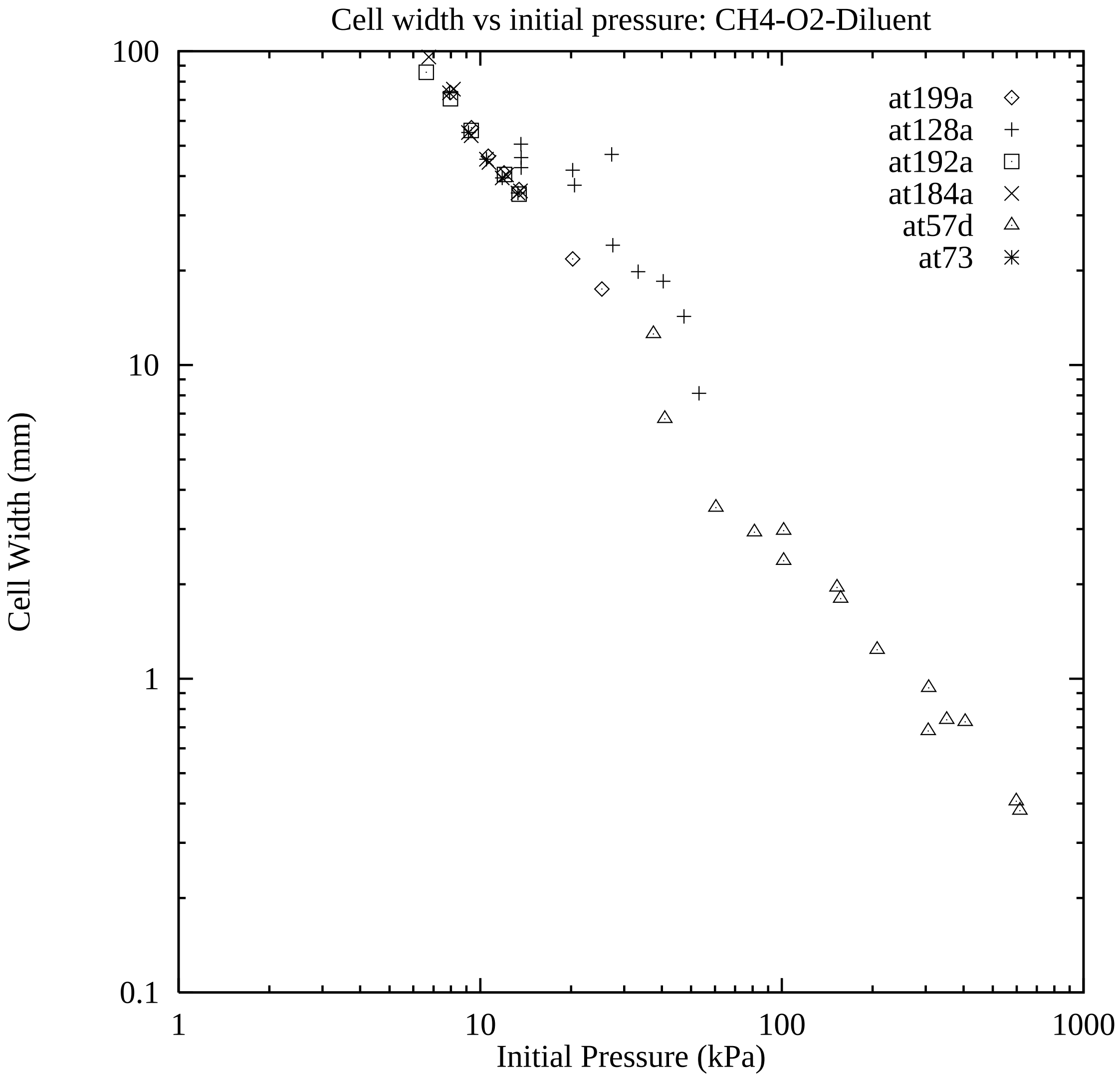

Figure 27: Cell width vs initial pressure; CH4-O2-Diluent

at199a - Table 114 [62, Laberge (1993)] T=293 K, ER=1

at128a - Table 118 [108, Strehlow (1969)] T=293 K, ER=1, 50% Ar

at192a - Table 102 [1, Abid (1991)] T=293 K, ER=1

at184a - Table 117 [97, Pedley (1988)] T=293 K, ER=1

at57d - Table 115 [79, Manzhalei (1974)] T=293 K, ER=1

at73 - Table 113 [56, Knystautas (1982)] T=293 K, ER=1

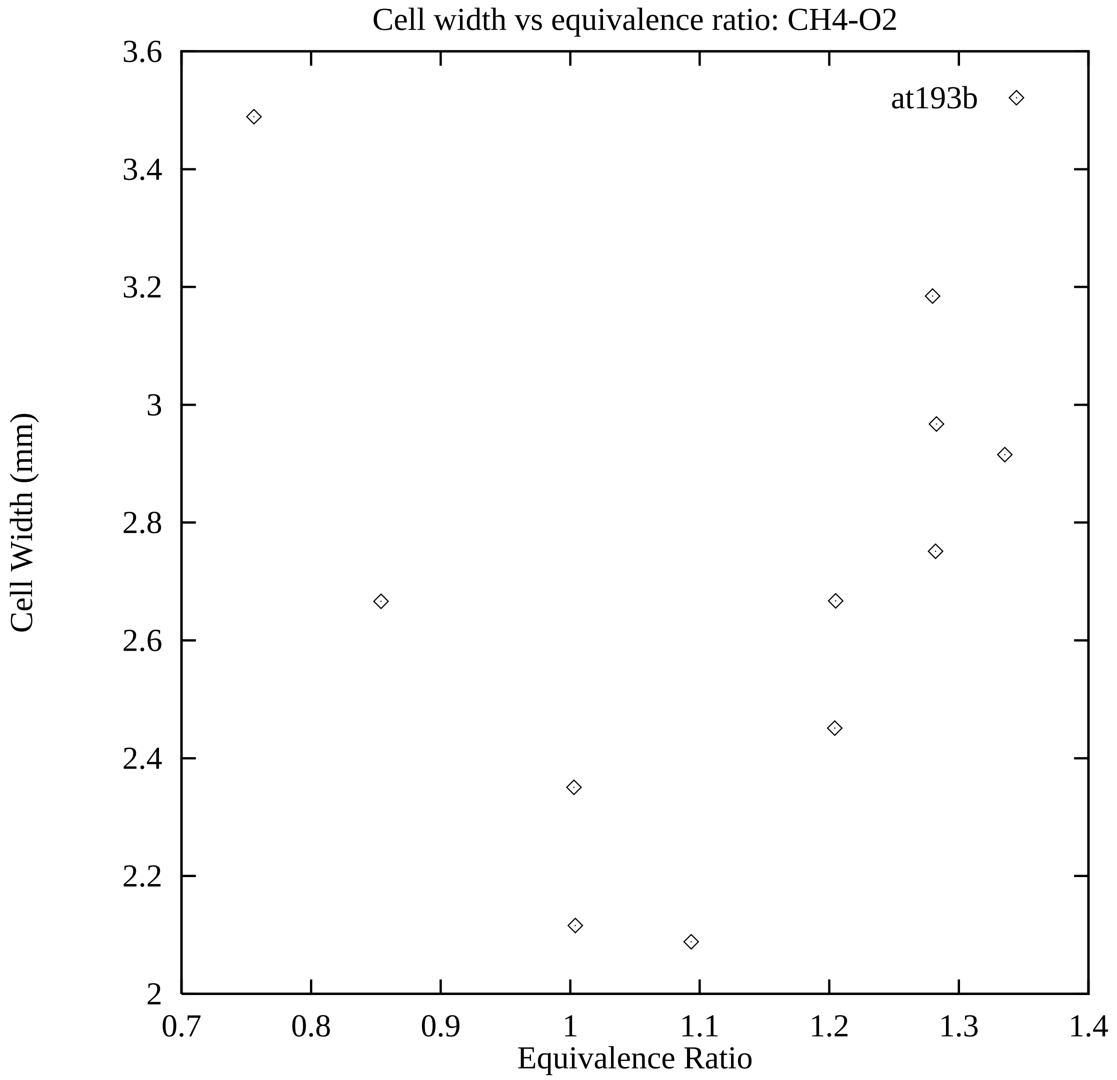

Figure 28: Cell width vs equivalence ratio; CH4-O2

at193b - Table 110 [4, Aminallah (1993)] T=293 K, P=120 kPa

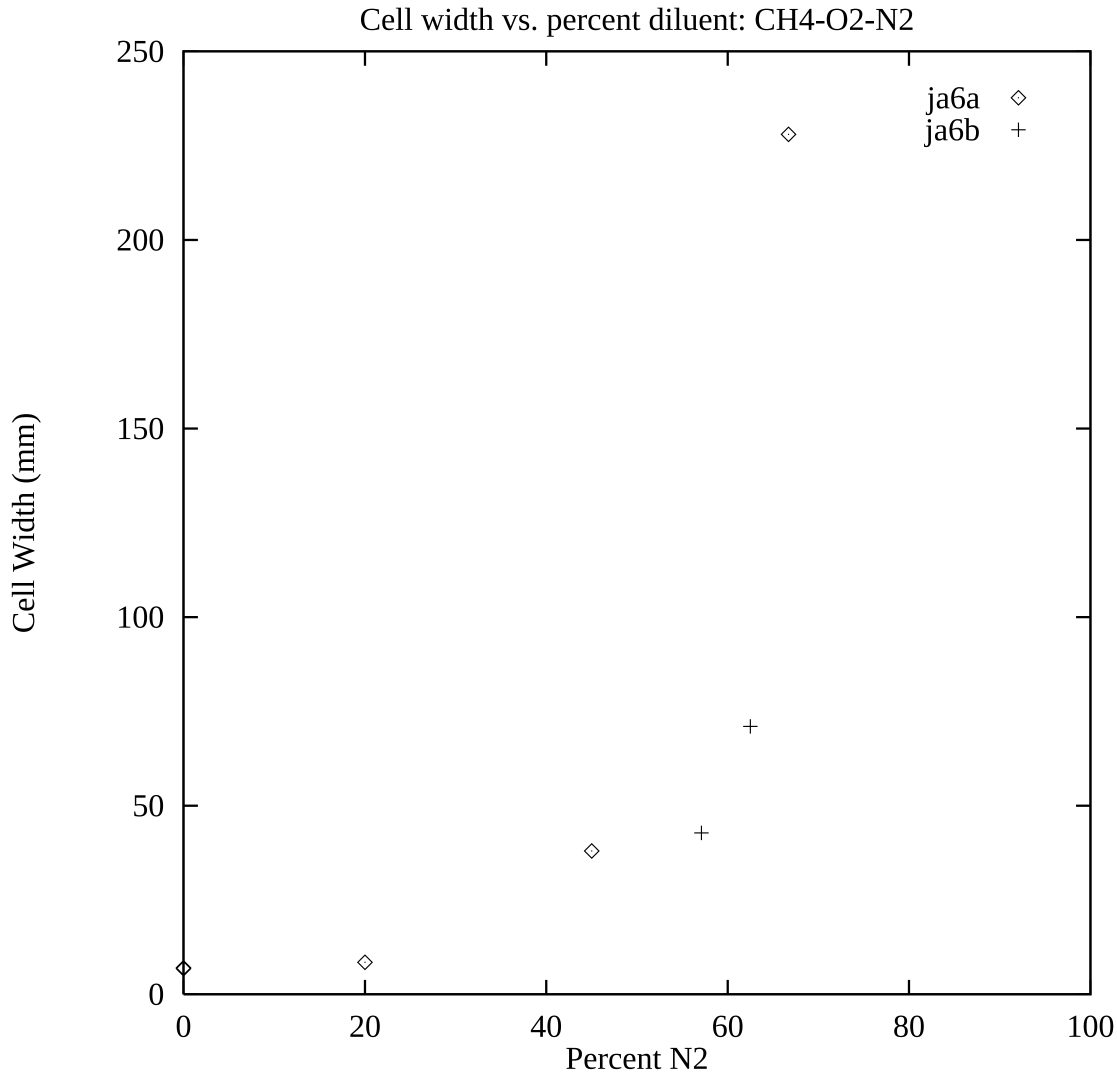

Figure 29: Cell width vs. percent diluent; CH4-O2-N2

ja6a - Table 103 [3, Akbar (1997)] T=293 K, P=70-72 kPa

ja6b - Table 104 [3, Akbar (1997)] T=293 K, P=102 kPa

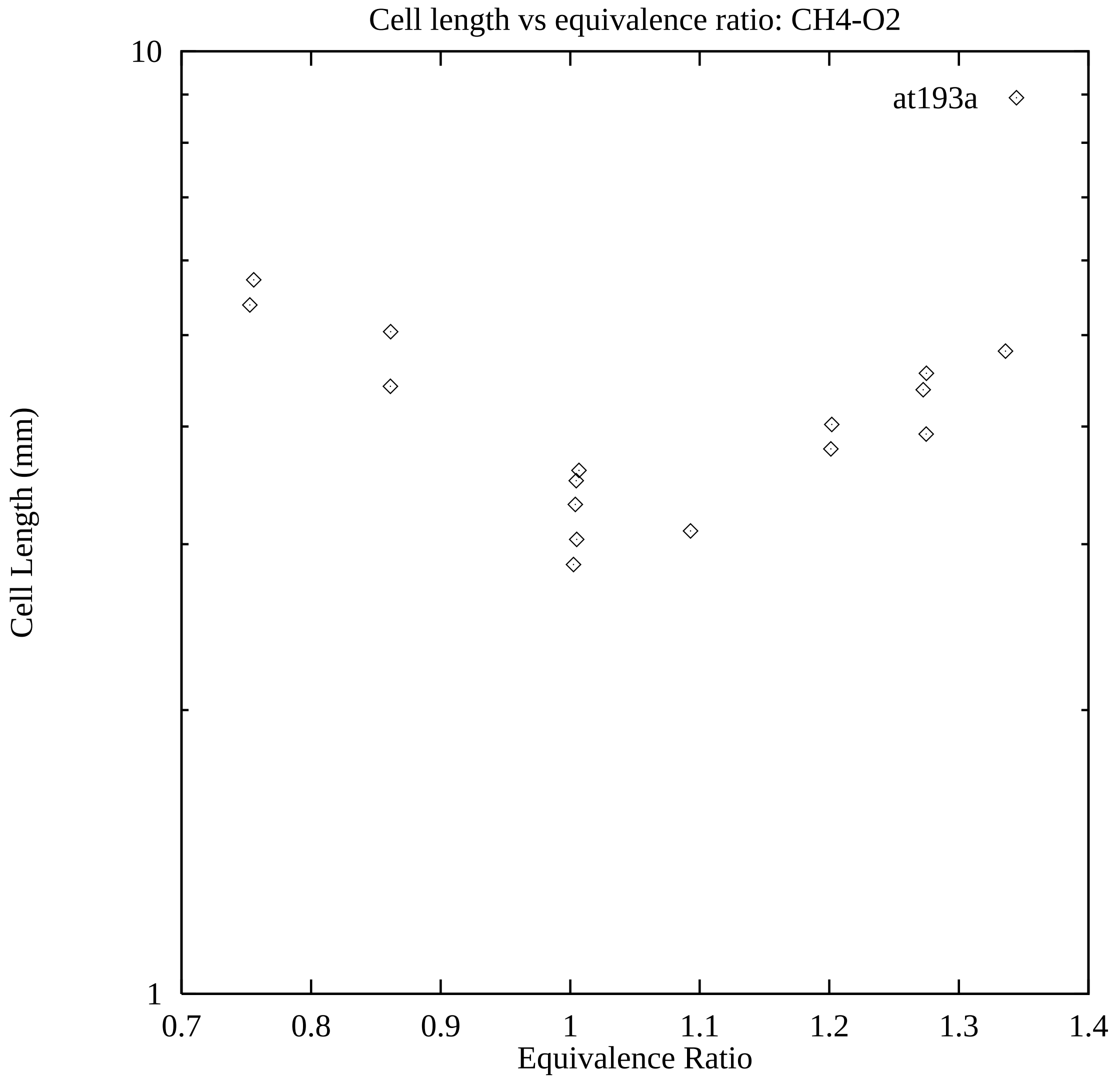

Figure 30: Cell length vs equivalence ratio; CH4-O2

at193a - Table 238 [4, Aminallah (1993)] T=293 K, P=120 kPa

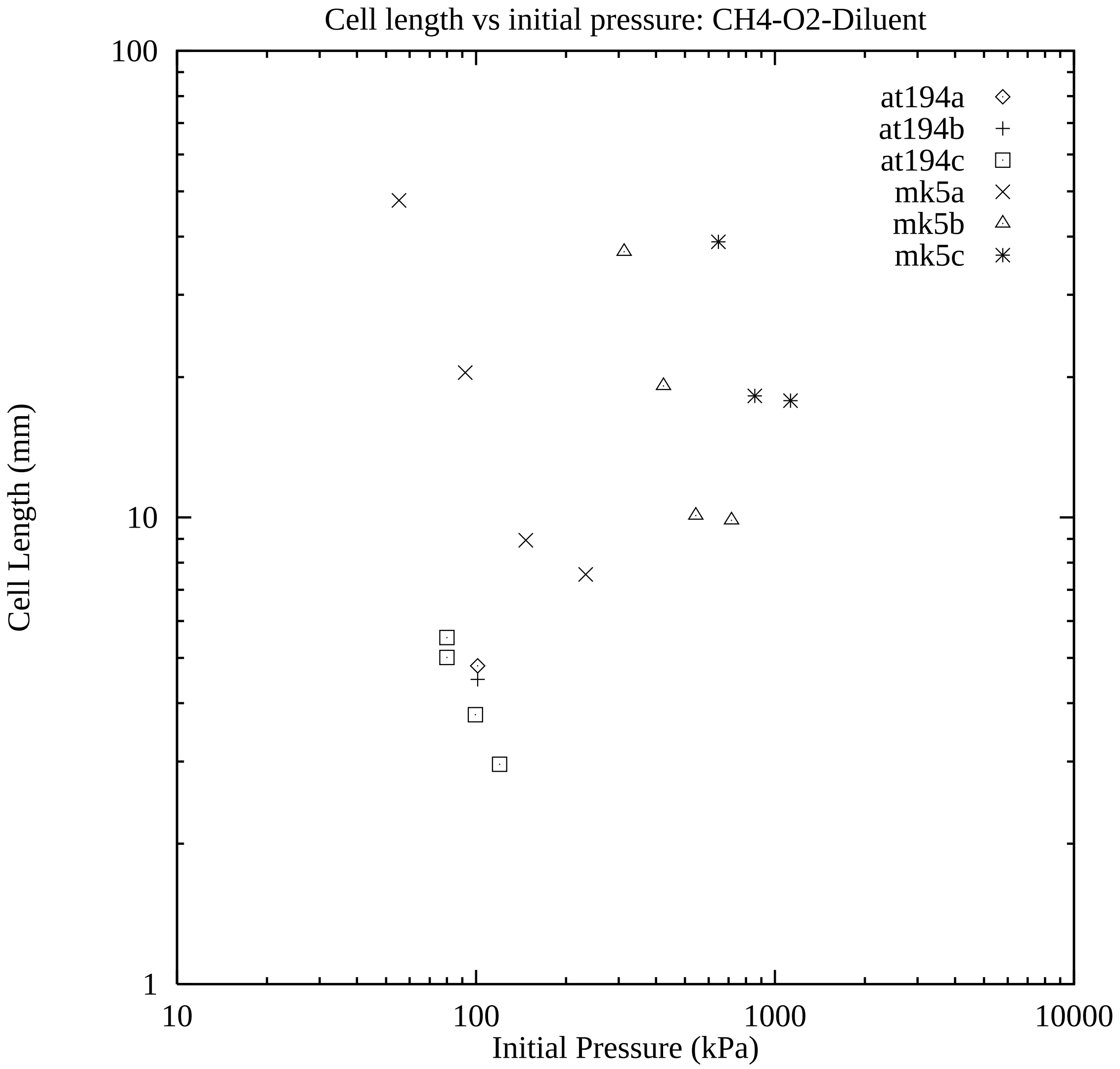

Figure 31: Cell length vs initial pressure; CH4-O2-Diluent

at194a - Table 240 [10, Bauer (1985)] T=293 K, ER=1

at194b - Table 256 [27, Bull (1982)] T=293 K, ER=1

at194c - Table 239 [4, Aminallah (1993)] T=293 K, ER=1

mk5a - Table 253 [12, Bauer (1986)] T=293 K, ER=1.08, 31.9% N2

mk5b - Table 254 [12, Bauer (1986)] T=293 K, ER=1.09, 55.0% N2

mk5c - Table 255 [12, Bauer (1986)] T=293 K, ER=1.15, 64.2% N2

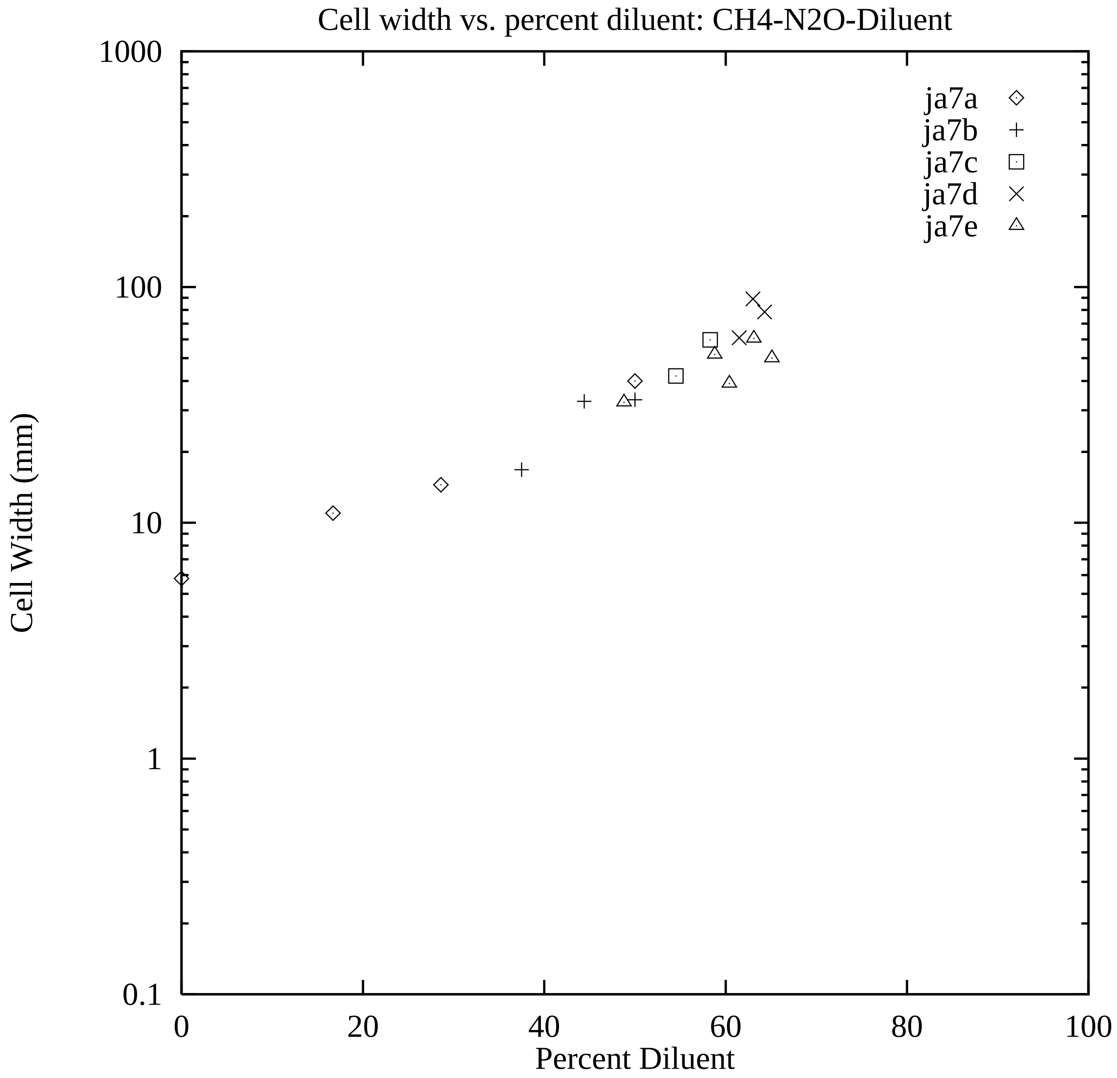

Figure 32: Cell width vs. percent diluent; CH4-N2O-Diluent

ja7a - Table 105 [3, Akbar (1997)] T=293 K, P=57-72 kPa, ER=1, 0-50% N2

ja7b - Table 106 [3, Akbar (1997)] T=293 K, P=77-87 kPa, ER=1, 37.5-50% N2

ja7c - Table 107 [3, Akbar (1997)] T=293 K, P=92-97 kPa, ER=1, 54.5-58.3% N2

ja7d - Table 108 [3, Akbar (1997)] T=293 K, P=102 kPa, ER=1, 61.5-64.3% N2

ja7e - Table 109 [3, Akbar (1997)] T=293 K, P=86-97 kPa, ER=0.5-0.7, 48.8-65.1% Air

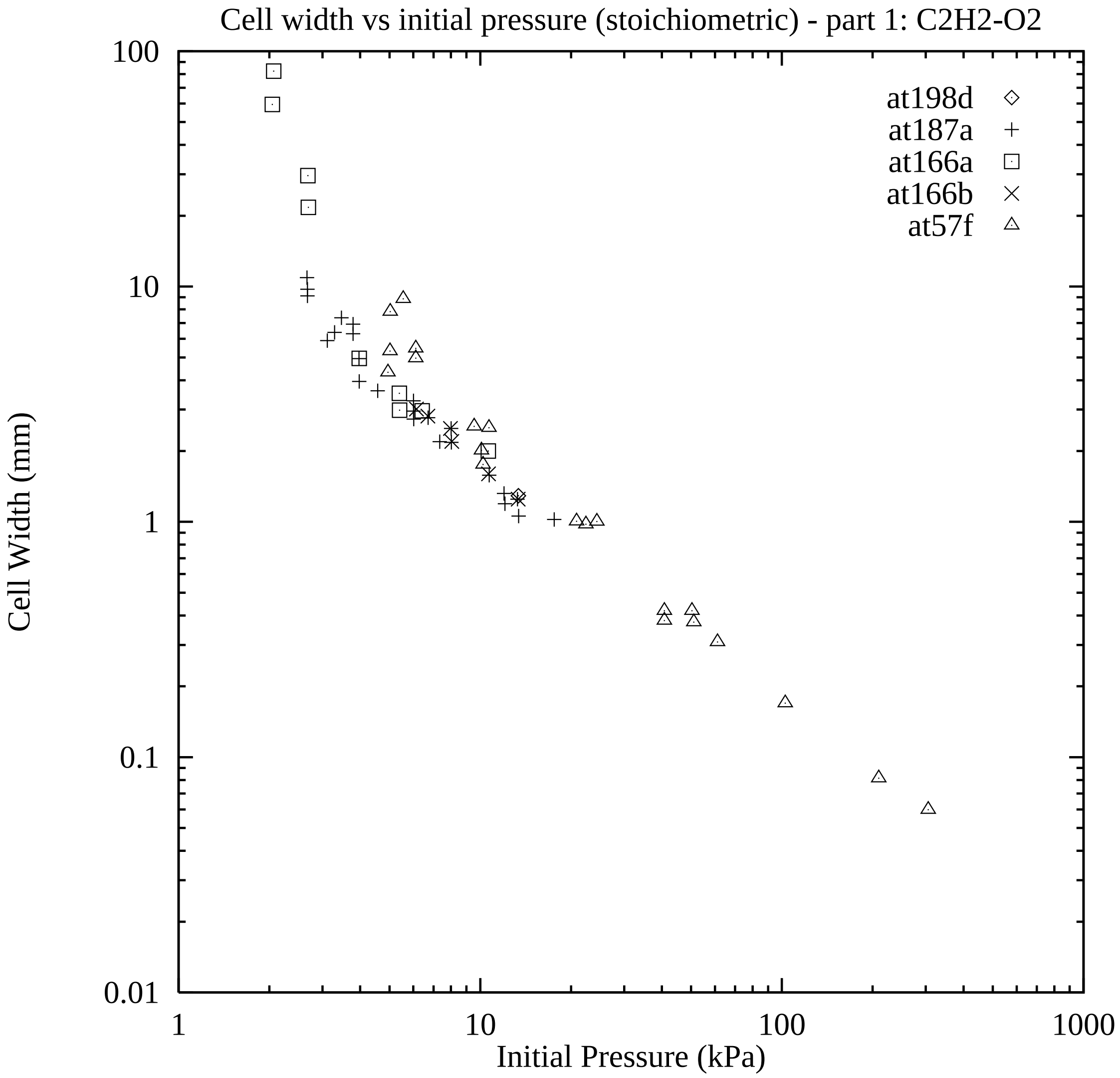

Figure 33: Cell width vs initial pressure (stoichiometric) - part 1; C2H2-O2

at198d - Table 133 [37, Desbordes (1993)] T=293 K, ER=1
at187a - Table 122 [35, Desbordes (1988)] T=293 K, ER=1
at166a - Table 134 [42, Edwards (1978)] T=293 K, ER=1
at166b - Table 126 [38, Desbordes (1986)] T=293 K, ER=1
at57f - Table 144 [79, Manzhalei (1974)] T=293 K, ER=1

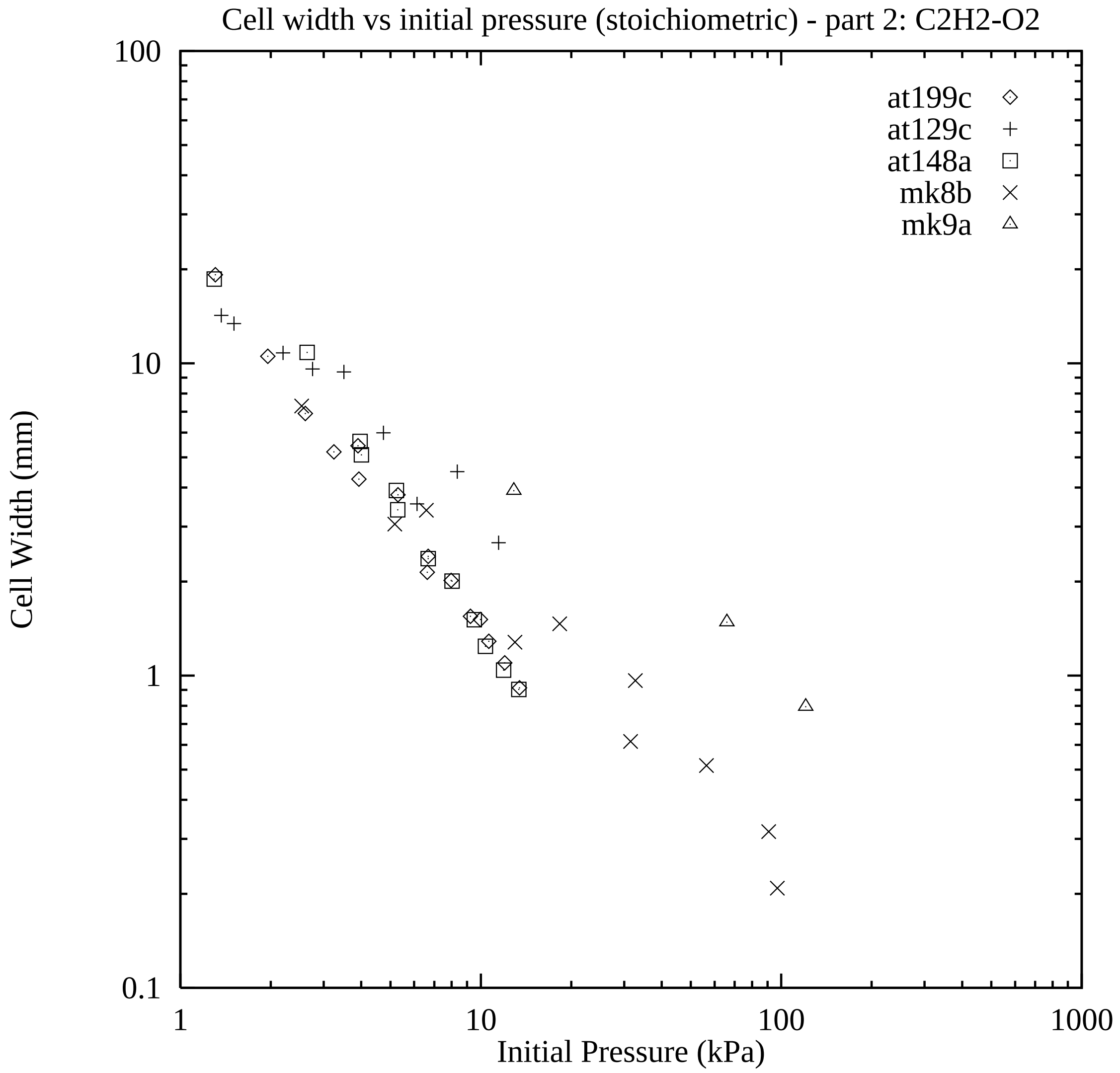

Figure 34: Cell width vs initial pressure (stoichiometric) - part 2; C2H2-O2

at199c - Table 141 [62, Laberge (1993)] T=293 K, ER=1

at129c - Table 149 [108, Strehlow (1969)] T=293 K, ER=1

at148a - Table 137 [56, Knystautas (1982)] T=293 K, ER=1

mk8b - Table 155 [125, Voitsekhovskii (1966)] T=293 K, ER=1

mk9a - Table 121 [32, Denisov (1960)] T=293 K, ER=1

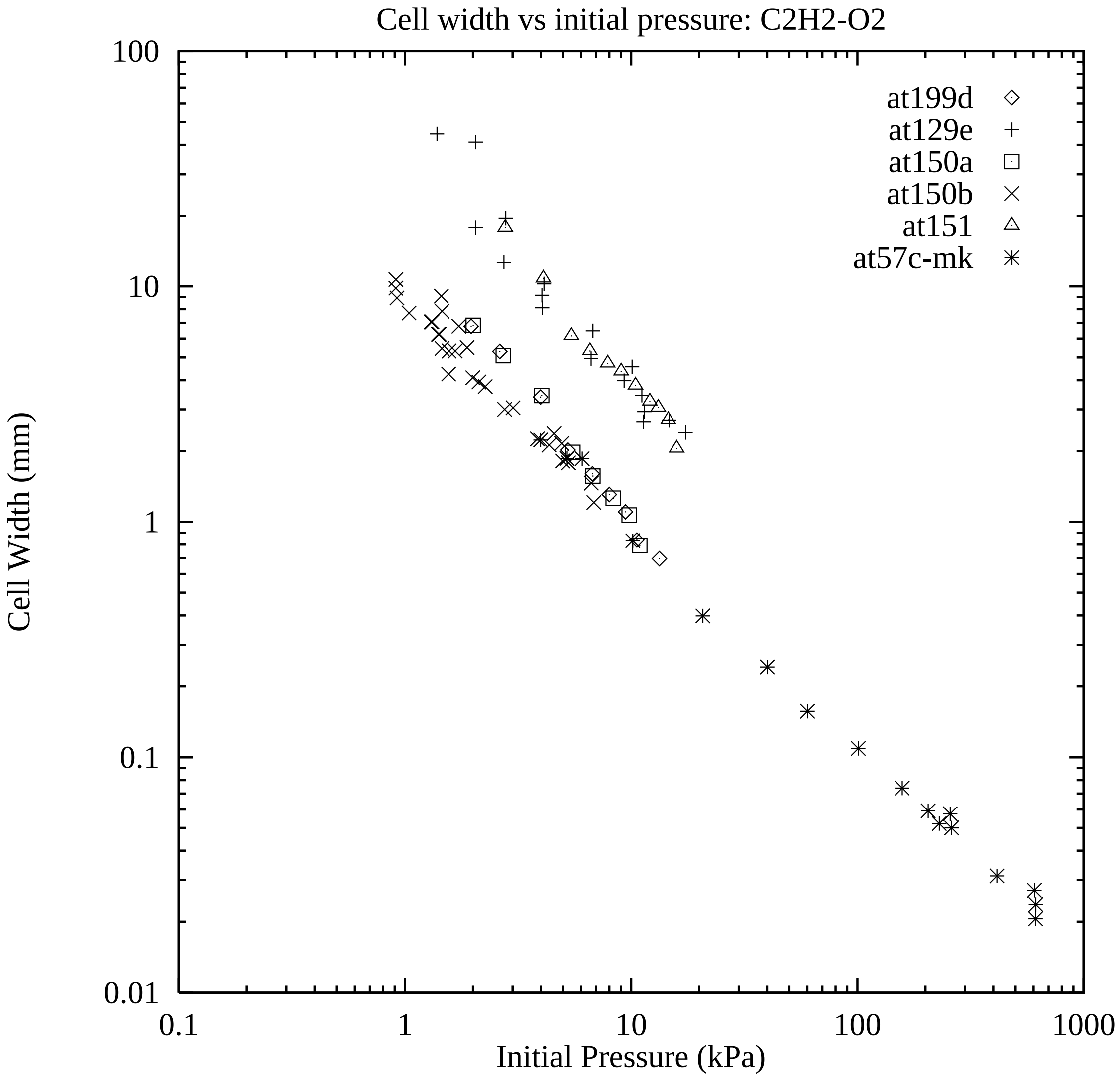

Figure 35: Cell width vs initial pressure; C2H2-O2

at199d - Table 142 [62, Laberge (1993)] T=293 K, ER=2.5

at129e - Table 150 [108, Strehlow (1969)] T=293 K, ER=0.625

at150a - Table 138 [56, Knystautas (1982)] T=293 K, ER=2.5

at150b - Table 139 [56, Knystautas (1982)] T=293 K, ER=2.5

at151 - Table 140 [56, Knystautas (1982)] T=293 K, ER=0.625

at57c-mk - Table 145 [79, Manzhalei (1974)] T=293 K, ER=2.5

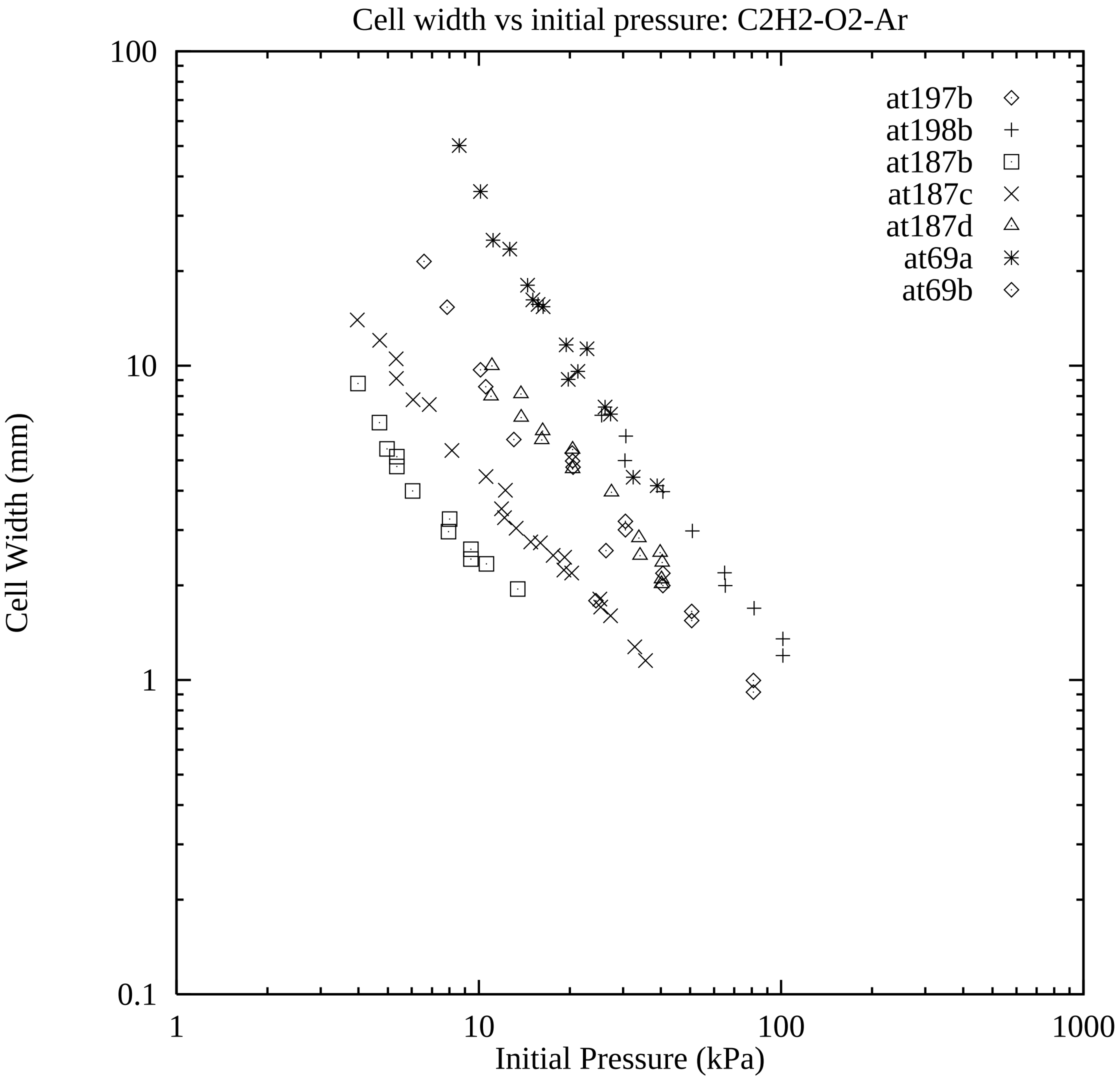

Figure 36: Cell width vs initial pressure; C2H2-O2-Ar

at197b - Table 128 [37, Desbordes (1993)] ER=1, 75% Ar

at198b - Table 131 [37, Desbordes (1993)] ER=1, 81% Ar

at187b - Table 123 [35, Desbordes (1988)] ER=1, 22.2% Ar

at187c - Table 124 [35, Desbordes (1988)] ER=1, 50% Ar

at187d - Table 125 [35, Desbordes (1988)] ER=1, 75% Ar

at69a - Table 152 [110, Strehlow (1967)] ER=1, 85% Ar

at69b - Table 153 [110, Strehlow (1967)] ER=1, 75% Ar

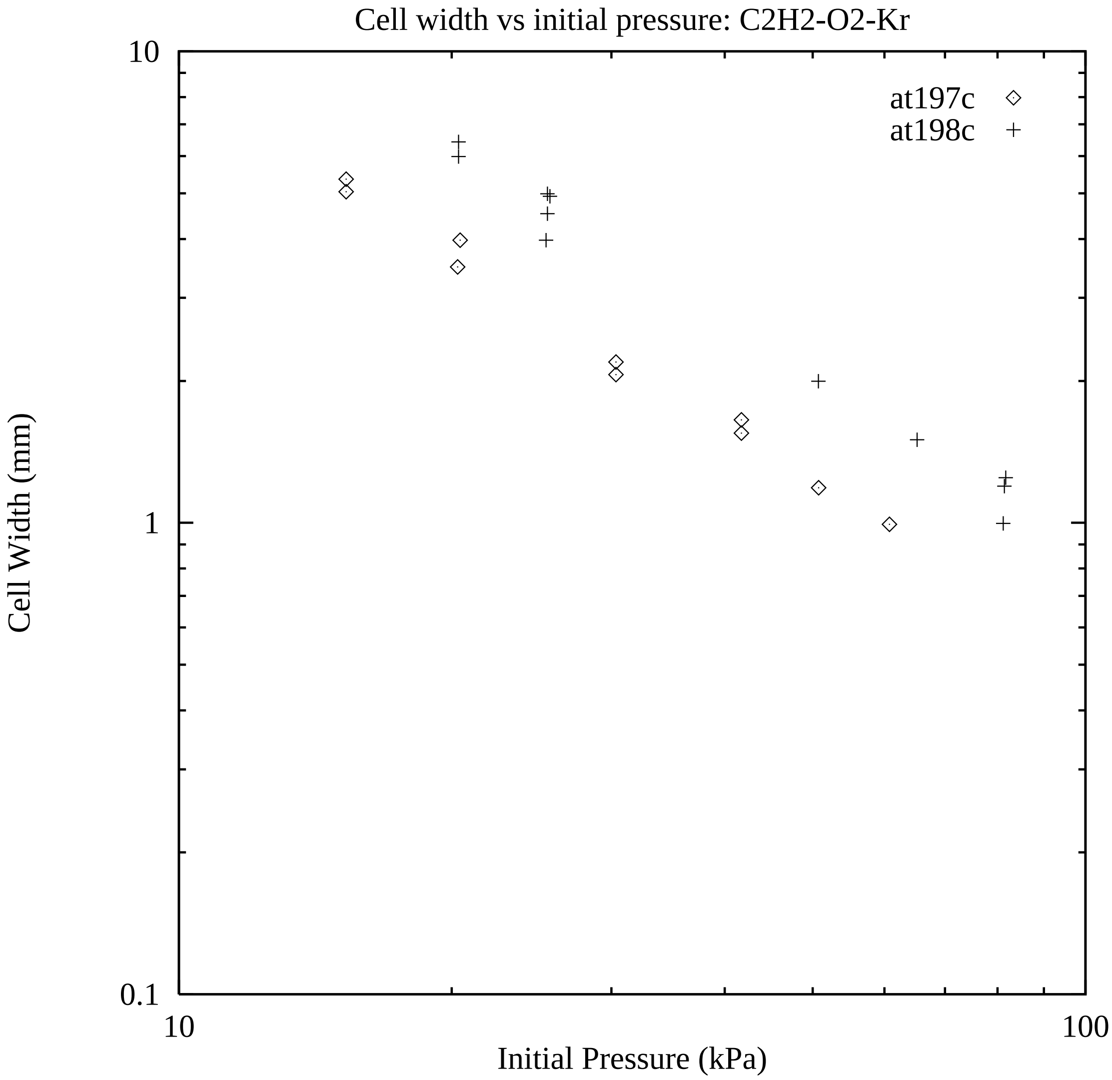

Figure 37: Cell width vs initial pressure; C2H2-O2-Kr

at197c - Table 129 [37, Desbordes (1993)] ER=1, 75% Kr

at198c - Table 132 [37, Desbordes (1993)] ER=1, 81% Kr

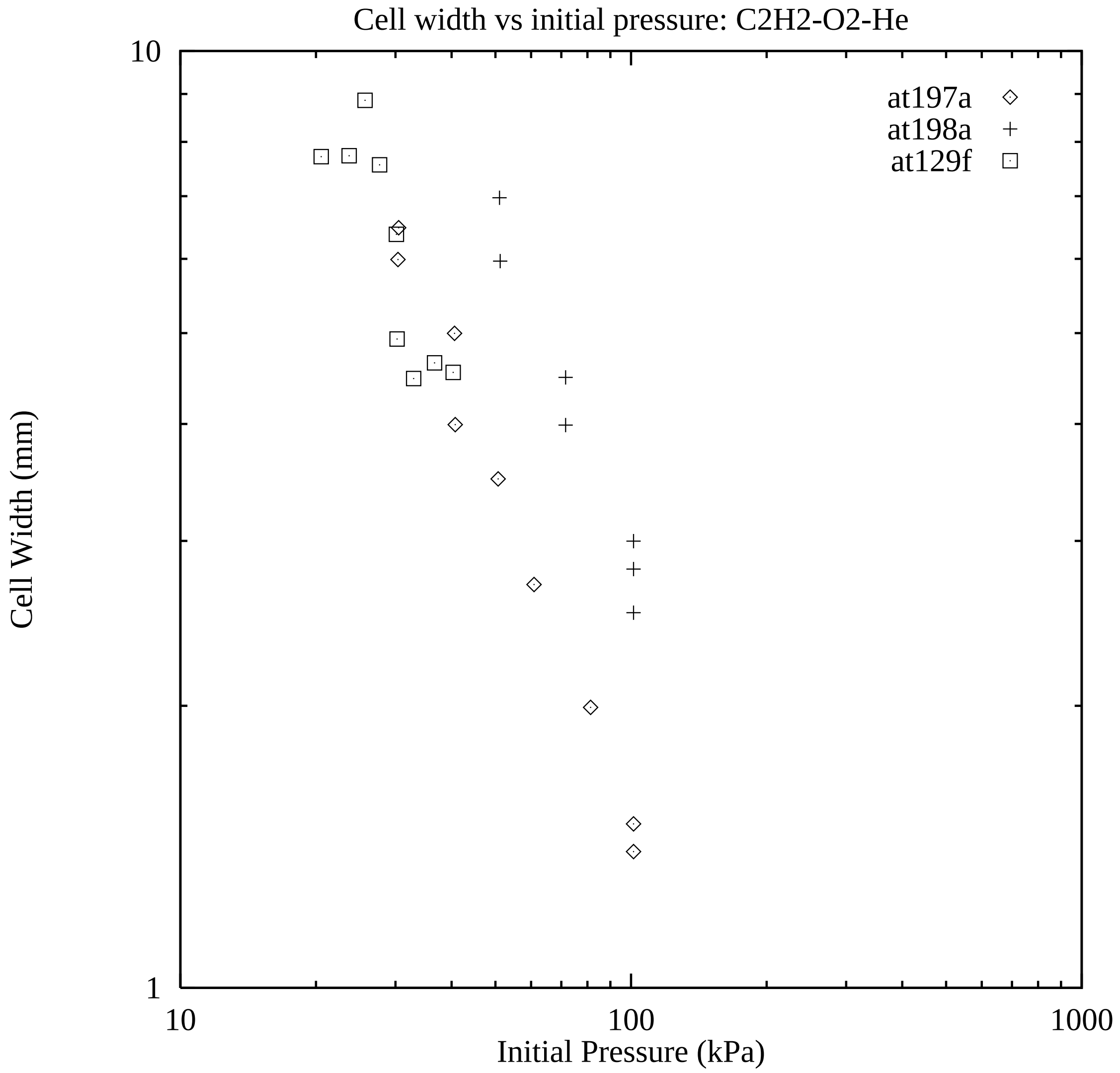

Figure 38: Cell width vs initial pressure; C2H2-O2-He

at197a - Table 127 [37, Desbordes (1993)] ER=1, 75% He

at198a - Table 130 [37, Desbordes (1993)] ER=1, 81% He

at129f - Table 151 [108, Strehlow (1969)] ER=1, 75% He

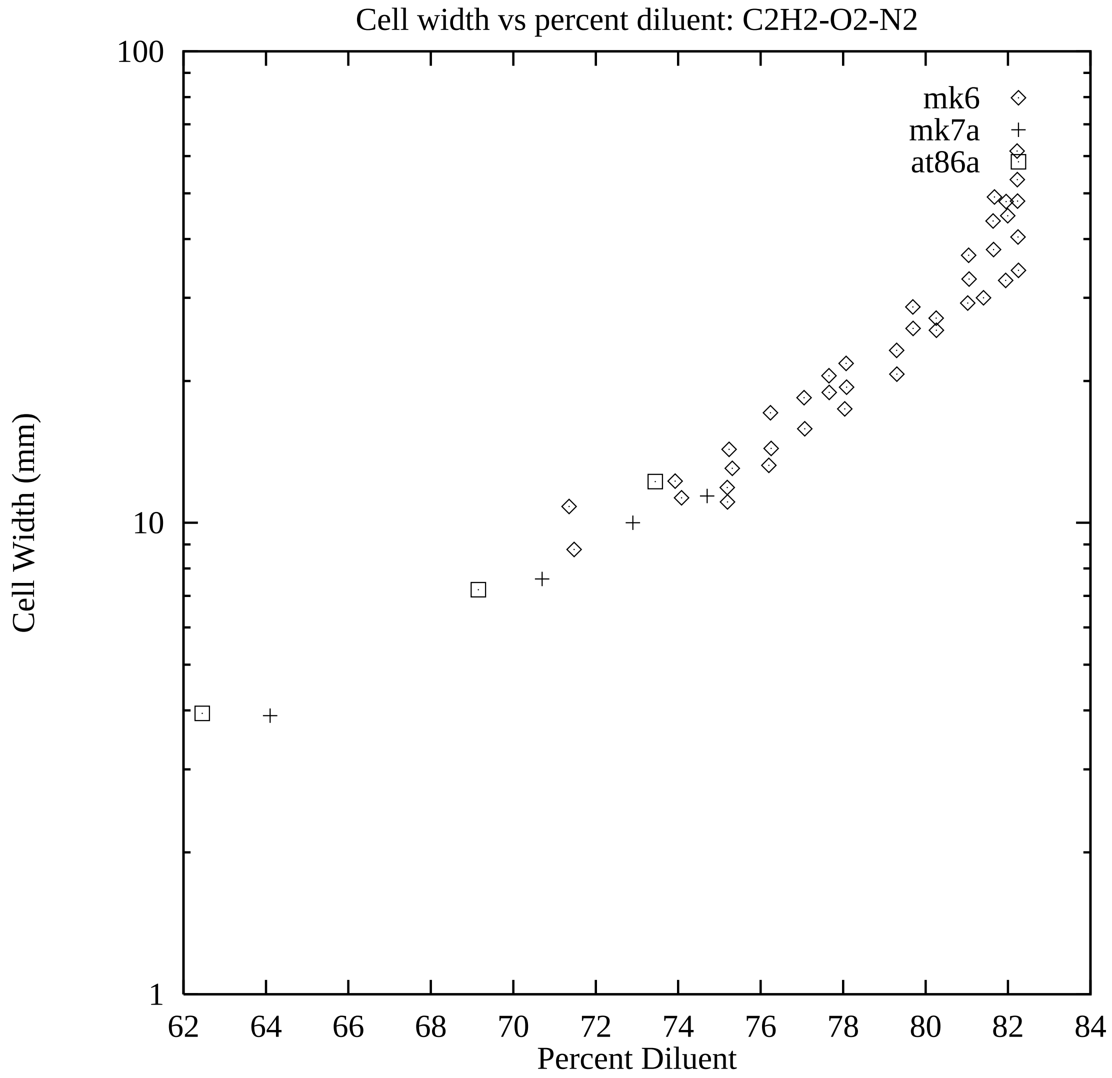

Figure 39: Cell width vs percent diluent; C2H2-O2-N2

mk6 - Table 147 [91, Murray (1986)] P=101.3 kPa, ER=1

mk7a - Table 136 [56, Knystautas (1982)] P=101.3 kPa, ER=1

at86a - Table 143 [70, Lee (1982)] P=101.3 kPa, ER=1

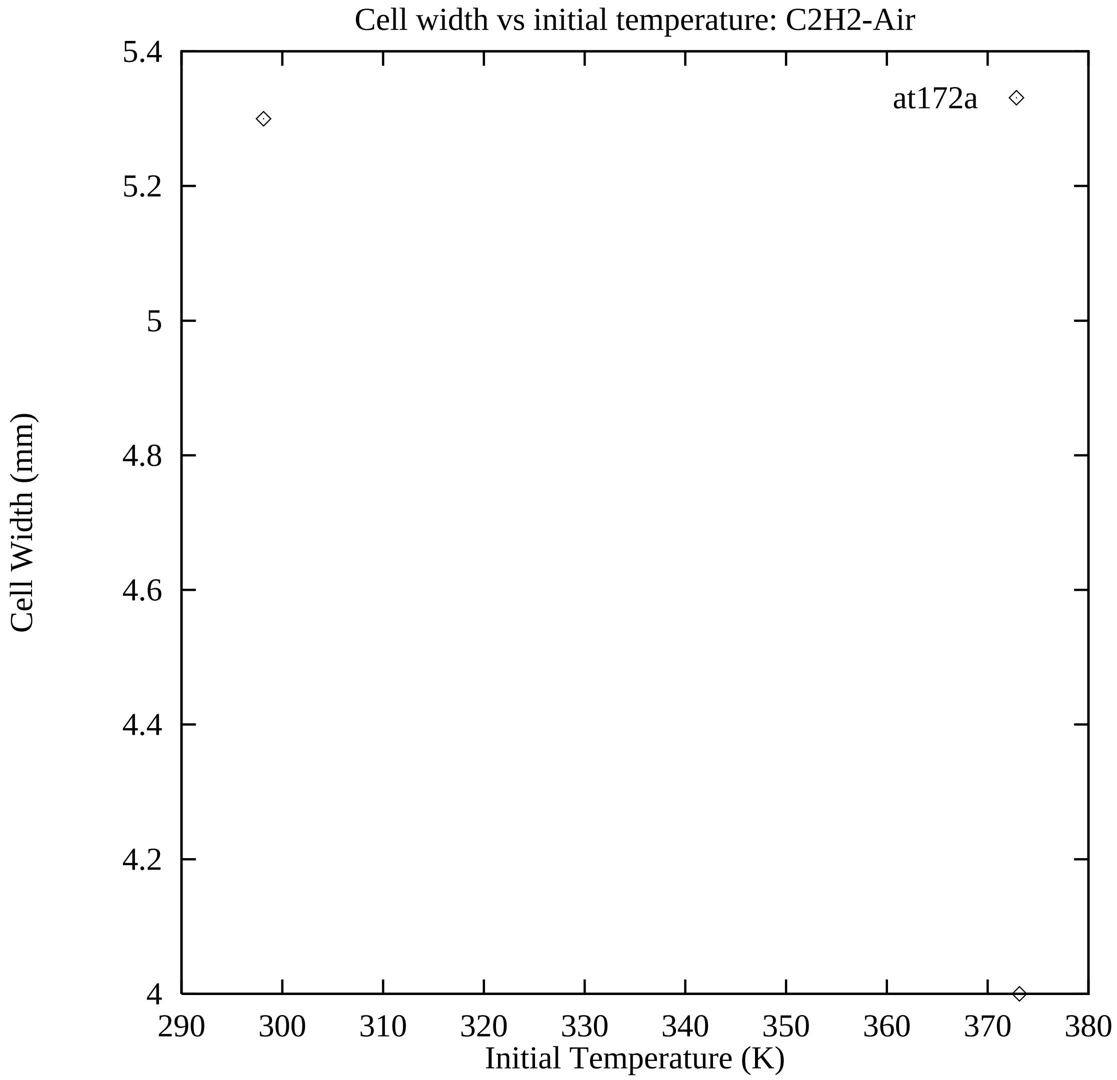

Figure 40: Cell width vs initial temperature; C2H2-Air

at172a - Table 154 [114, Tieszen (1991)] P=101.325 kPa, ER=1

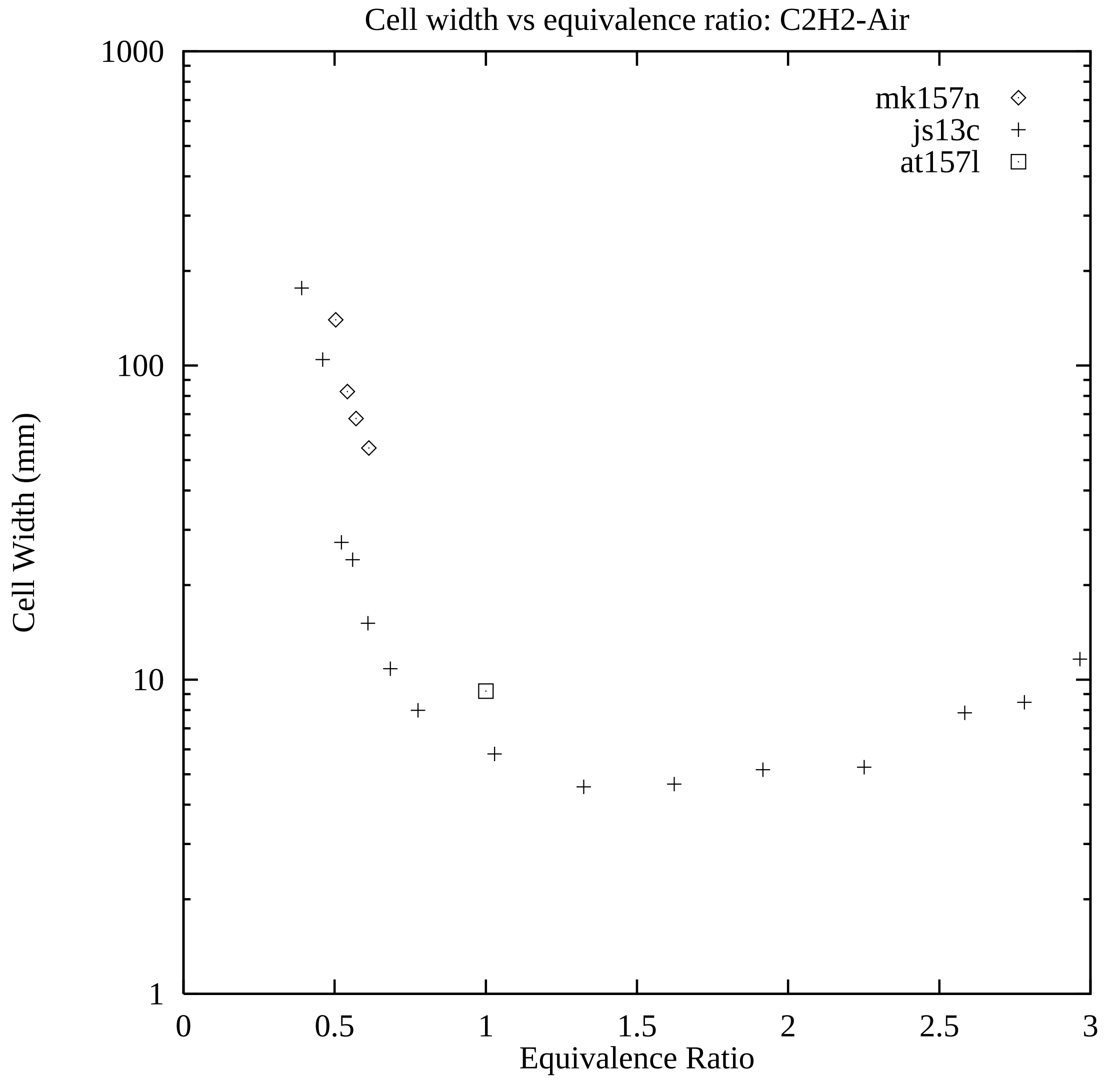

Figure 41: Cell width vs equivalence ratio; C2H2-Air

mk157n - Table 146 [84, Moen (1984)] T=293 K, P=92.5 kPa
js13c - Table 135 [54, Knystautas (1984)] T=293 K, P=101.3 kPa
at157l - Table 120 [27, Bull (1982)] T=293 K, P=101.3 kPa

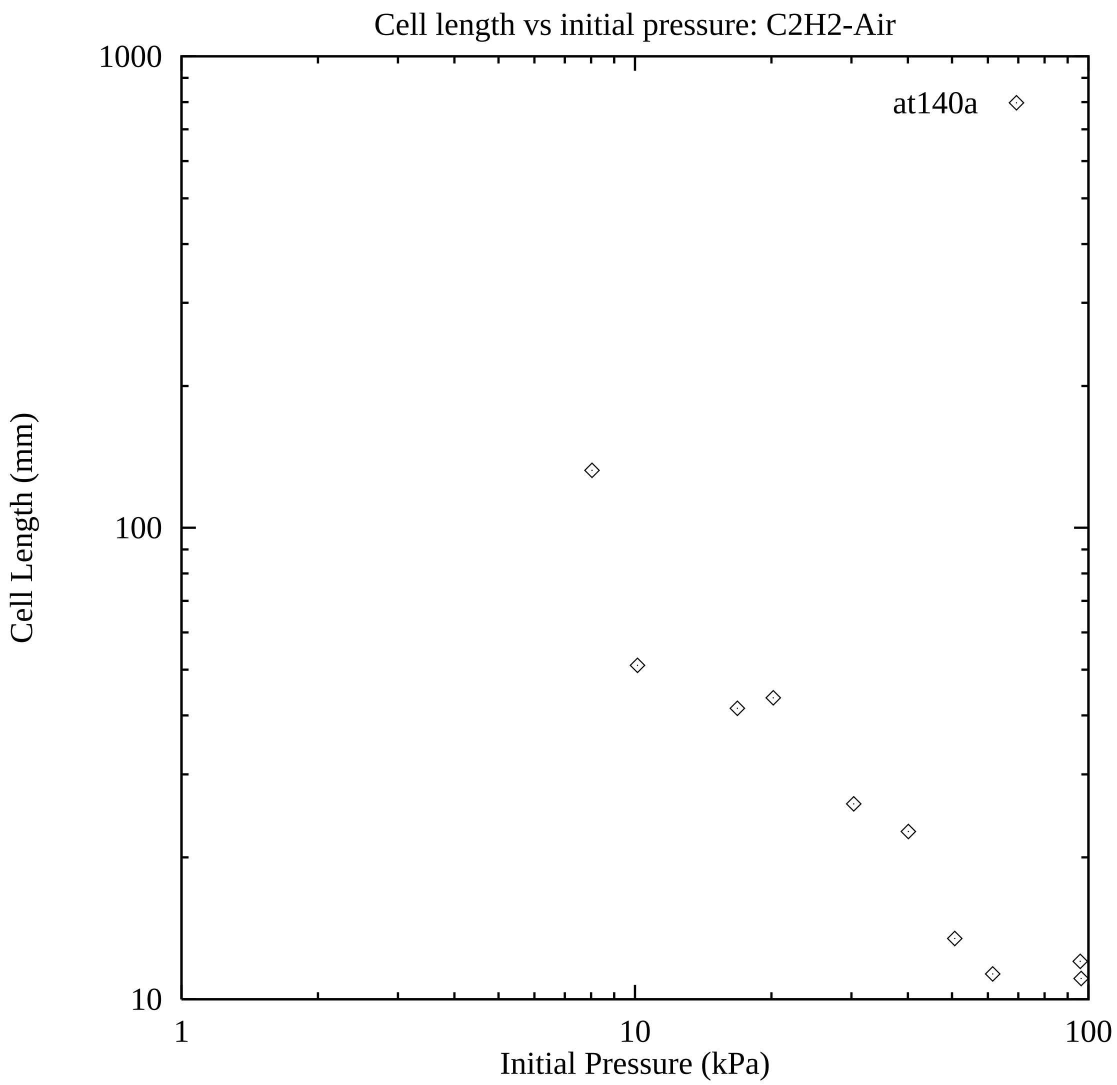

Figure 42: Cell length vs initial pressure; C2H2-Air

at140a - Table 264 [27, Bull (1982)] T=293 K, ER=1

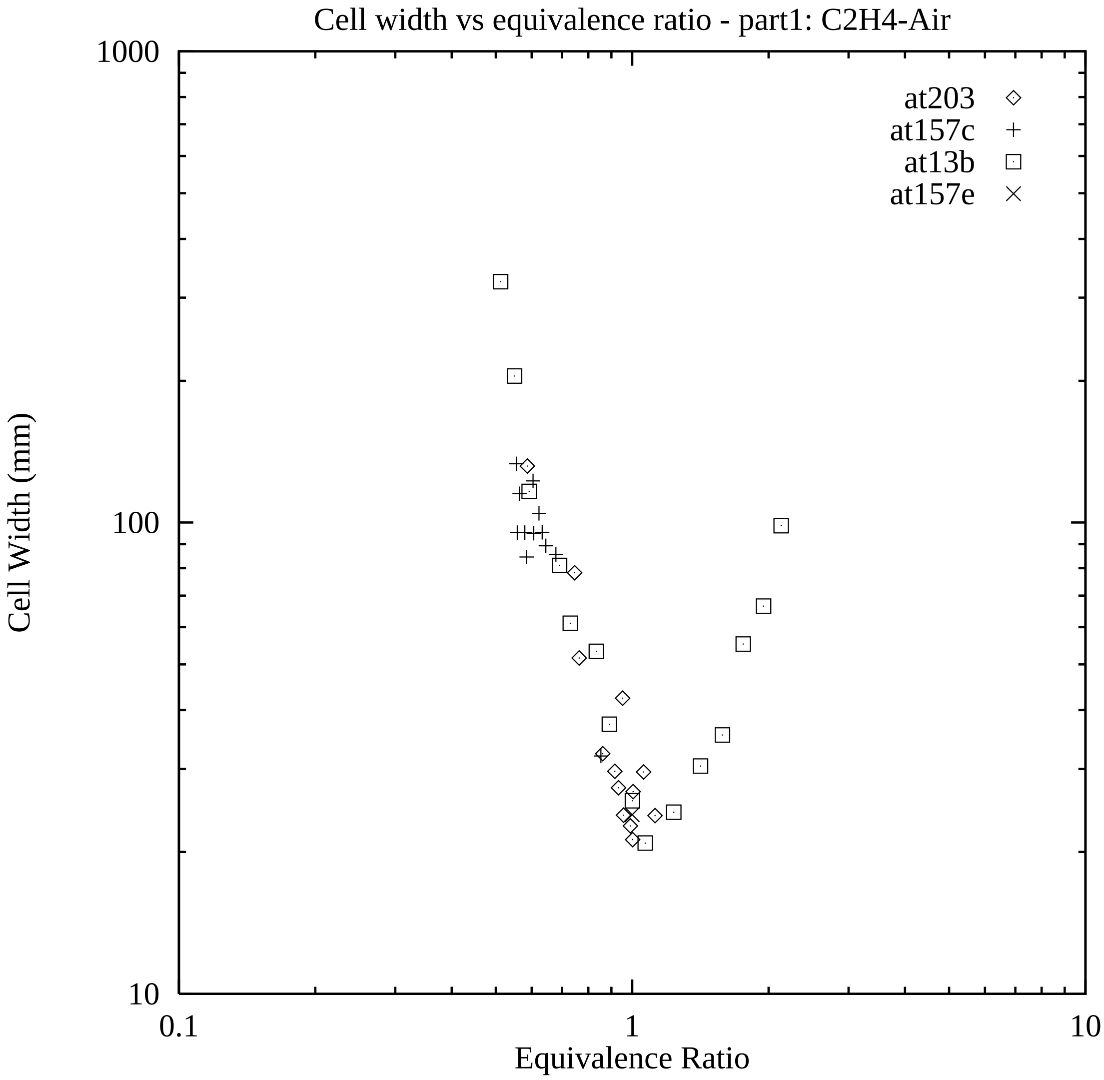

Figure 43: Cell width vs equivalence ratio - part1; C2H4-Air

at203 - Table 172 [85, Moen (1982)] T=293 K, P=92.5 kPa

at157c - Table 169 [84, Moen (1984)] T=293 K, P=92.5 kPa

at13b - Table 166 [54, Knystautas (1984)] T=293 K, P=101.3 kPa

at157e - Table 157 [27, Bull (1982)] T=293 K, P=101.3 kPa

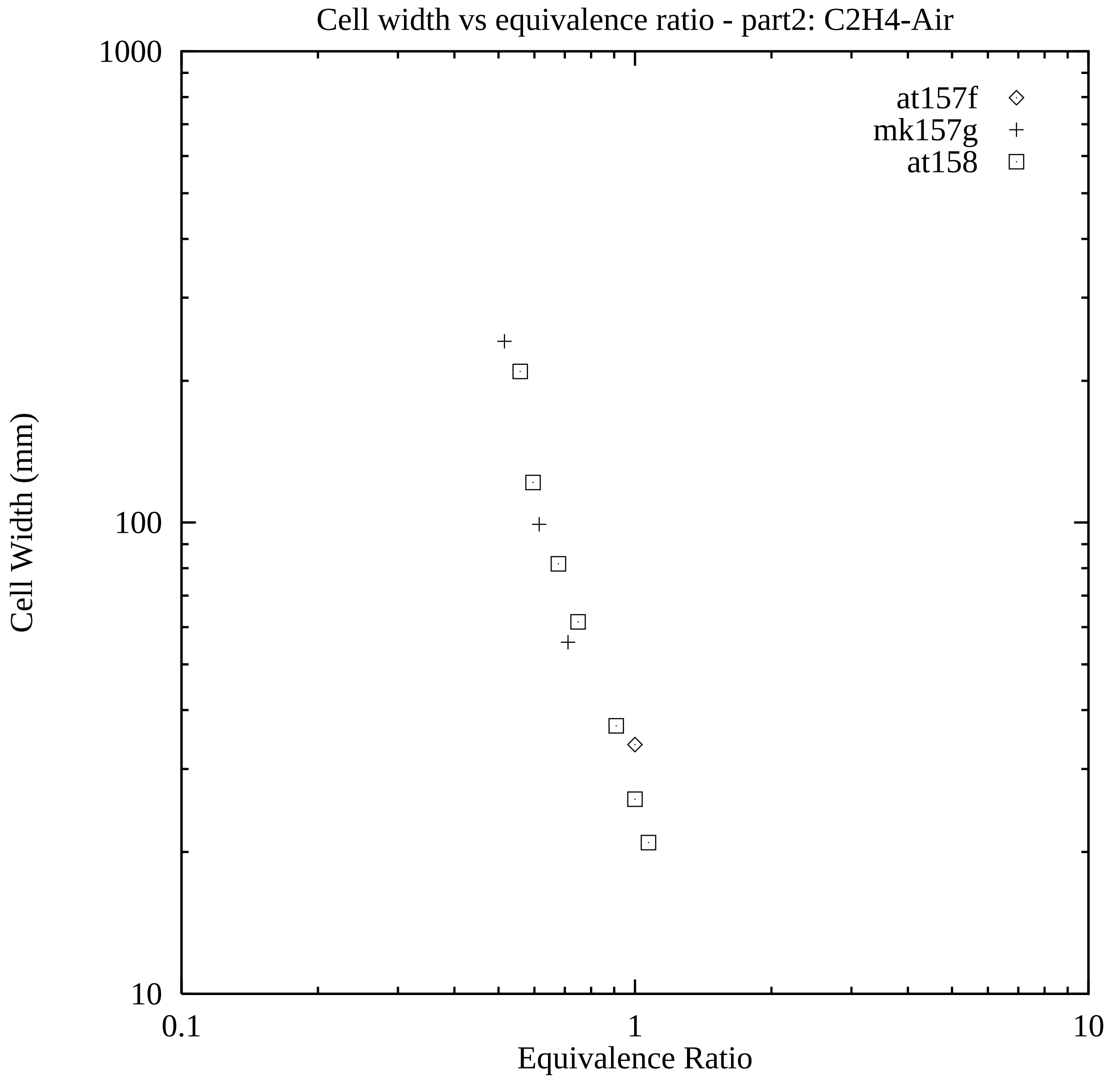

Figure 44: Cell width vs equivalence ratio - part2; C2H4-Air

at157f - Table 170 [84, Moen (1984)] T=293 K, P=92.5 kPa

mk157g - Table 171 [84, Moen (1984)] T=293 K, P=92.5 kPa

at158 - Table 173 [90, Murray (1984)] T=293 K, P=101.3 kPa

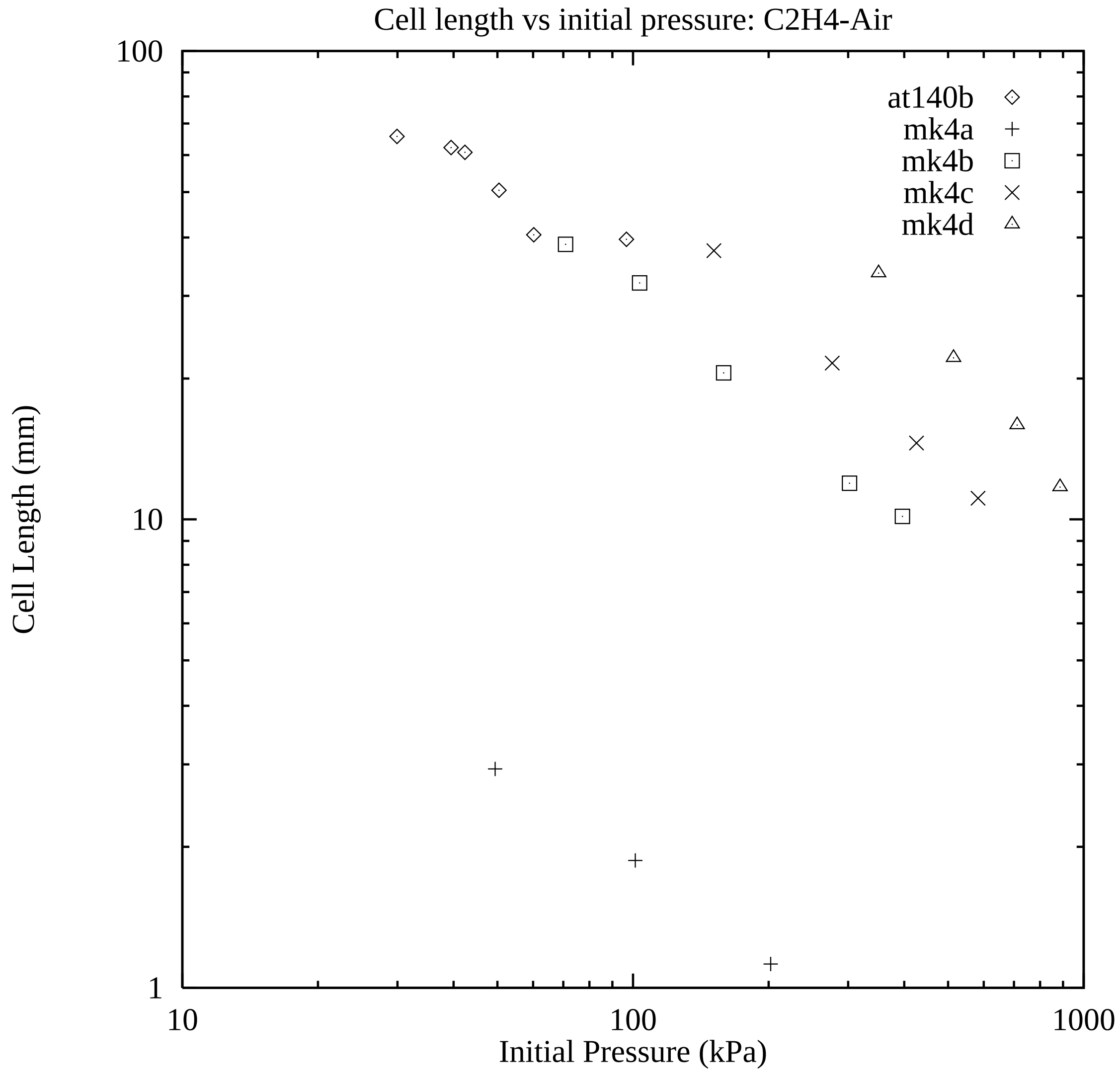

Figure 45: Cell length vs initial pressure; C2H4-Air

at140b - Table 265 [27, Bull (1982)]
mk4a - Table 249 [12, Bauer (1986)]
mk4b - Table 250 [12, Bauer (1986)]
mk4c - Table 251 [12, Bauer (1986)]
mk4d - Table 252 [12, Bauer (1986)]

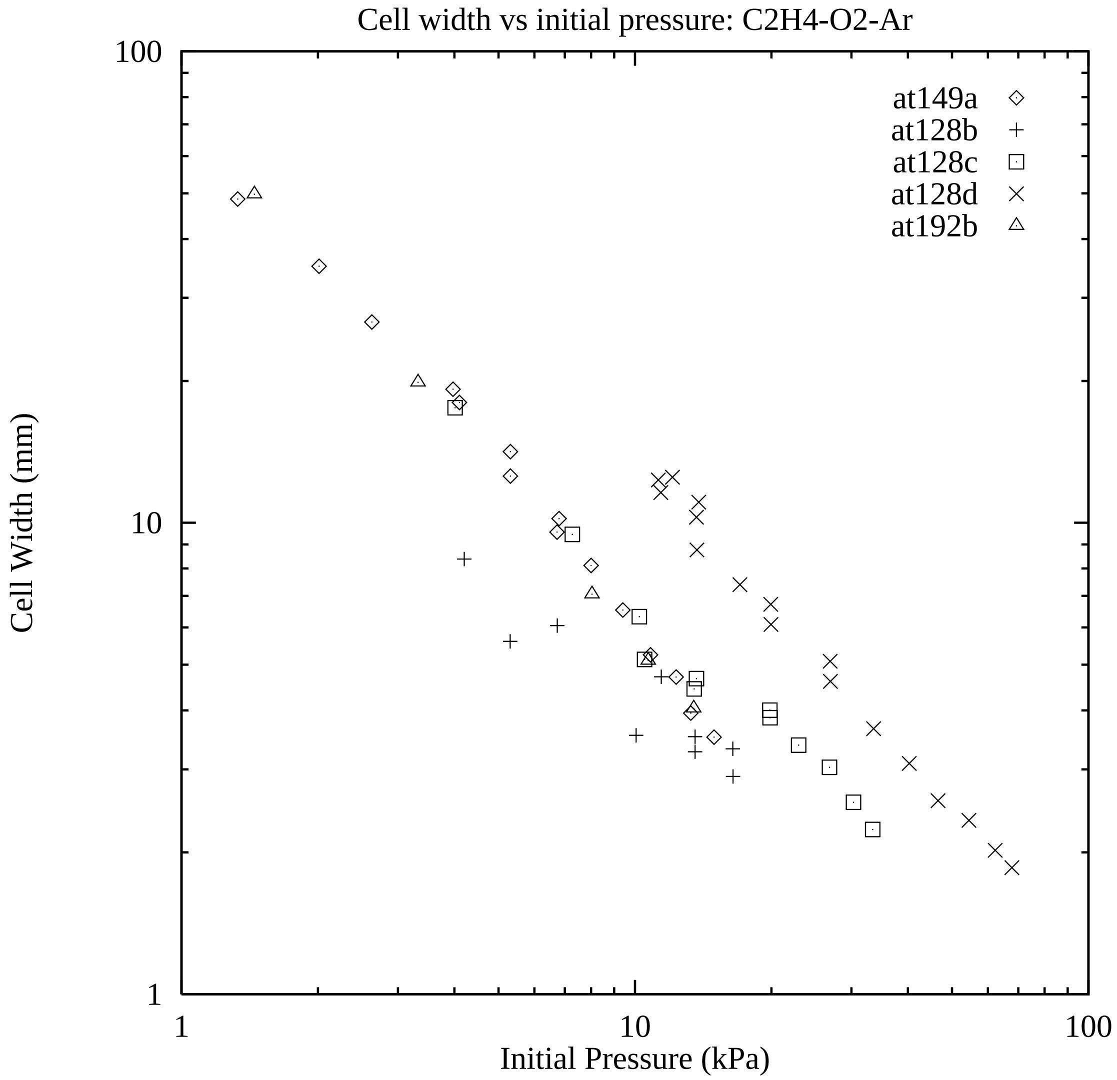

Figure 46: Cell width vs initial pressure; C2H4-O2-Ar

at149a - Table 168 [56, Knystautas (1982)] P=1.3-13.3 kPa

at128b - Table 174 [108, Strehlow (1969)] P=4.1-15.2 kPa

at128c - Table 175 [108, Strehlow (1969)] P=4.1-35.5 kPa, 50% Ar

at128d - Table 176 [108, Strehlow (1969)] P=12.2-70.9 kPa, 75% Ar

at192b - Table 156 [1, Abid (1991)] P=1.2-14 kPa

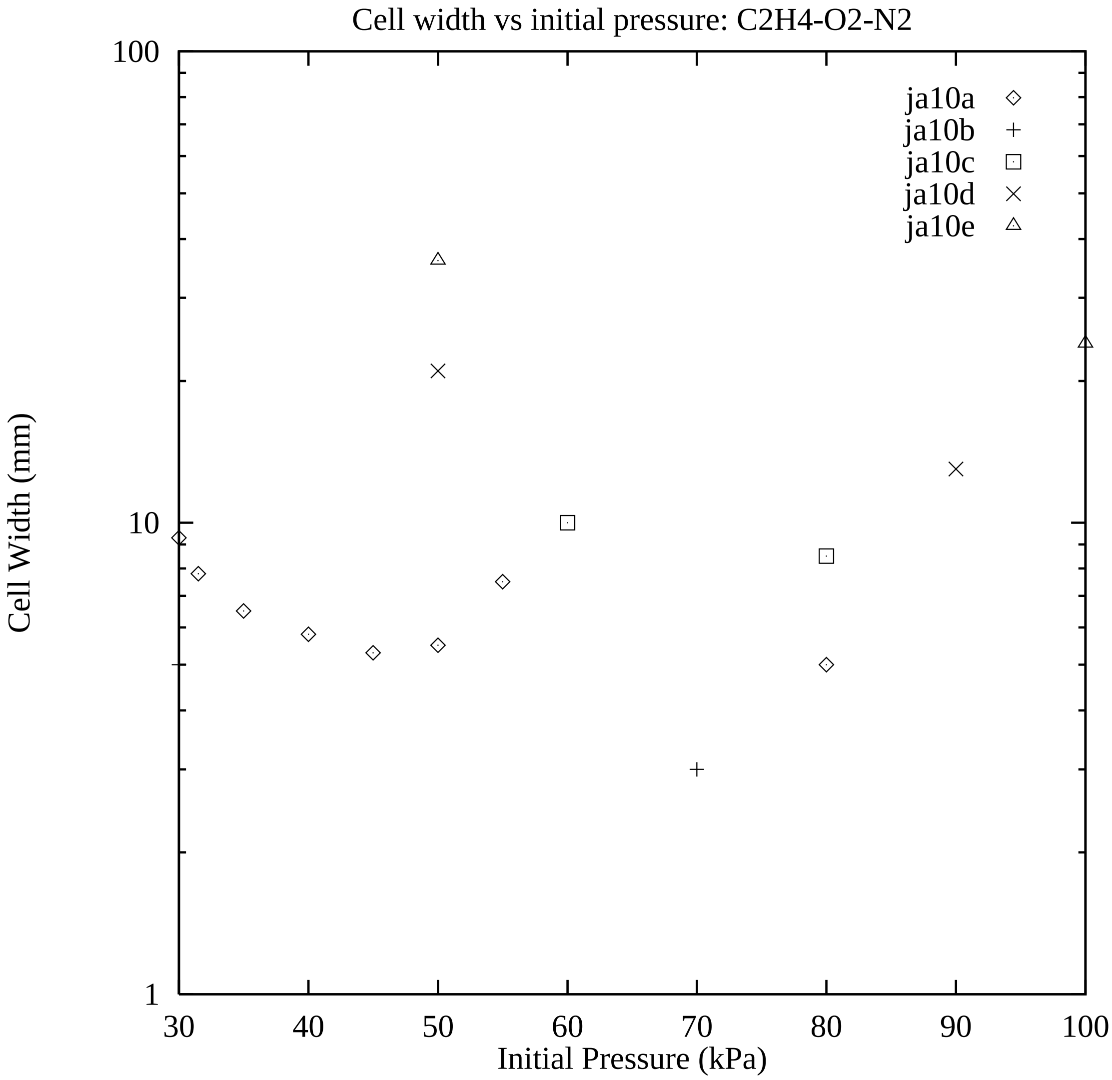

Figure 47: Cell width vs initial pressure; C2H4-O2-N2

ja10a - Table 158 [39, EDL (unpublished)] T=293 K, ER=1, 55.6% N2

ja10b - Table 159 [39, EDL (unpublished)] T=293 K, ER=1, 42.9% N2

ja10c - Table 160 [39, EDL (unpublished)] T=293 K, ER=1, 60% N2

ja10d - Table 161 [39, EDL (unpublished)] T=293 K, ER=1, 69.2% N2

ja10e - Table 162 [39, EDL (unpublished)] T=293 K, ER=1, 73.8% N2

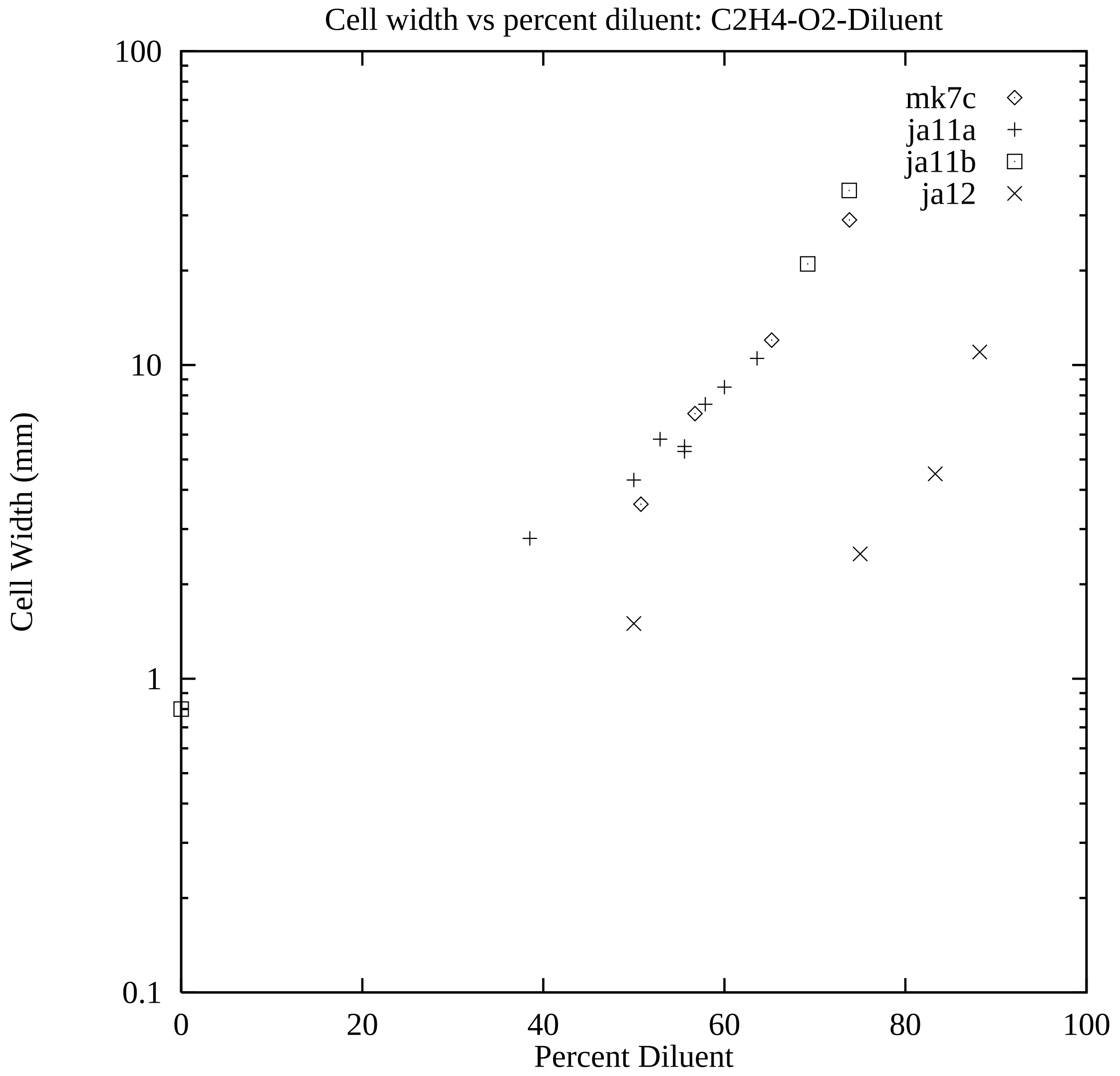

Figure 48: Cell width vs percent diluent; C2H4-O2-Diluent

mk7c - Table 167 [56, Knystautas (1982)] P=101.3 kPa, 51 - 74% N2

ja11a - Table 165 [53, Kaneshige (1999)] P=45-50 kPa, 38.5-63.6% N2

ja11b - Table 163 [39, EDL (unpublished)] P=50 kPa, 0-73.8% N2

ja12 - Table 164 [39, EDL (unpublished)] P=50 kPa, 50-88.2% Ar

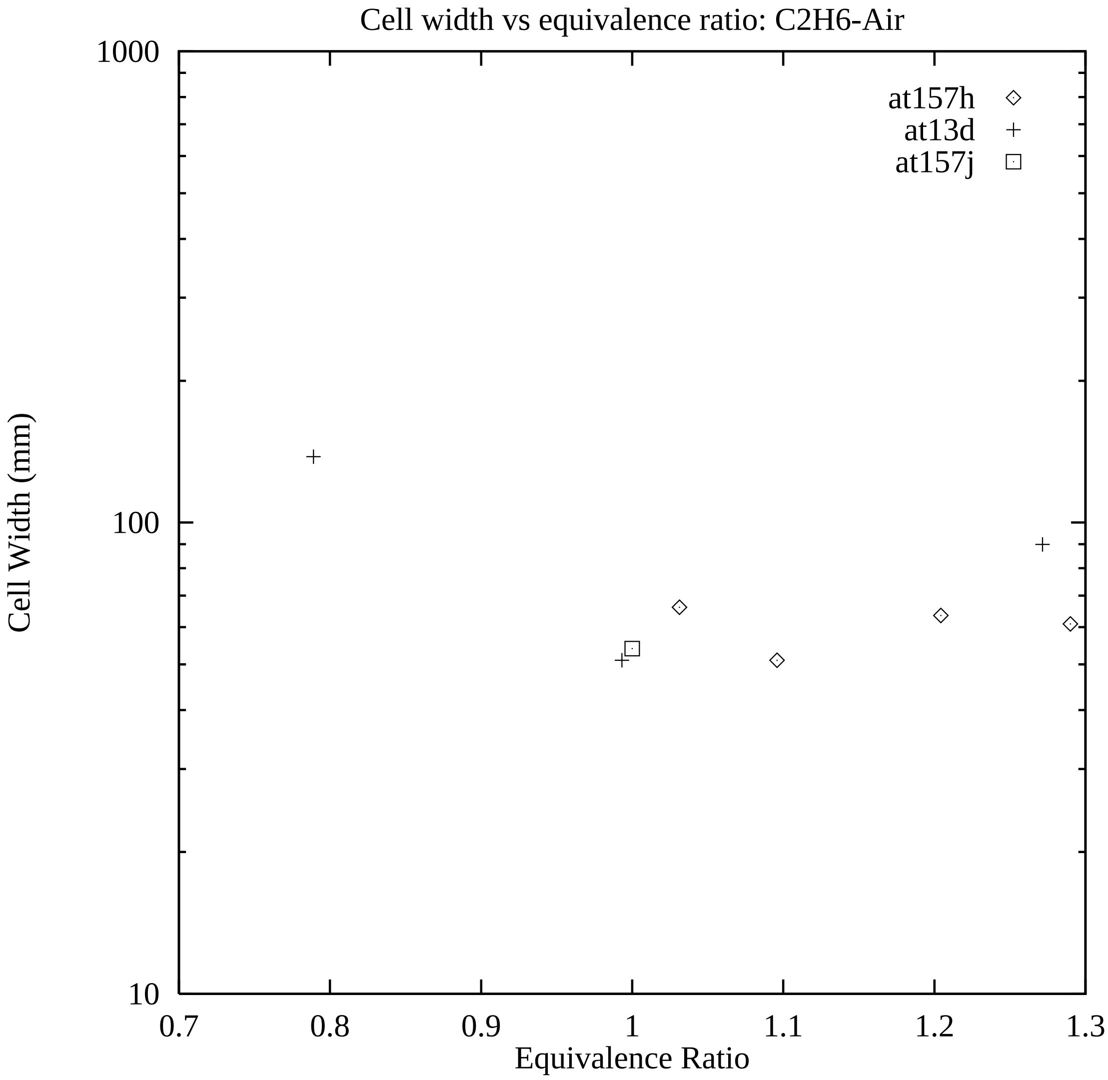

Figure 49: Cell width vs equivalence ratio; C2H6-Air

at157h - Table 210 [84, Moen (1984)] T=293 K, P=92.5 kPa, ER=1.0-1.3

at13d - Table 202 [54, Knystautas (1984)] T=293 K, P=101.3 kPa, ER=0.8 - 1.3

at157j - Table 181 [27, Bull (1982)] T=293 K, P=101.3 kPa, ER=1

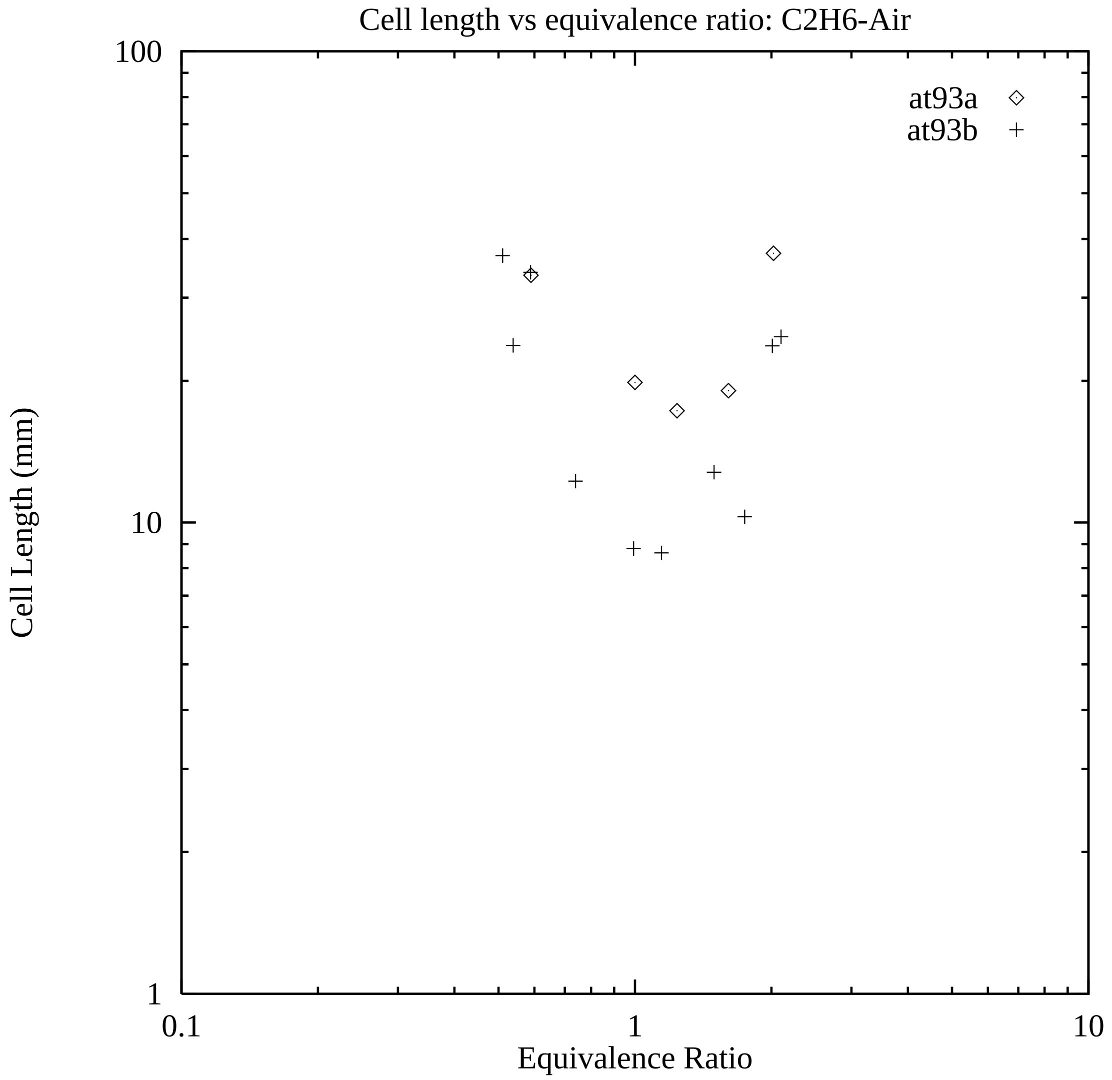

Figure 50: Cell length vs equivalence ratio; C2H6-Air

at93a - Table 257 [22, Bull (1982)] T=293 K, P=33.8 kPa, ER=0.5-2, % N2

at93b - Table 258 [22, Bull (1982)] T=293 K, P=67.5 kPa, ER=0.5-2, % N2

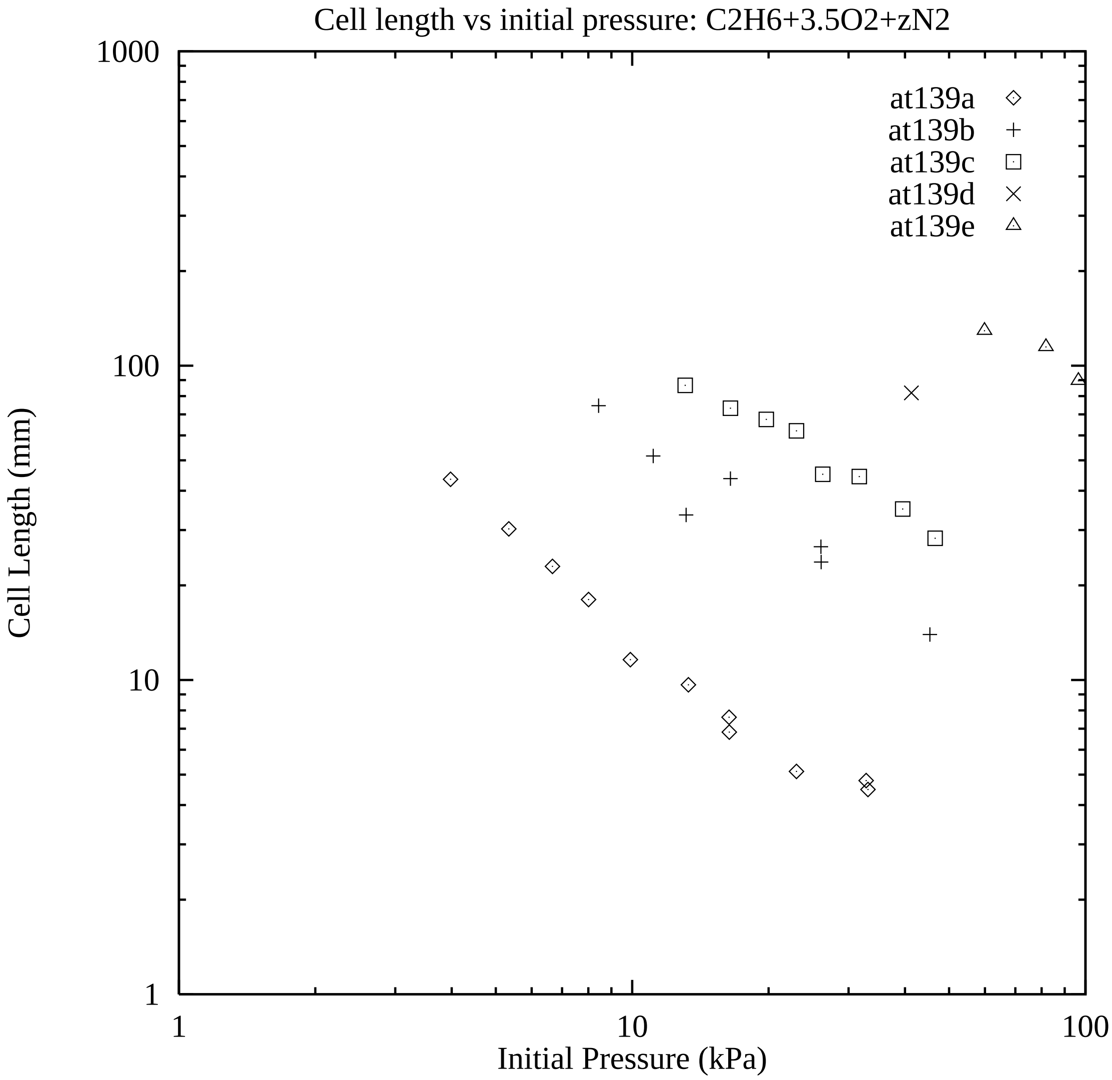

Figure 51: Cell length vs initial pressure; C2H6+3.5O2+zN2

at139a - Table 259 [27, Bull (1982)]

at139b - Table 261 [27, Bull (1982)] 44% N2

at139c - Table 262 [27, Bull (1982)] 61% N2

at139d - Table 263 [27, Bull (1982)] 70% N2

at139e - Table 260 [27, Bull (1982)]

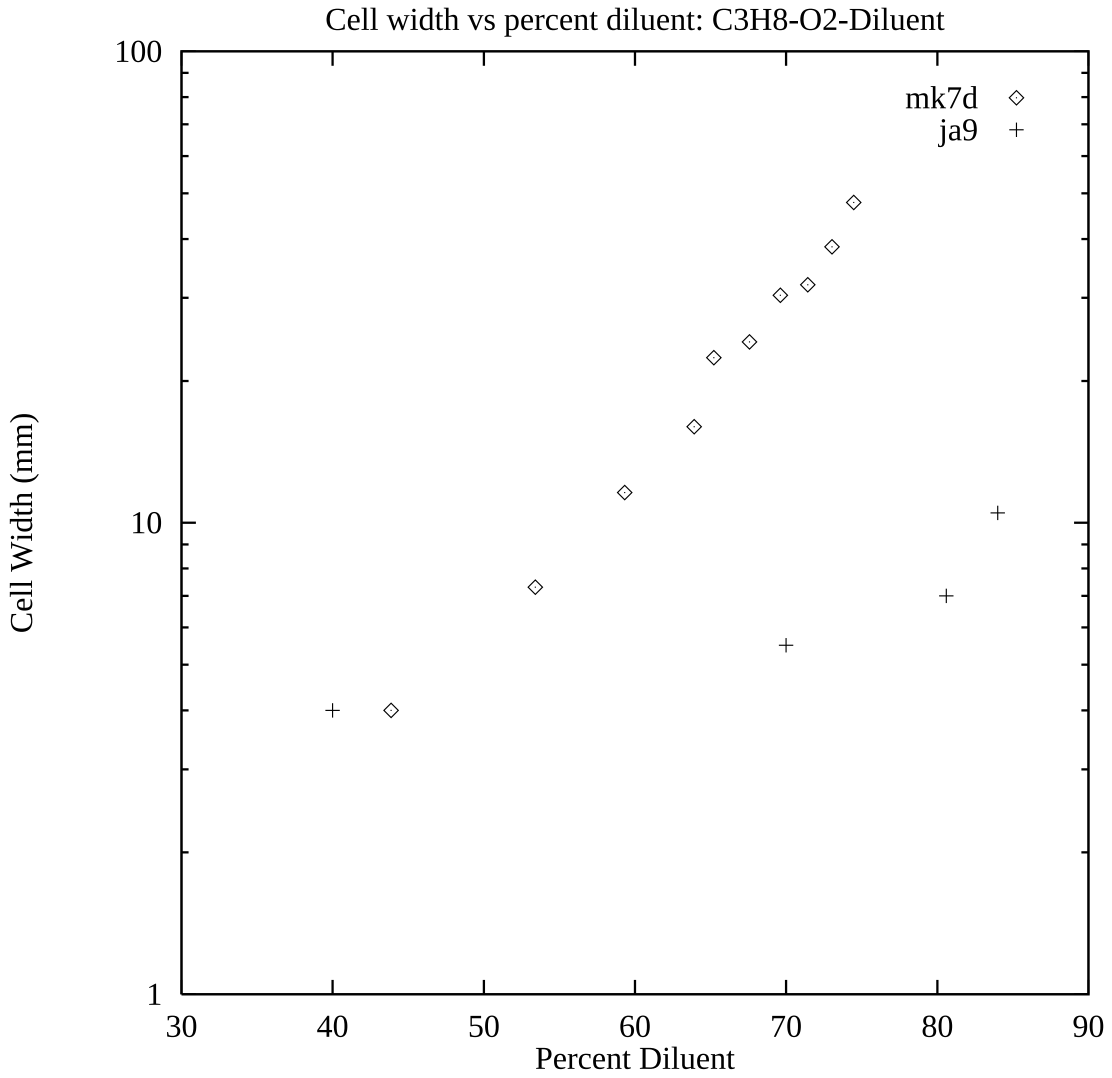

Figure 52: Cell width vs percent diluent; C3H8-O2-Diluent

mk7d - Table 203 [56, Knystautas (1982)] T=293 K, P=101.3 kPa, ER=1, 44 - 76% N2
ja9 - Table 199 [53, Kaneshige (1999)] T=293 K, P=50 kPa, ER=1, 40-87% Ar

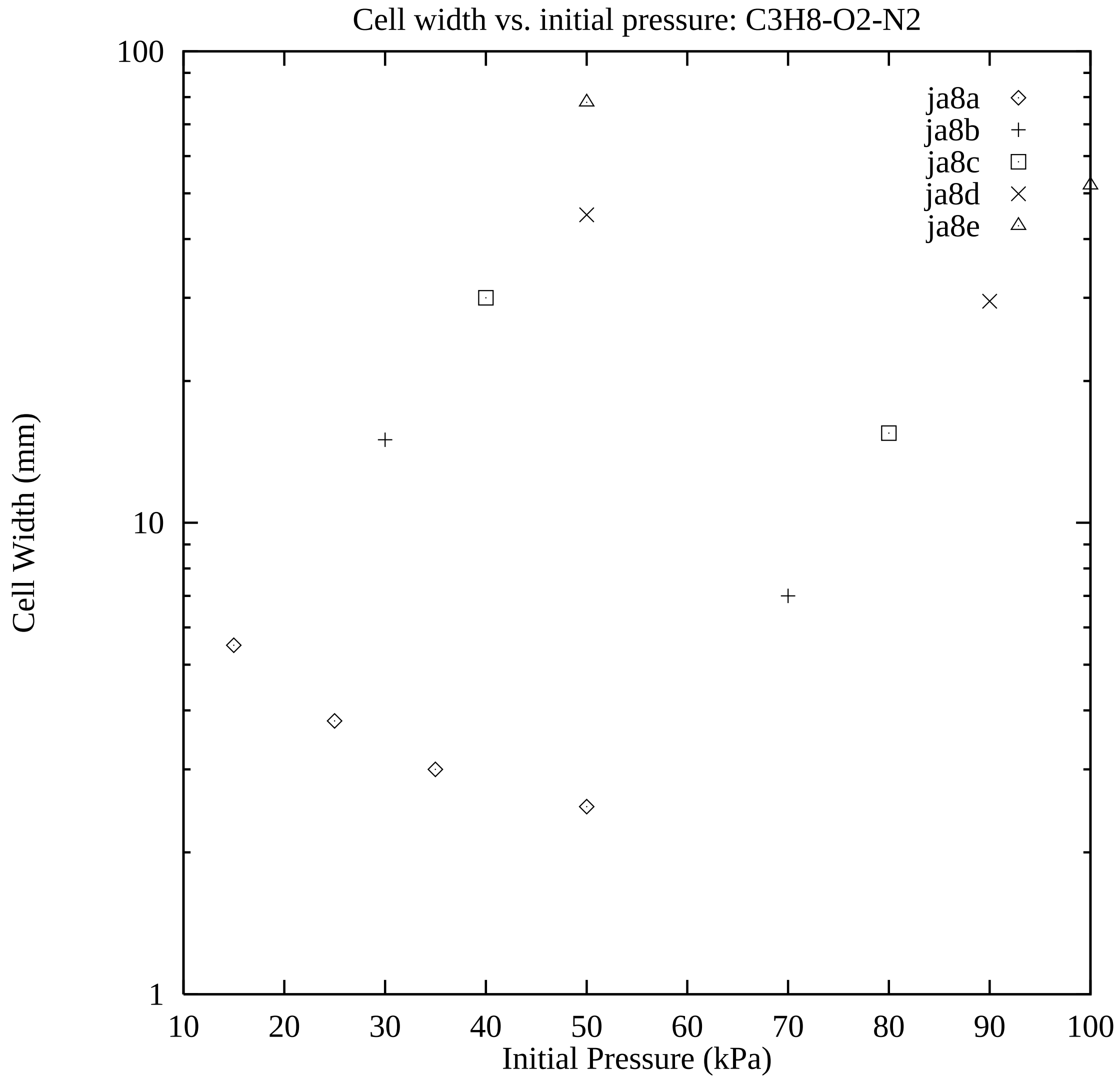

Figure 53: Cell width vs. initial pressure; C3H8-O2-N2

ja8a - Table 198 [53, Kaneshige (1999)] T=293 K, ER=1

ja8b - Table 183 [39, EDL (unpublished)] T=293 K, ER=1, 45.5% N2

ja8c - Table 184 [39, EDL (unpublished)] T=293 K, ER=1, 62.5% N2

ja8d - Table 185 [39, EDL (unpublished)] T=293 K, ER=1, 71.4% N2

ja8e - Table 186 [39, EDL (unpublished)] T=293 K, ER=1, 75.8% N2

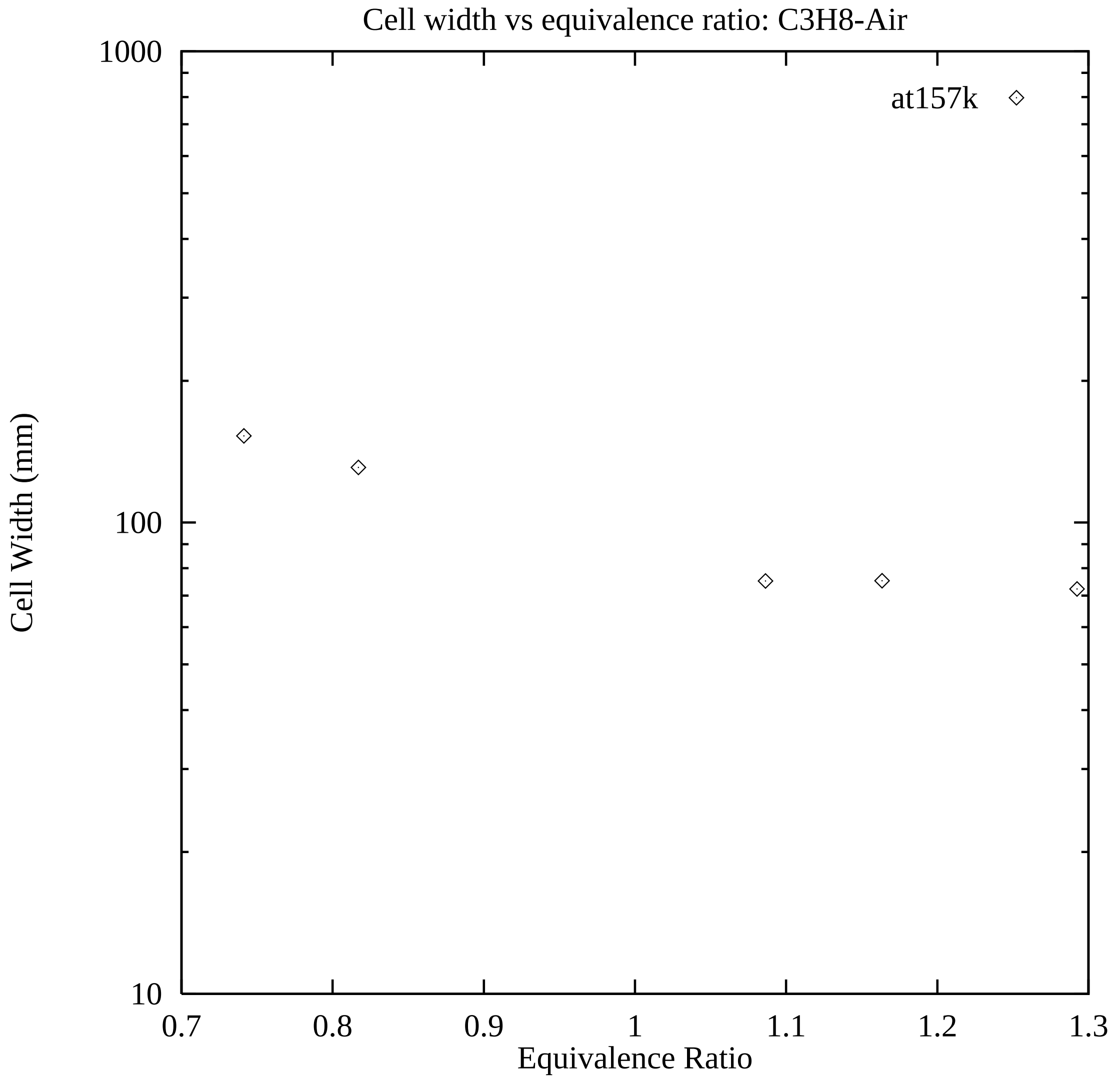

Figure 54: Cell width vs equivalence ratio; C3H8-Air

at157k - Table 211 [84, Moen (1984)]

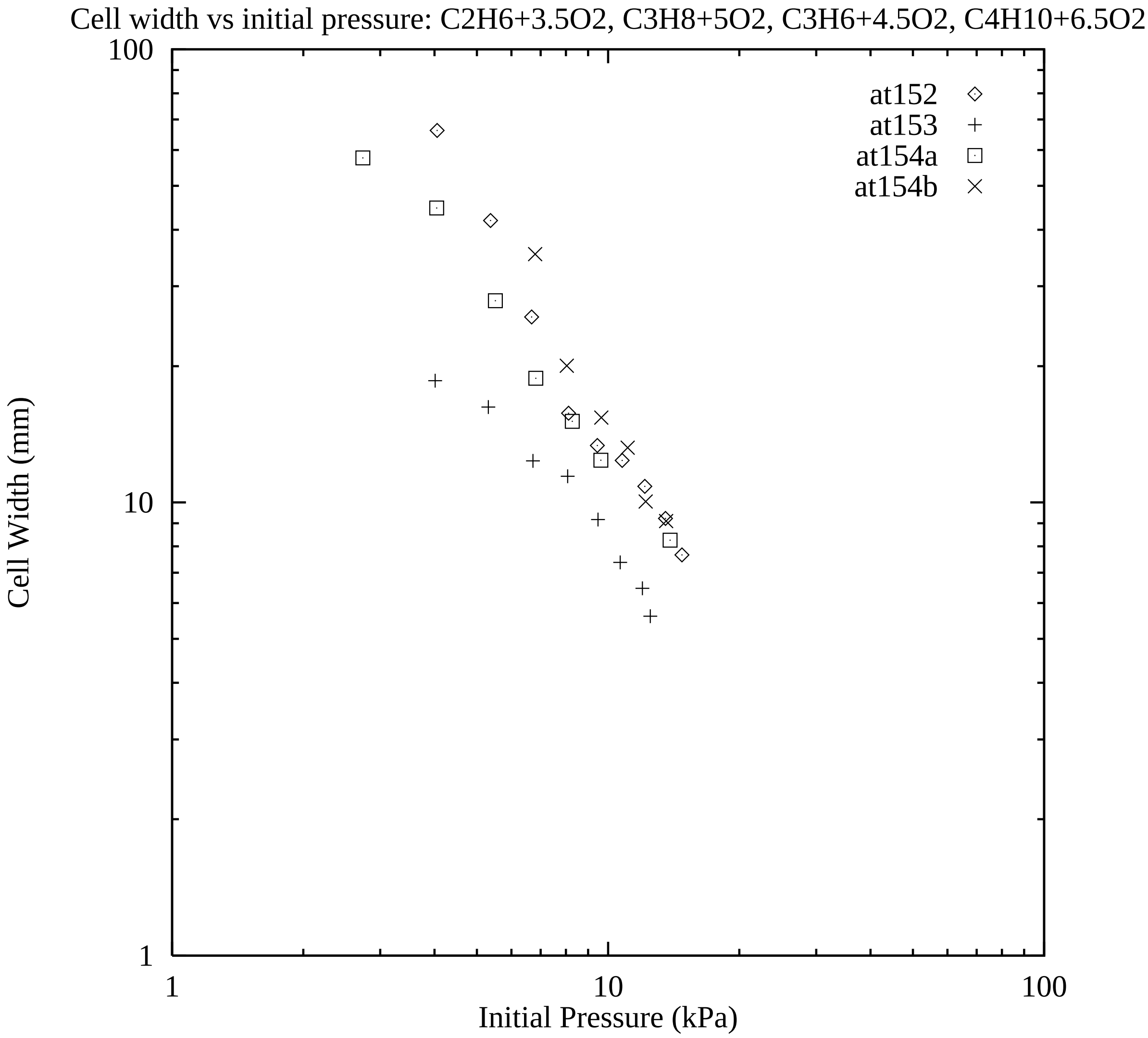

Figure 55: Cell width vs initial pressure; C2H6+3.5O2, C3H8+5O2, C3H6+4.5O2, C4H10+6.5O2

at152 - Table 205 [56, Knystautas (1982)] Fuel=C2H6

at153 - Table 206 [56, Knystautas (1982)] Fuel=C3H6

at154a - Table 207 [56, Knystautas (1982)] Fuel=C3H8

at154b - Table 204 [56, Knystautas (1982)] Fuel=C4H10

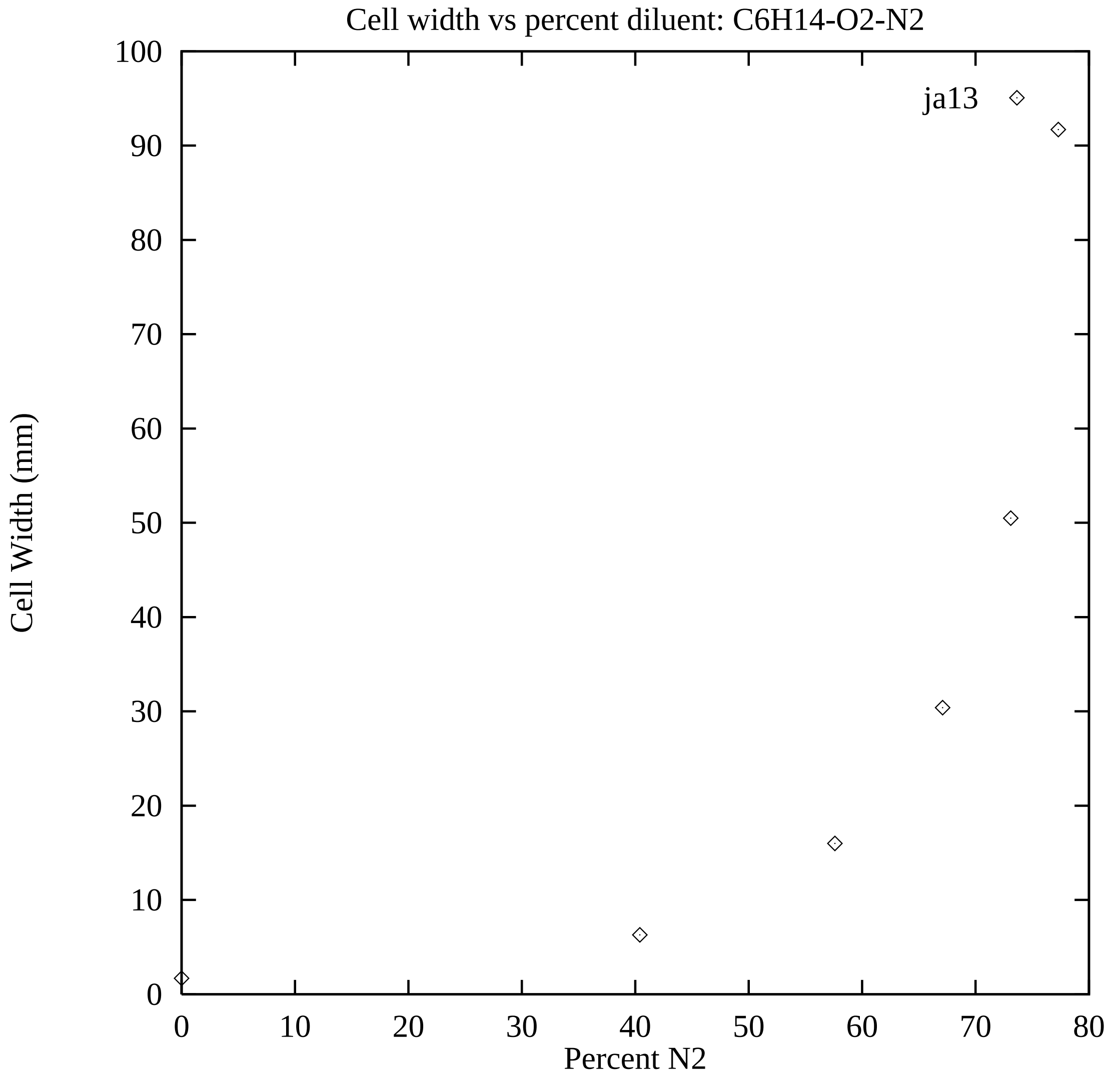

Figure 56: Cell width vs percent diluent; C6H14-O2-N2

ja13 - Table 187 [39, EDL (unpublished)] P=40 kPa, ER=1

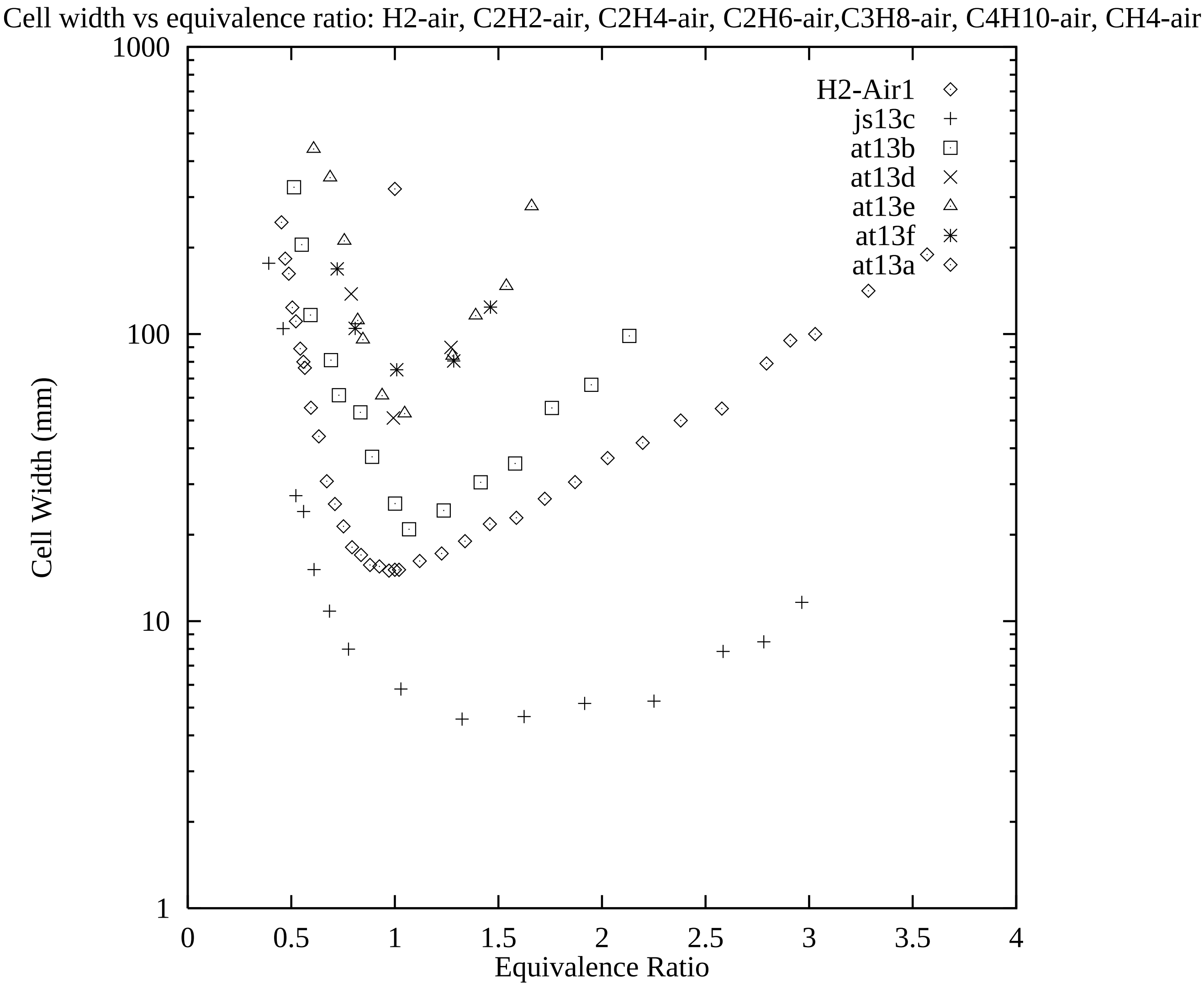

Figure 57: Cell width vs equivalence ratio; H2-air, C2H2-air, C2H4-air, C2H6-air,C3H8-air, C4H10-air, CH4-air

H2-Air1 - Table 30 [48, Guirao (1982)] Fuel=H2

js13c - Table 135 [54, Knystautas (1984)] Fuel=C2H2

at13b - Table 166 [54, Knystautas (1984)] Fuel=C2H4

at13d - Table 202 [54, Knystautas (1984)] Fuel=C2H6

at13e - Table 201 [54, Knystautas (1984)] Fuel=C3H8

at13f - Table 200 [54, Knystautas (1984)] Fuel=C4H10

at13a - Table 112 [54, Knystautas (1984)] Fuel=CH4

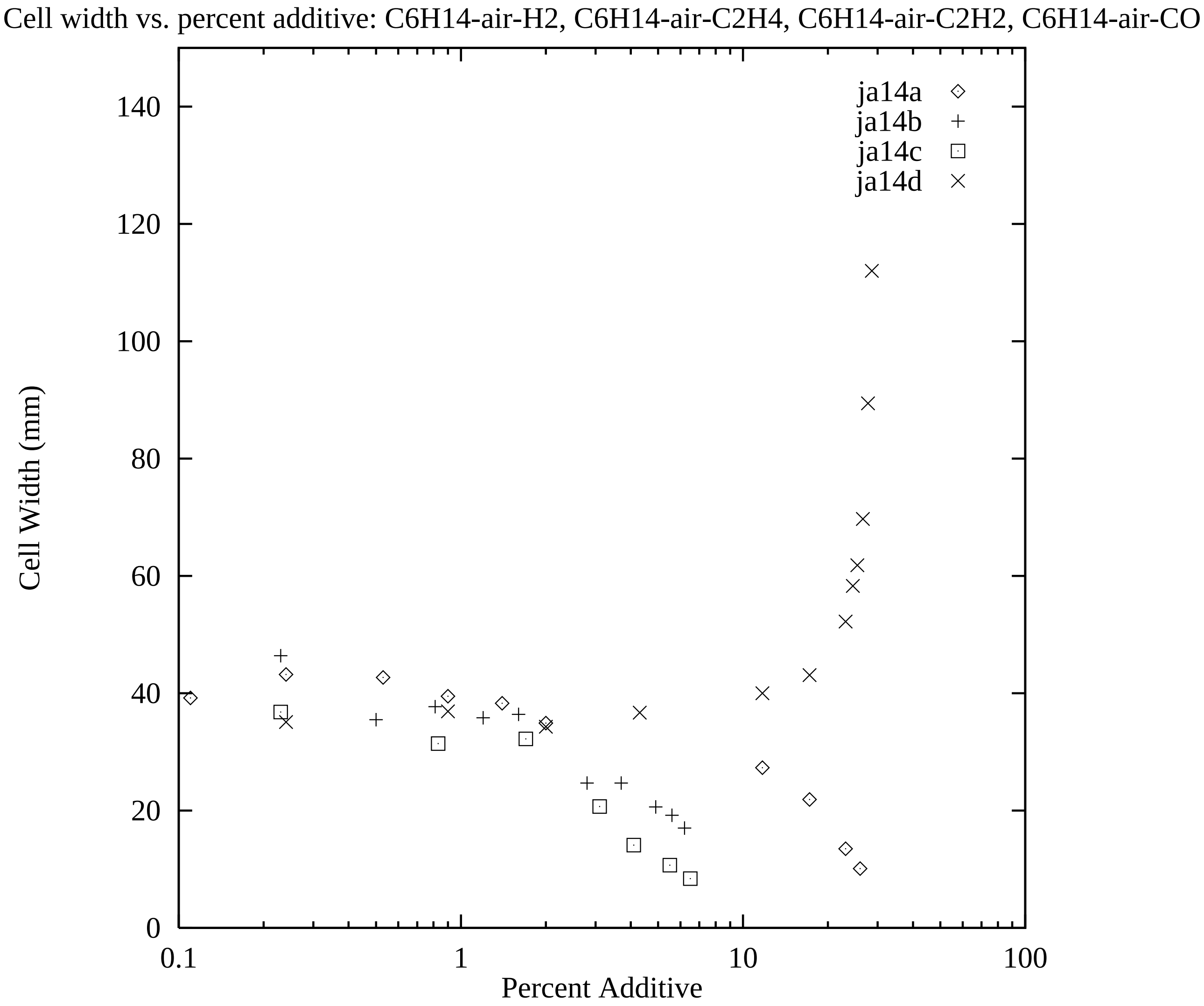

Figure 58: Cell width vs. percent additive; C6H14-air-H2, C6H14-air-C2H4, C6H14-air-C2H2, C6H14-air-CO

ja14a - Table 188 [39, EDL (unpublished)] ER=1, 0-26% H2

ja14b - Table 189 [39, EDL (unpublished)] ER=1, 0-5.6% C2H4

ja14c - Table 190 [39, EDL (unpublished)] ER=1, 0-6.5% C2H2

ja14d - Table 191 [39, EDL (unpublished)] ER=1, 0-28.6% CO

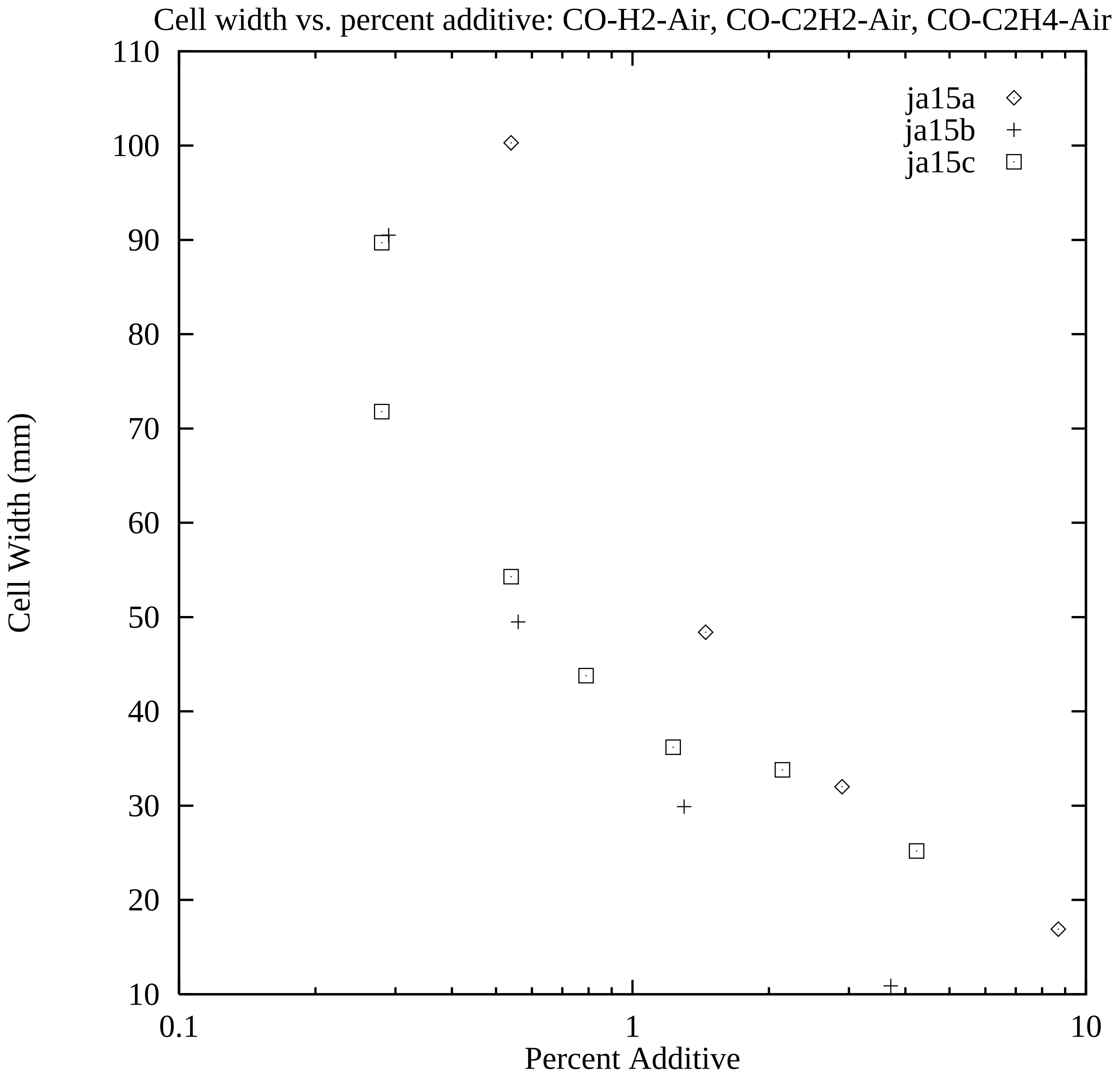

Figure 59: Cell width vs. percent additive; CO-H2-Air, CO-C2H2-Air, CO-C2H4-Air

ja15a - Table 192 [39, EDL (unpublished)] P=100 kPa, ER=1, 0.54-8.7% H2

ja15b - Table 193 [39, EDL (unpublished)] P=100 kPa, ER=1, 0.29-3.71% C2H2

ja15c - Table 194 [39, EDL (unpublished)] P=100 kPa, ER=1, 0.28-4.23% C2H4

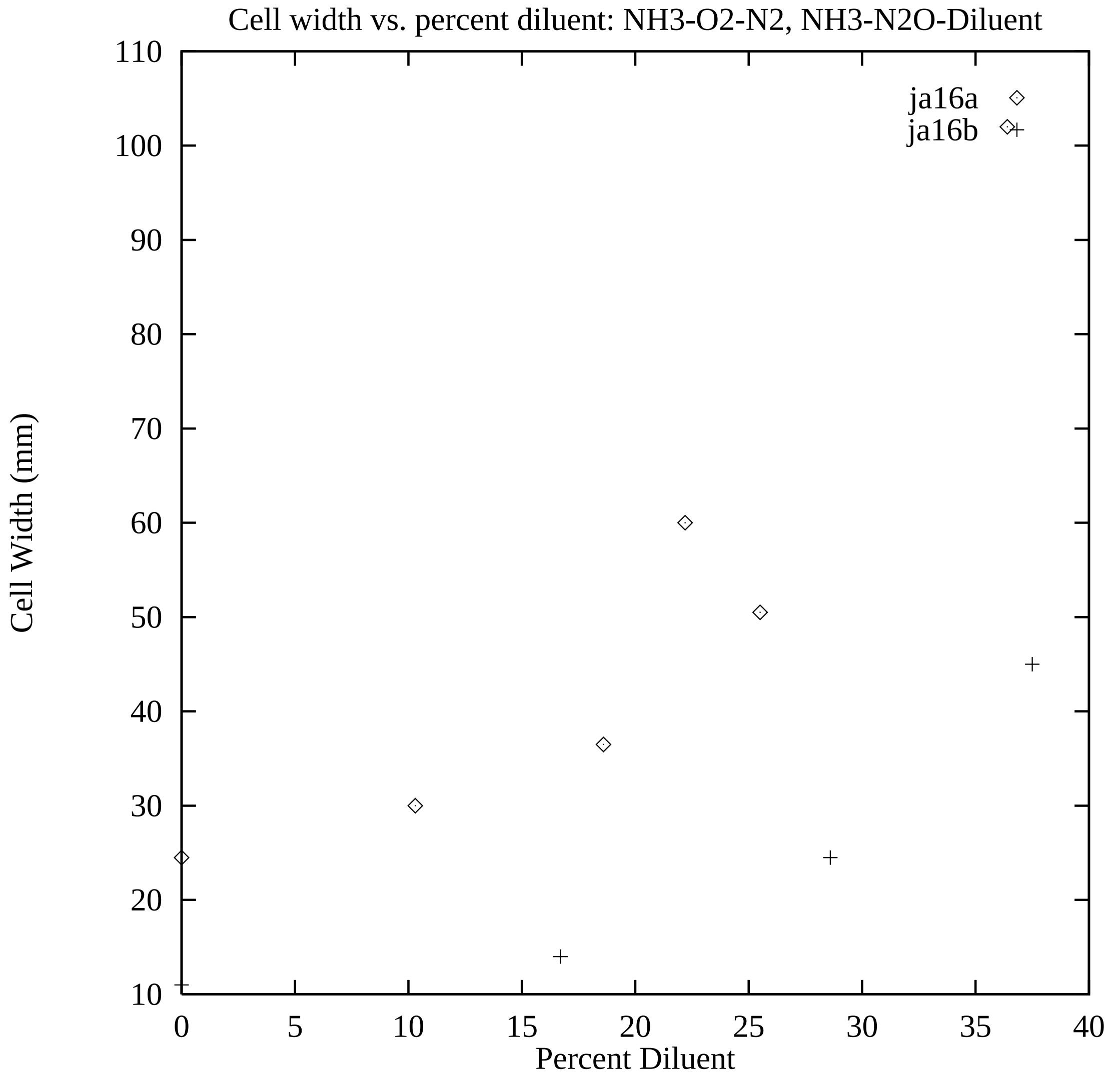

Figure 60: Cell width vs. percent diluent; NH3-O2-N2, NH3-N2O-Diluent

ja16a - Table 178 [3, Akbar (1997)] P=66-81 kPa, ER=1, 0-22.2% N2, Oxidizer=O2

ja16b - Table 179 [3, Akbar (1997)] P=55-75 kPa, ER=1, 0-37.5% N2, Oxidizer=N2O

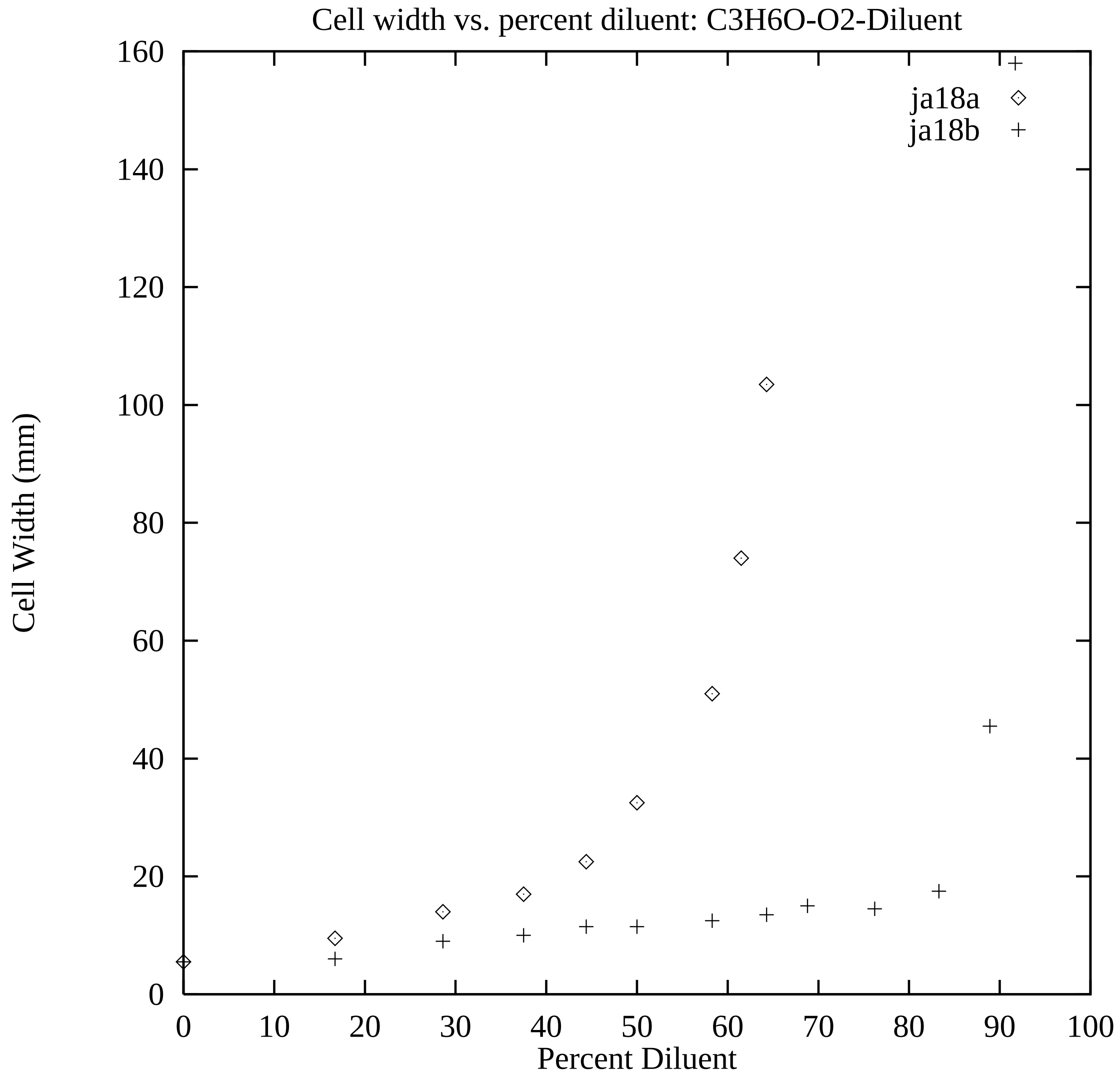

Figure 61: Cell width vs. percent diluent; C3H6O-O2-Diluent

ja18a - Table 196 [39, EDL (unpublished)] T=293 K, P=22.5 kPa, ER=1, 0-64.3% N2

ja18b - Table 197 [39, EDL (unpublished)] T=293 K, P=22.5 kPa, ER=1, 0-91.7% Ar

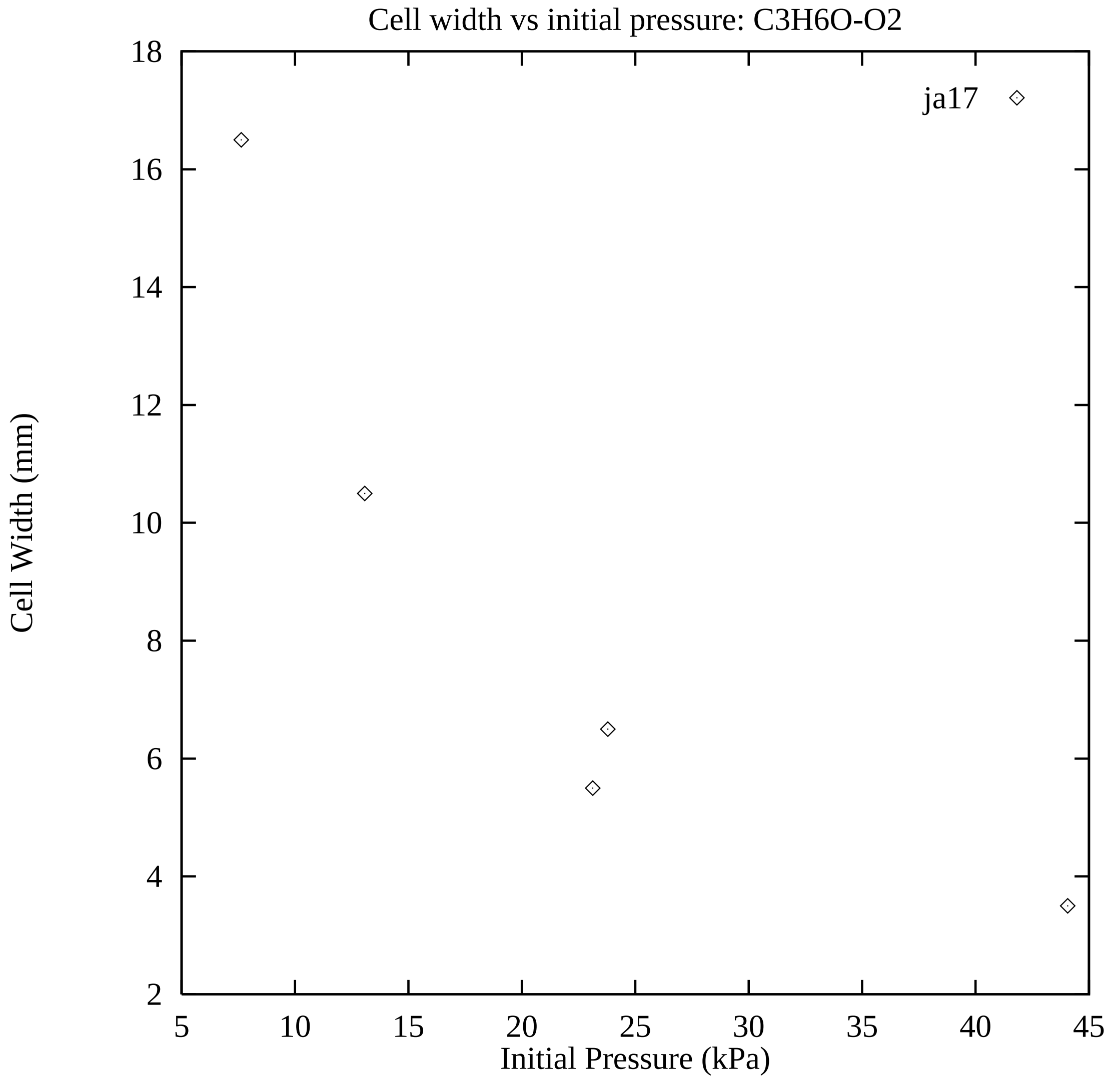

Figure 62: Cell width vs initial pressure; C3H6O-O2

ja17 - Table 195 [39, EDL (unpublished)] T=293 K, ER=1

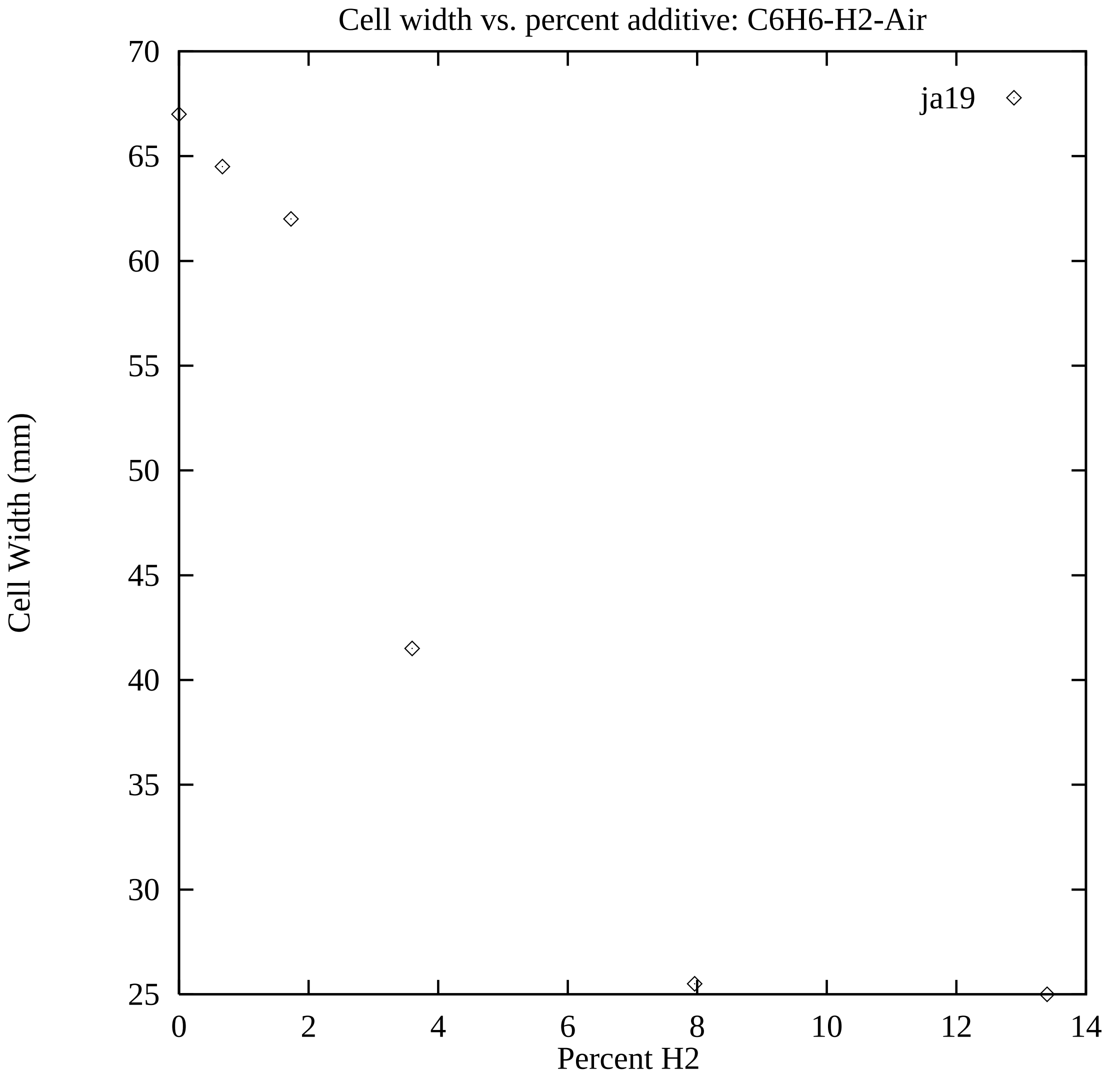

Figure 63: Cell width vs. percent additive; C6H6-H2-Air

ja19 - Table 208 [57, Knystautas (1998)] T=293 K, P=101.3 kPa, ER=1

2.2 Critical Tube Diameter

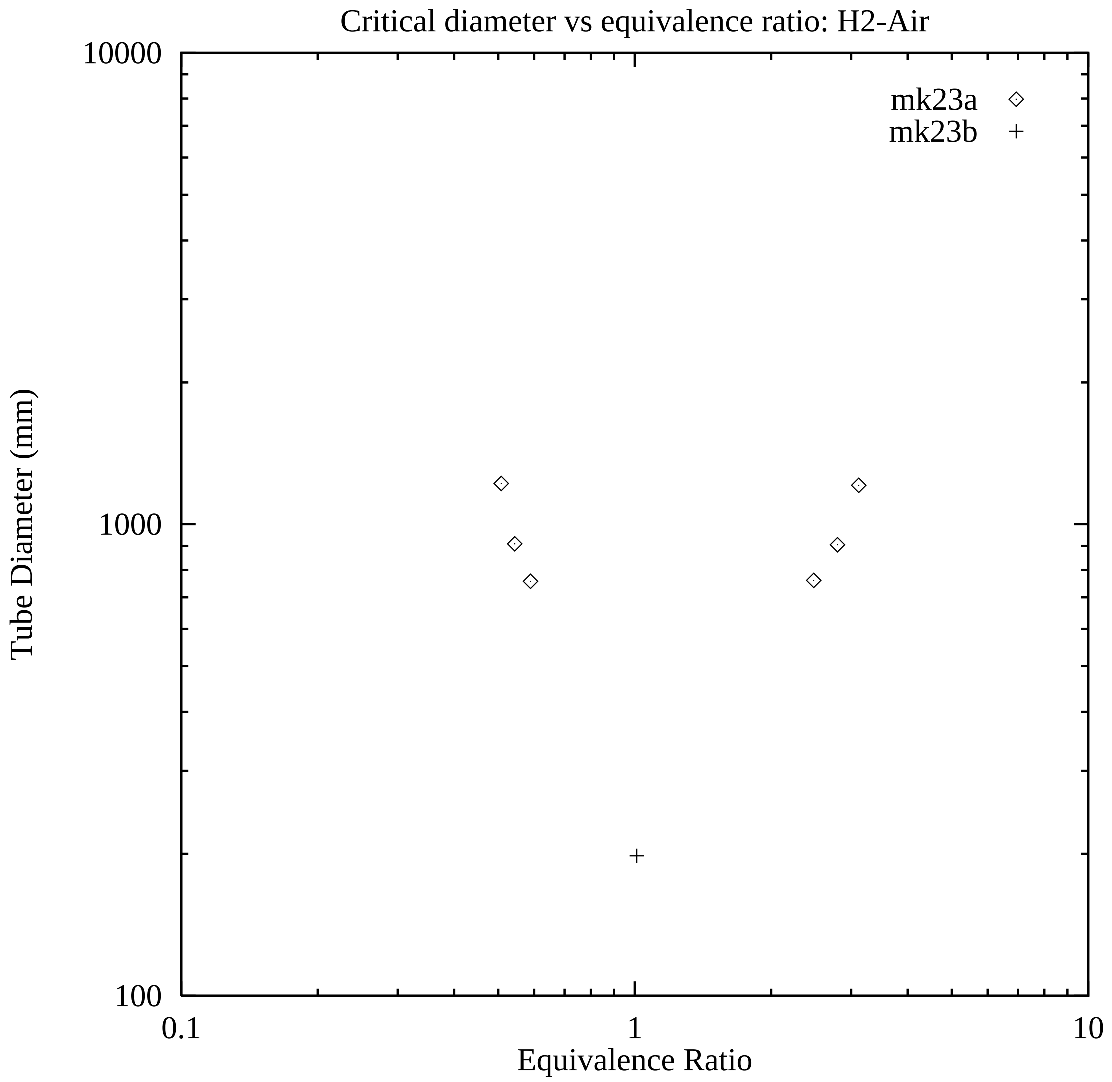

Figure 64: Critical diameter vs equivalence ratio; H2-Air

mk23a - Table 271 [48, Guirao (1982)] T=293 K, P=101.3 kPa

mk23b - Table 272 [48, Guirao (1982)] T=293 K, P=101.3 kPa

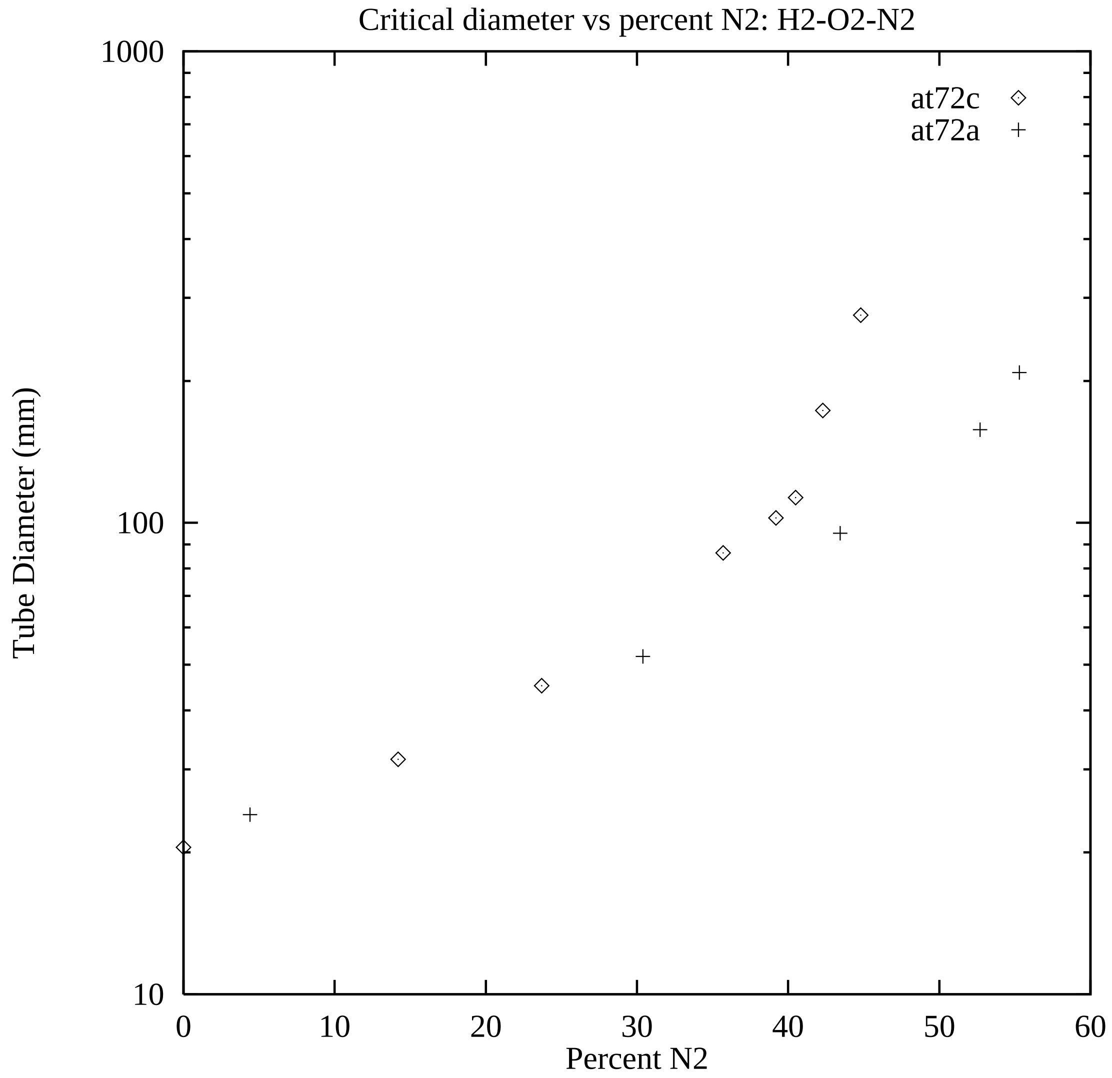

Figure 65: Critical diameter vs percent N2; H2-O2-N2

at72c - Table 276 [80, Matsui (1979)] P=101.3 kPa, ER=1

at72a - Table 273 [56, Knystautas (1982)] P=101.3 kPa, ER=1

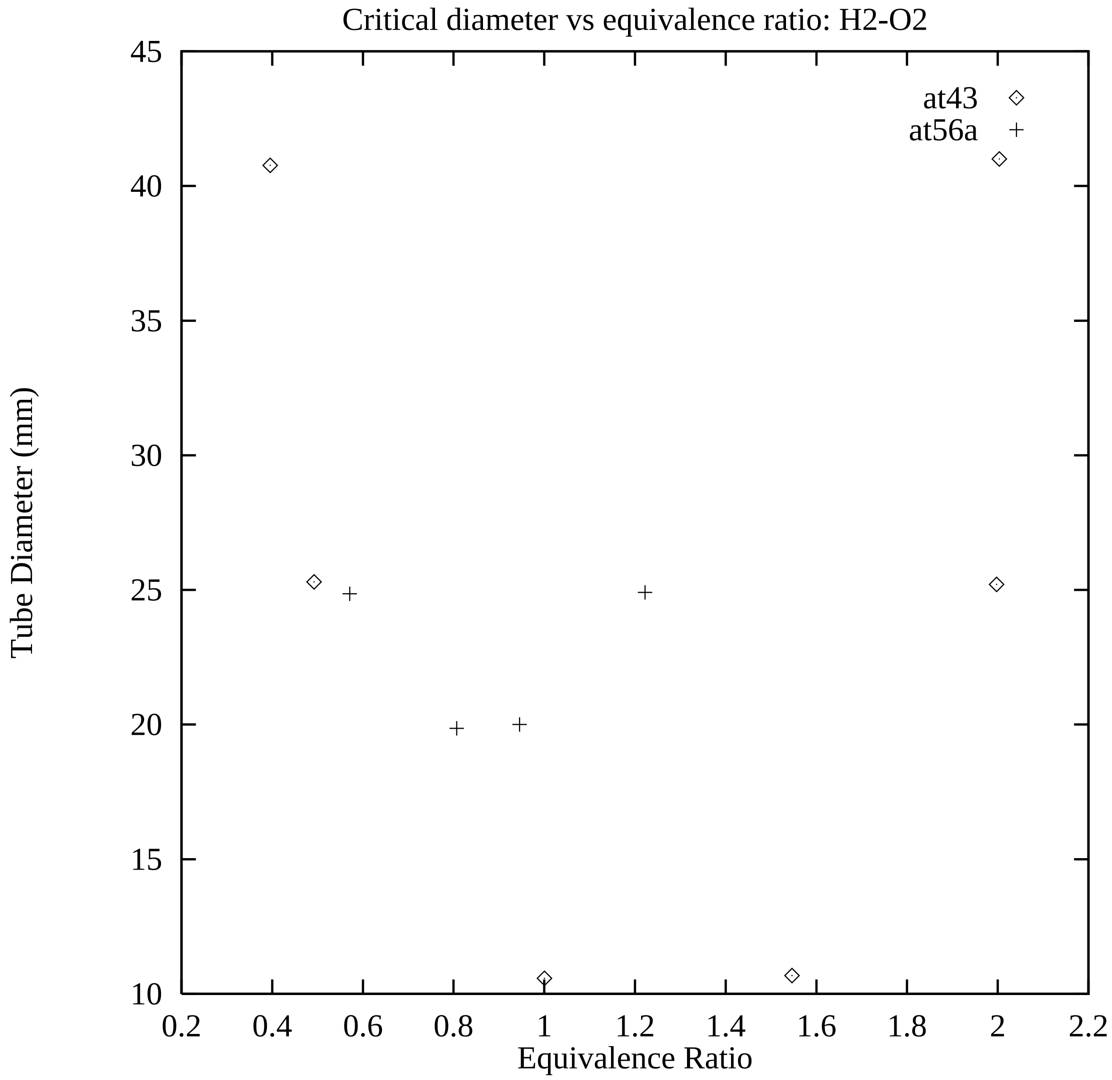

Figure 66: Critical diameter vs equivalence ratio; H2-O2

at43 - Table 280 [99, Plaster (1991)] T=100 K, P=100 kPa

at56a - Table 274 [77, Makris (1994)] T=293 K, P=101.3 kPa

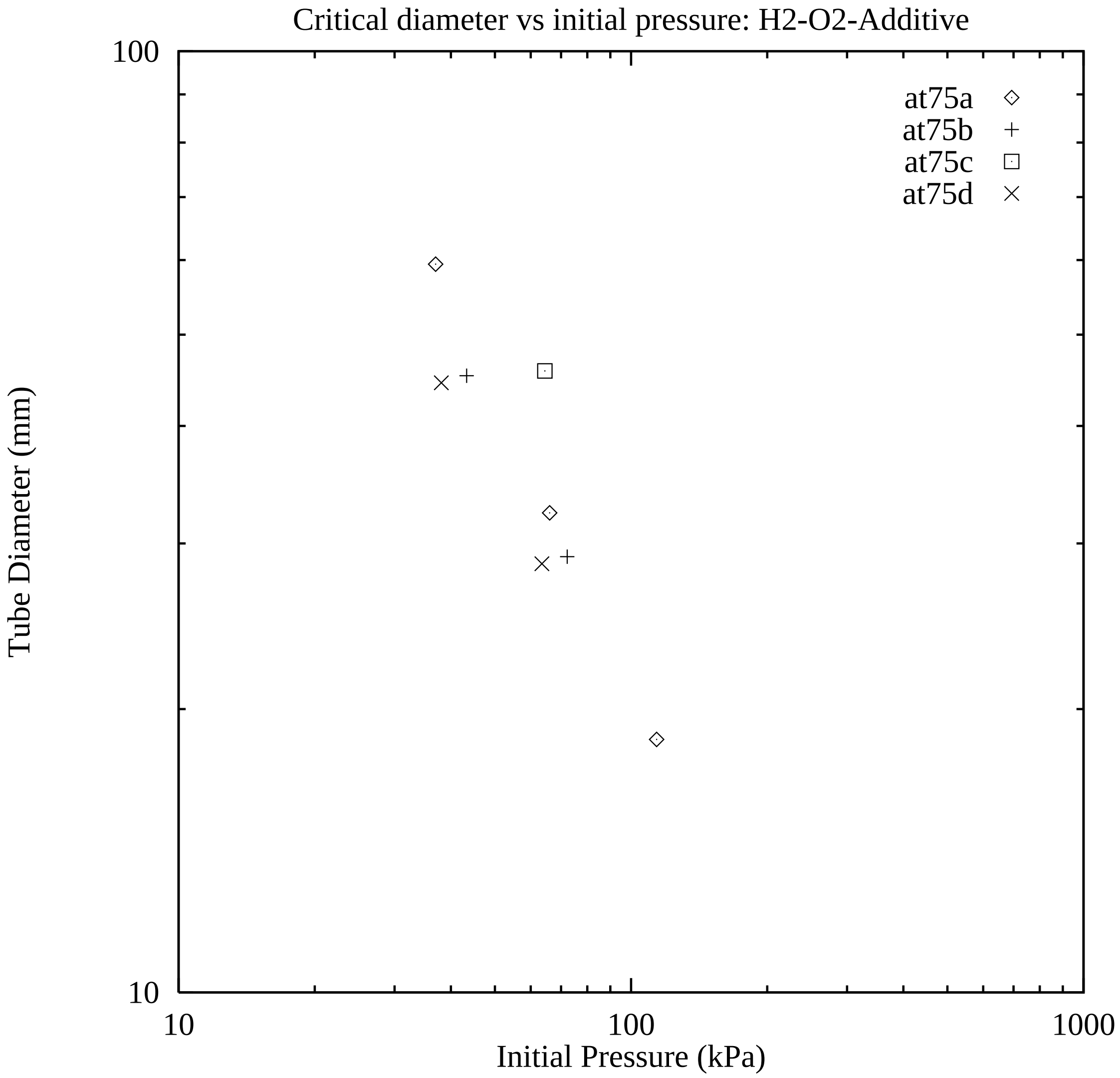

Figure 67: Critical diameter vs initial pressure; H2-O2-Additive

at75a - Table 275 [80, Matsui (1979)] T=293 K, ER=1

at75b - Table 277 [87, Moen (1985)] T=293 K, ER=1

at75c - Table 279 [87, Moen (1985)] T=293 K, ER=1, 5% CO2

at75d - Table 278 [87, Moen (1985)] T=293 K, ER=1, 5% CF3Br

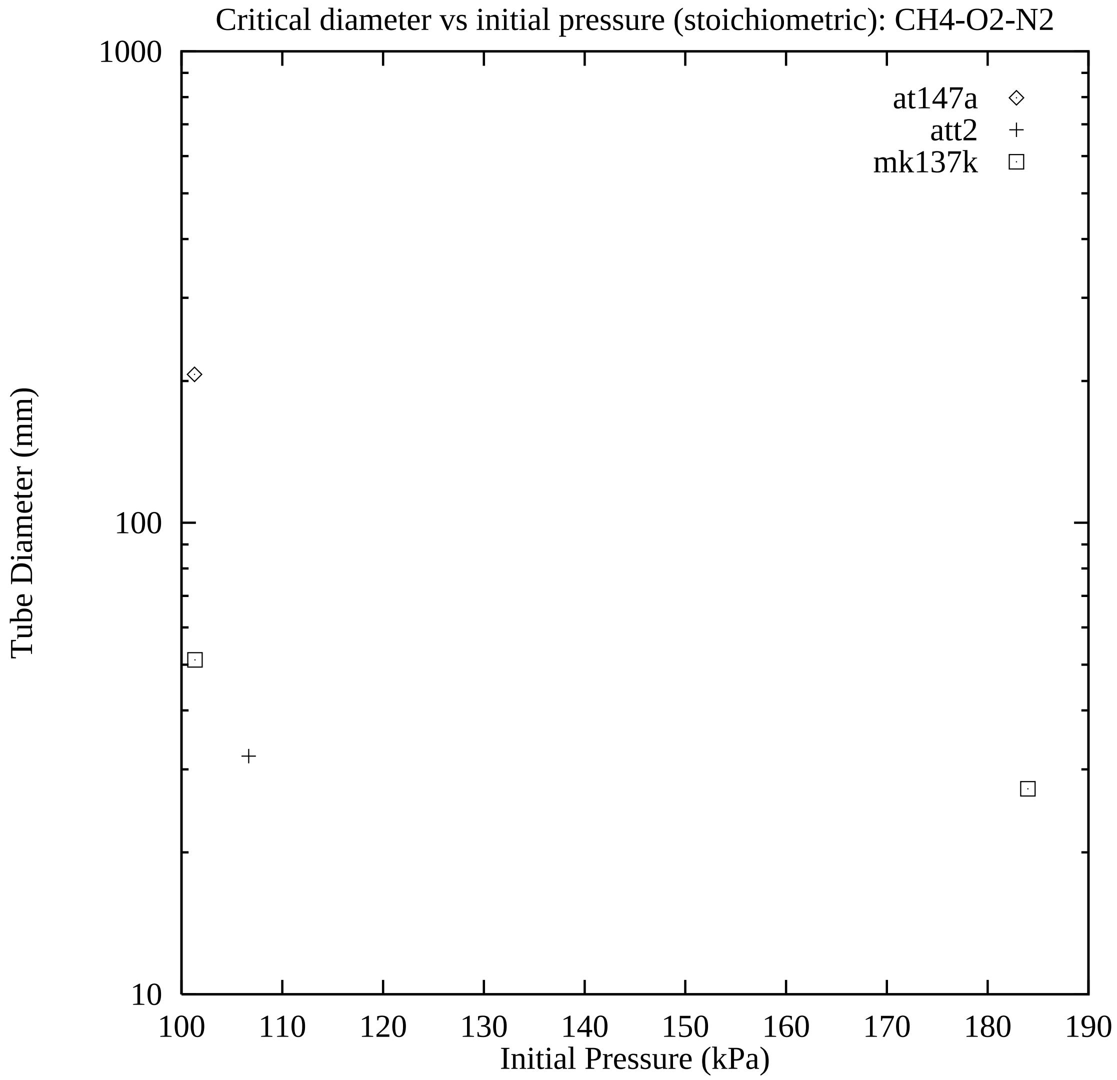

Figure 68: Critical diameter vs initial pressure (stoichiometric); CH4-O2-N2

at147a - Table 285 [56, Knystautas (1982)] ER=1, 36.2% N2

att2 - Table 290 [129, Zeldovich (1956)] ER=1

mk137k - Table 289 [80, Matsui (1979)] ER=1

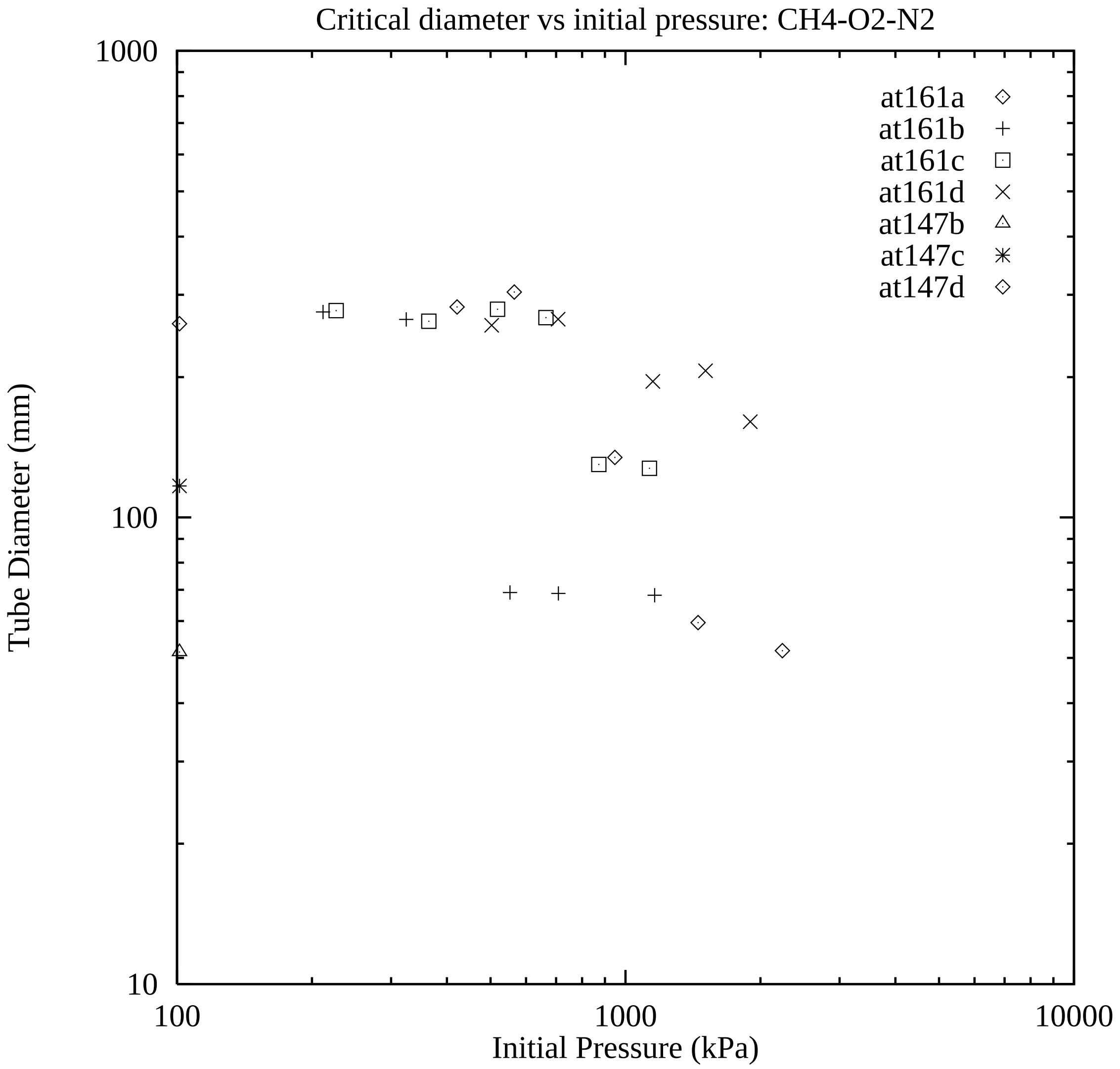

Figure 69: Critical diameter vs initial pressure; CH4-O2-N2

at161a - Table 281 [11, Bauer (1984)] ER=1.08, 31.9% N2
at161b - Table 282 [11, Bauer (1984)] ER=1.09, 54.9% N2
at161c - Table 283 [11, Bauer (1984)] ER=1.15, 64.3% N2
at161d - Table 284 [11, Bauer (1984)] ER=1.09, 67.7% N2
at147b - Table 286 [80, Matsui (1979)] ER=1.3
at147c - Table 287 [80, Matsui (1979)] ER=1.3, 23% N2
at147d - Table 288 [80, Matsui (1979)] ER=1.3, 50% N2

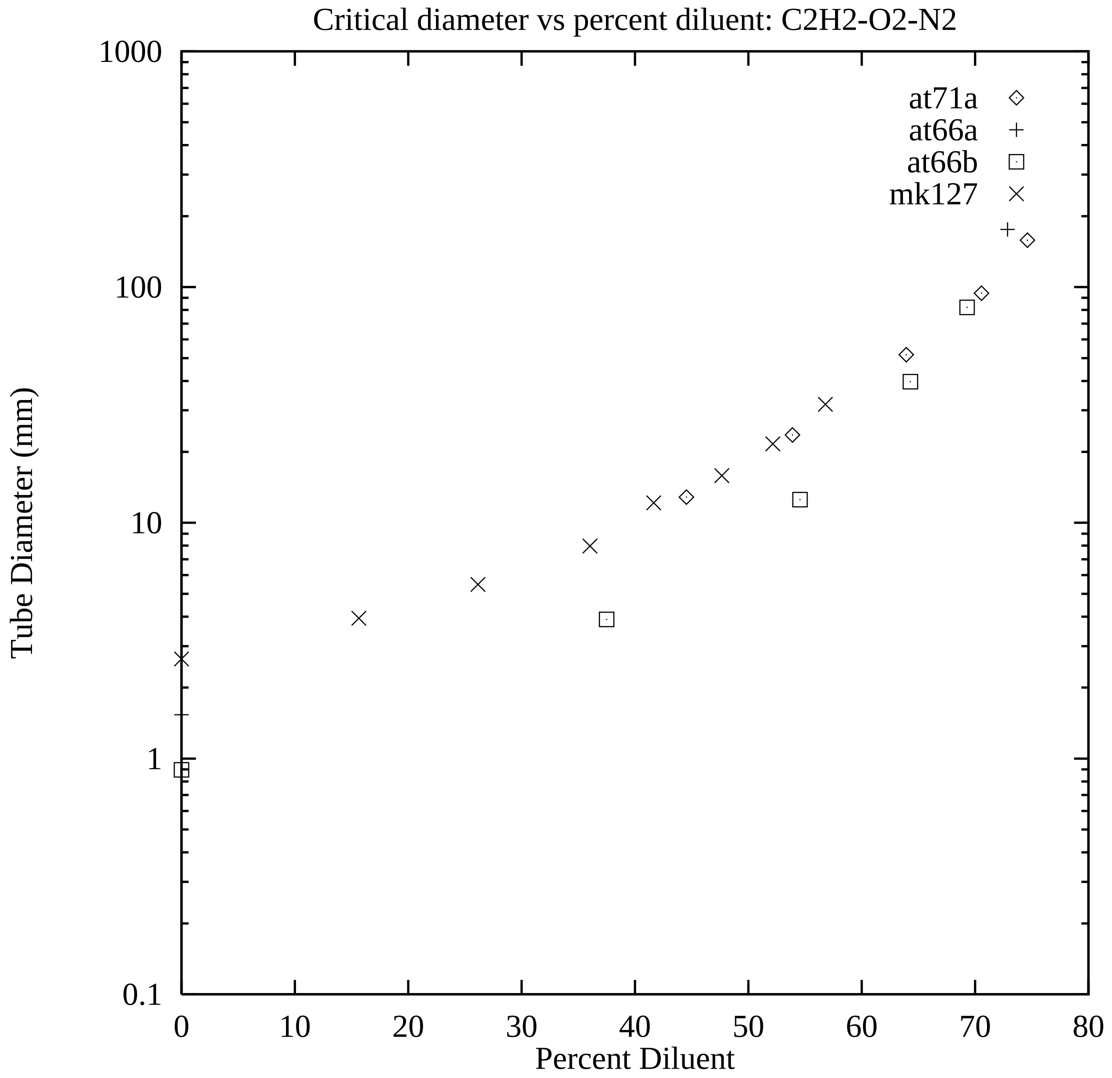

Figure 70: Critical diameter vs percent diluent; C2H2-O2-N2

at71a - Table 291 [56, Knystautas (1982)] ER=1

at66a - Table 294 [80, Matsui (1979)] ER=1

at66b - Table 293 [80, Matsui (1979)] ER=1.67

mk127 - Table 297 [129, Zeldovich (1956)] ER=1

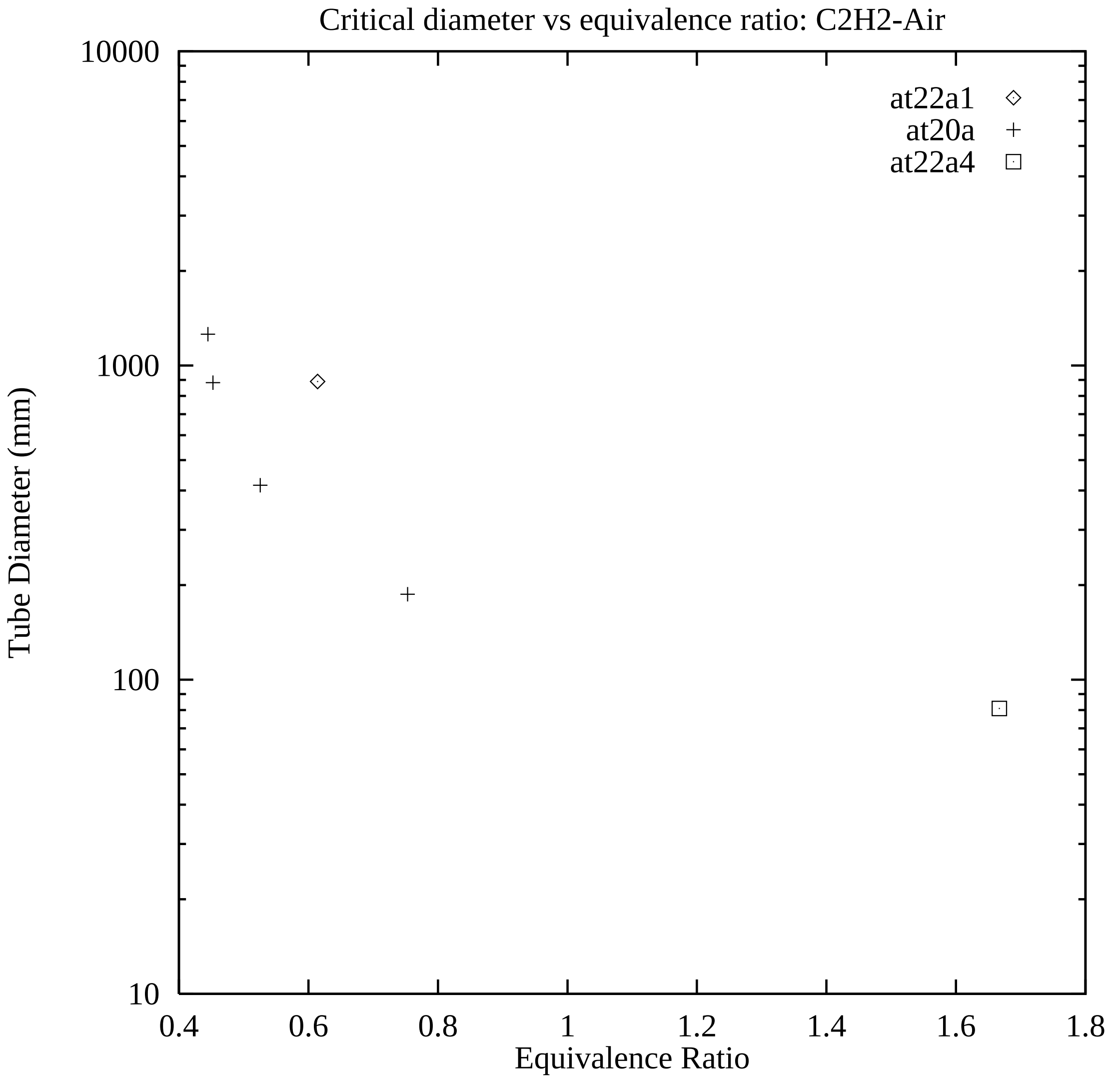

Figure 71: Critical diameter vs equivalence ratio; C2H2-Air

at22a1 - Table 295 [84, Moen (1984)]

at20a - Table 296 [102, Rinnan (1982)]

at22a4 - Table 292 [80, Matsui (1979)]

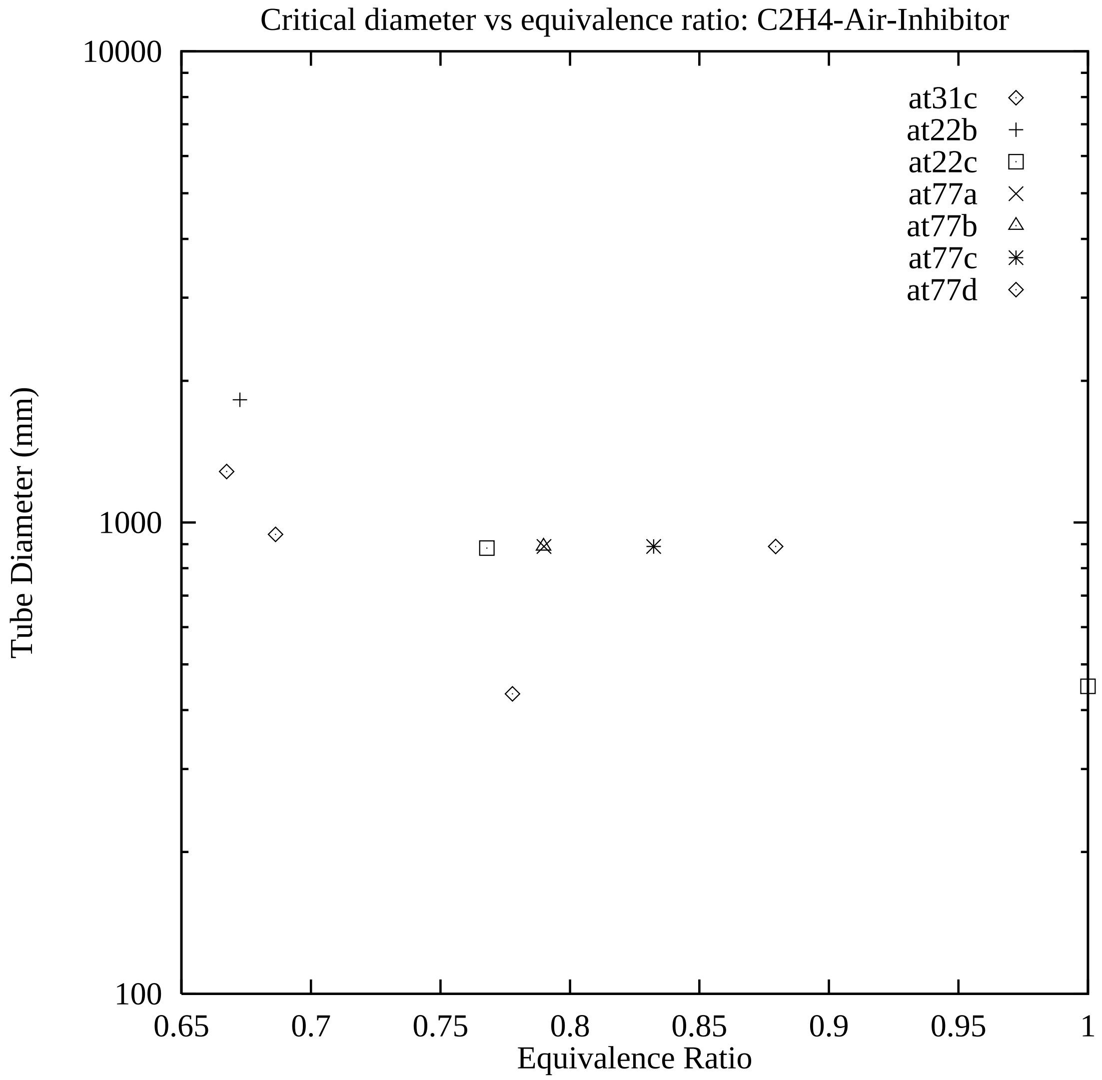

Figure 72: Critical diameter vs equivalence ratio; C2H4-Air-Inhibitor

at31c - Table 316 [102, Rinnan (1982)]

at22b - Table 309 [84, Moen (1984)]

at22c - Table 310 [85, Moen (1982)]

at77a - Table 311 [87, Moen (1985)] 1.5% CF4

at77b - Table 312 [87, Moen (1985)] 1.5% CF3Br

at77c - Table 313 [87, Moen (1985)] 3% CF3Br

at77d - Table 314 [87, Moen (1985)] 3% CO2

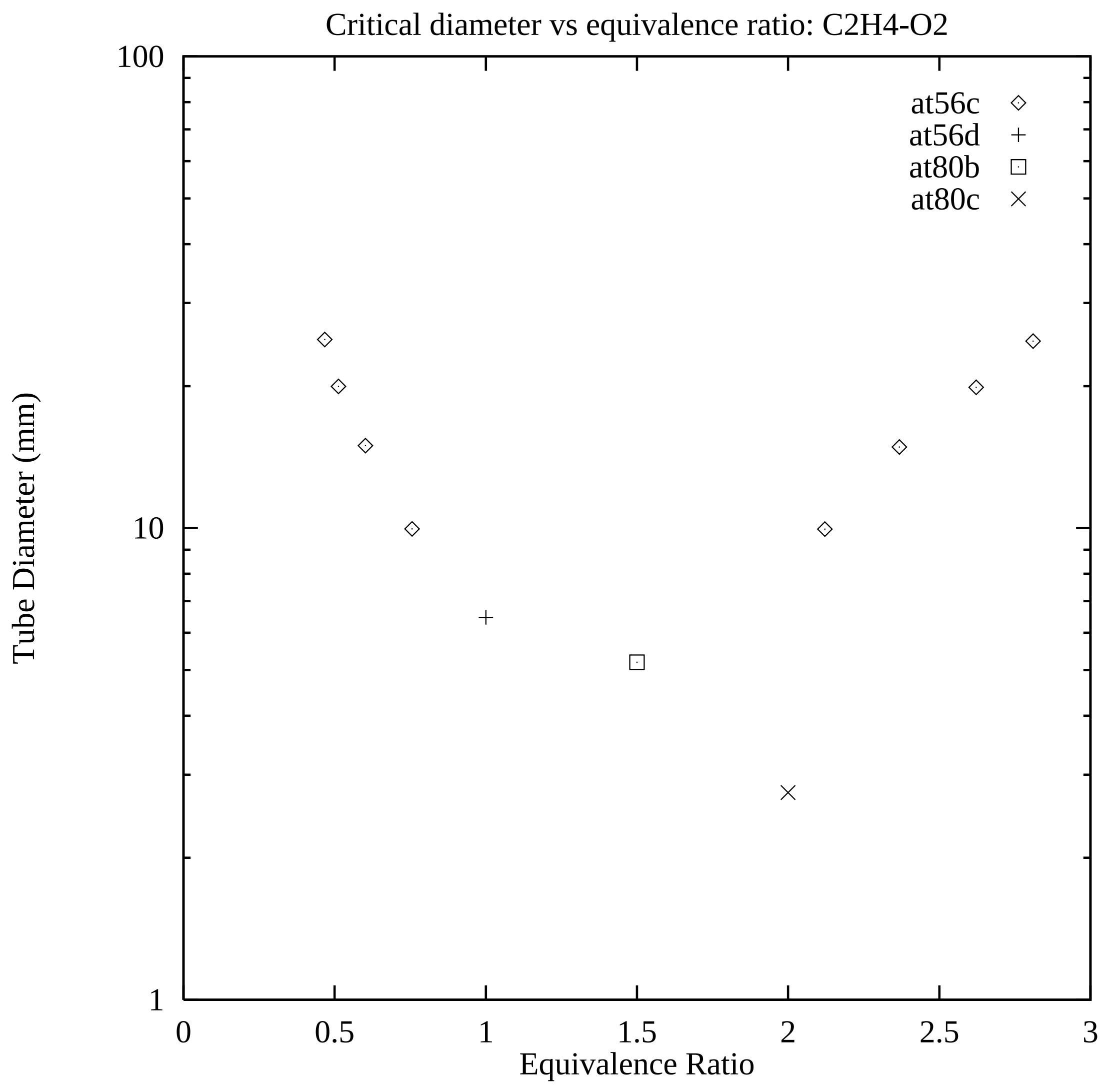

Figure 73: Critical diameter vs equivalence ratio; C2H4-O2

at56c - Table 303 [77, Makris (1994)]

at56d - Table 305 [80, Matsui (1979)]

at80b - Table 306 [80, Matsui (1979)]

at80c - Table 307 [80, Matsui (1979)]

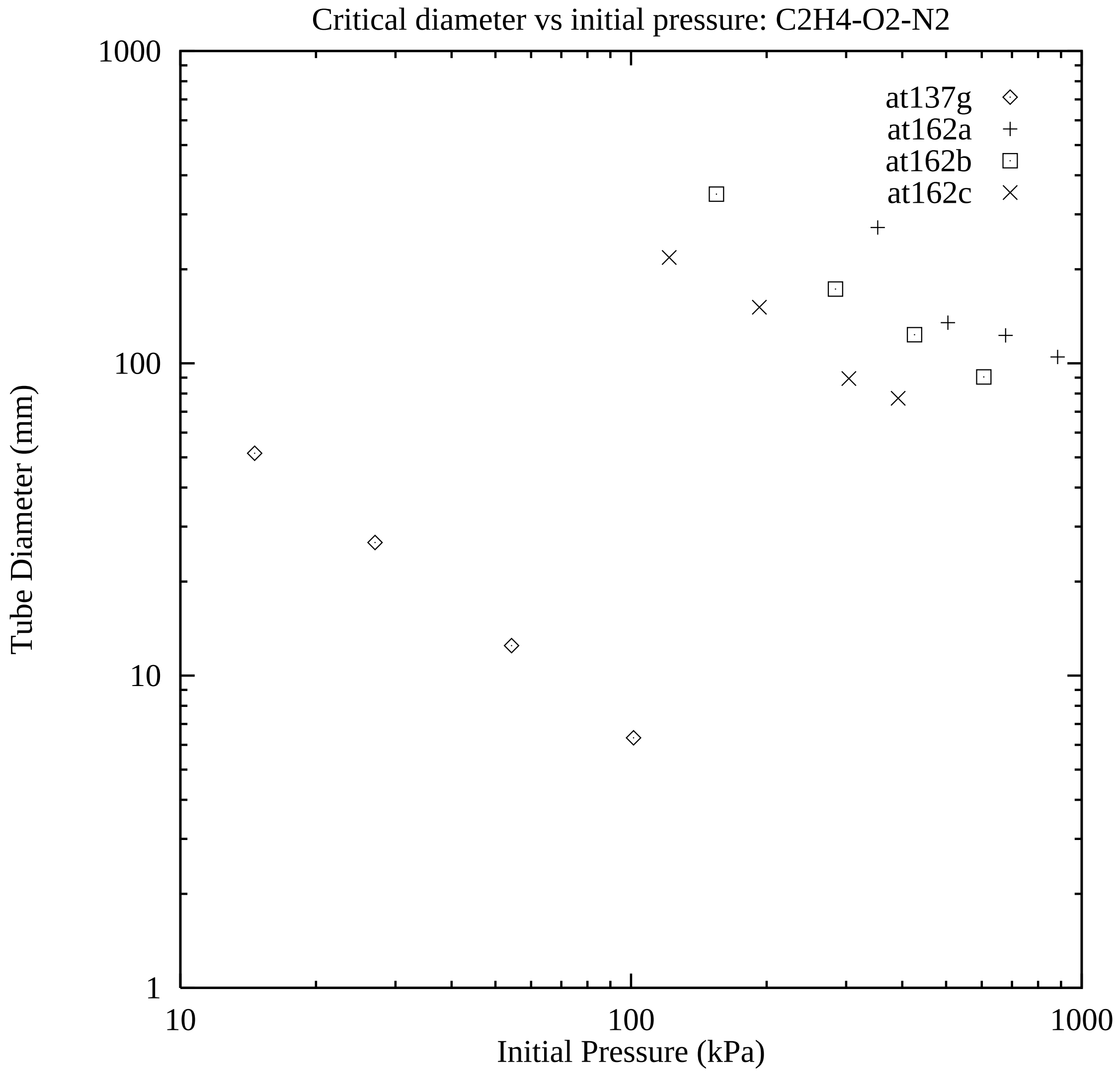

Figure 74: Critical diameter vs initial pressure; C2H4-O2-N2

at137g - Table 304 [80, Matsui (1979)]

at162a - Table 298 [11, Bauer (1984)] 71.4% N2

at162b - Table 299 [11, Bauer (1984)] 67.2% N2

at162c - Table 300 [11, Bauer (1984)] 60.1% N2

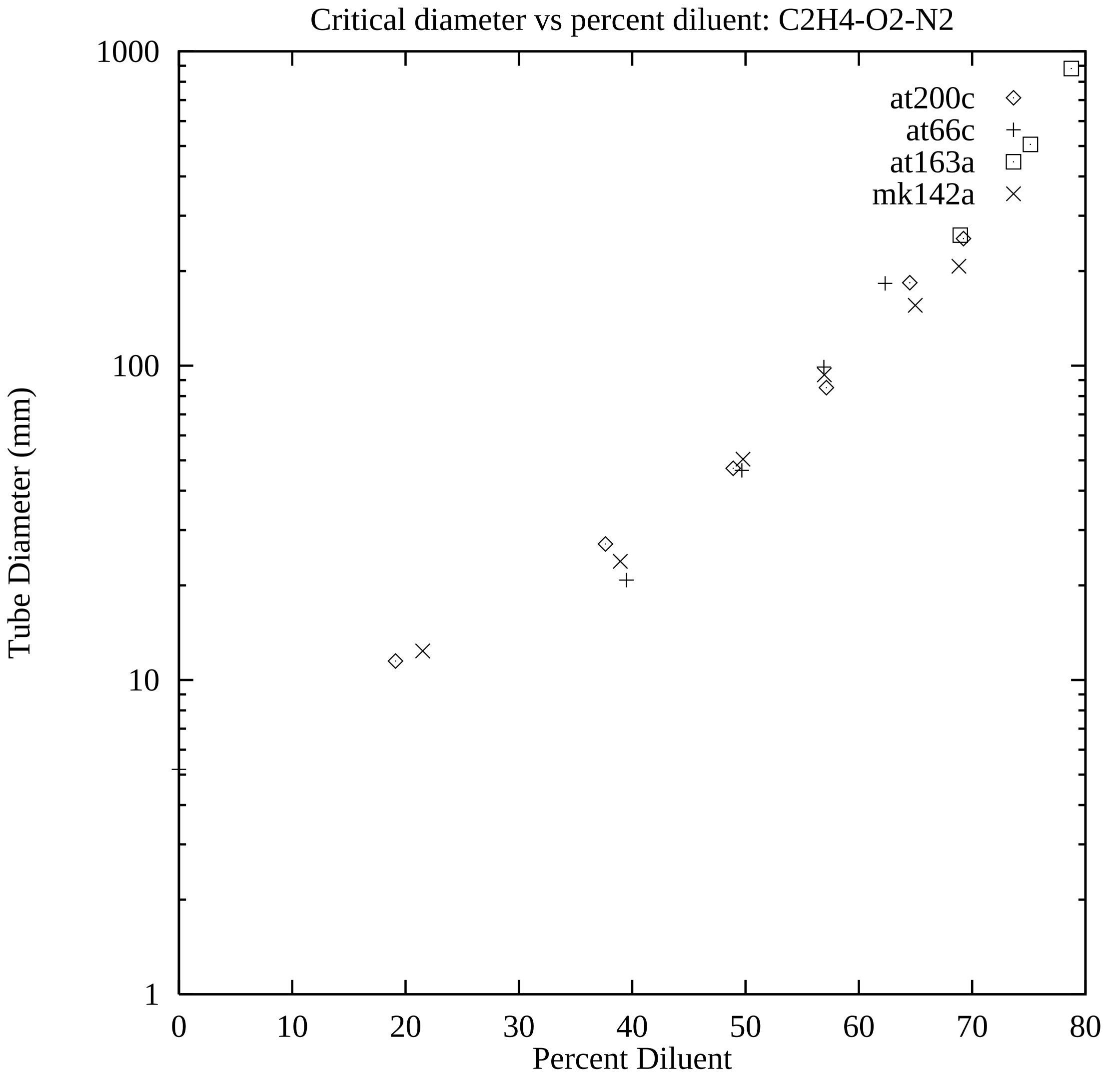

Figure 75: Critical diameter vs percent diluent; C2H4-O2-N2

at200c - Table 315 [83, Moen (1981)] ER=1

at66c - Table 308 [80, Matsui (1979)] ER=1.5

at163a - Table 301 [11, Bauer (1984)] ER=1.05

mk142a - Table 302 [56, Knystautas (1982)] ER=1

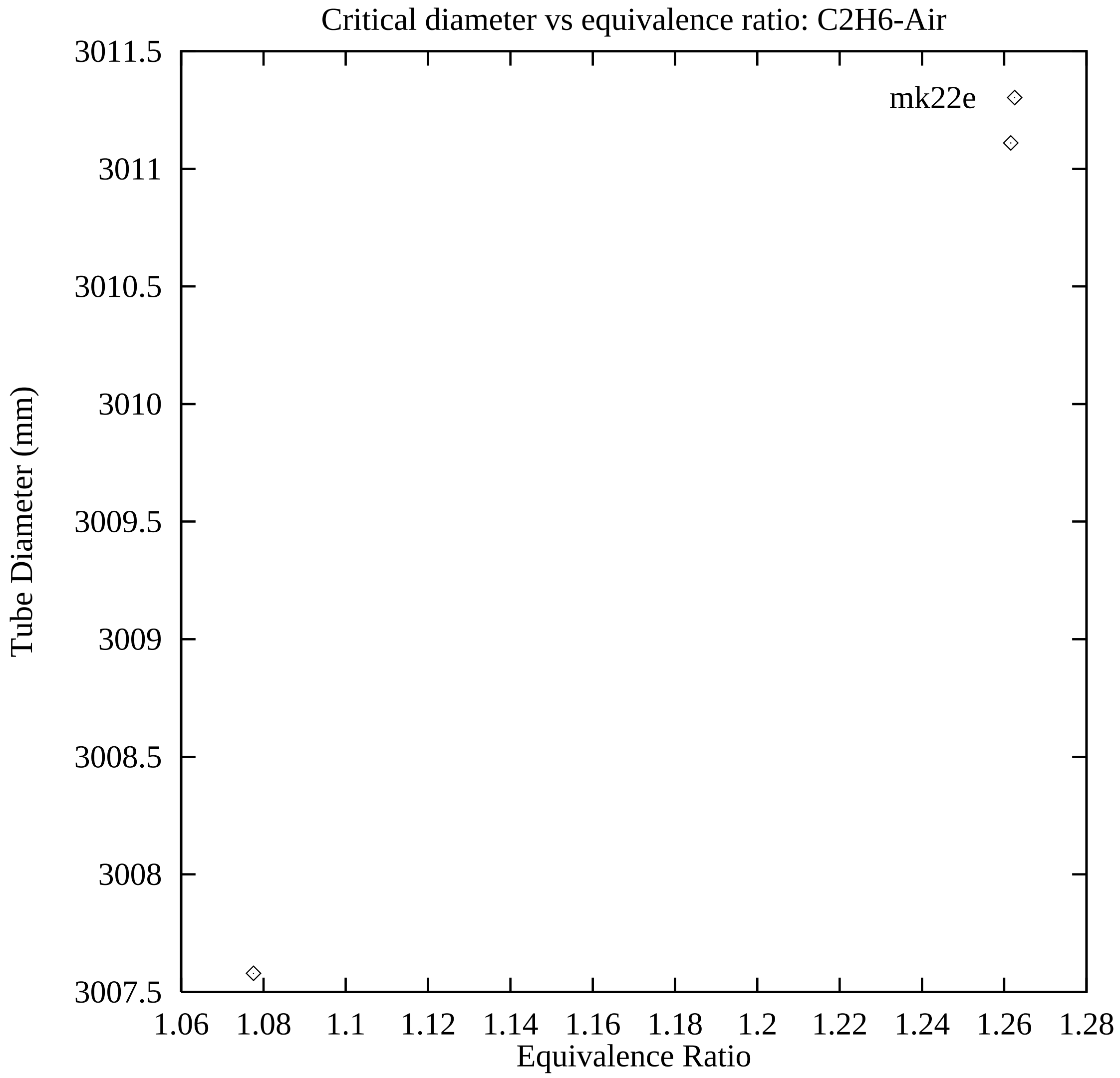

Figure 76: Critical diameter vs equivalence ratio; C2H6-Air

mk22e - Table 324 [84, Moen (1984)]

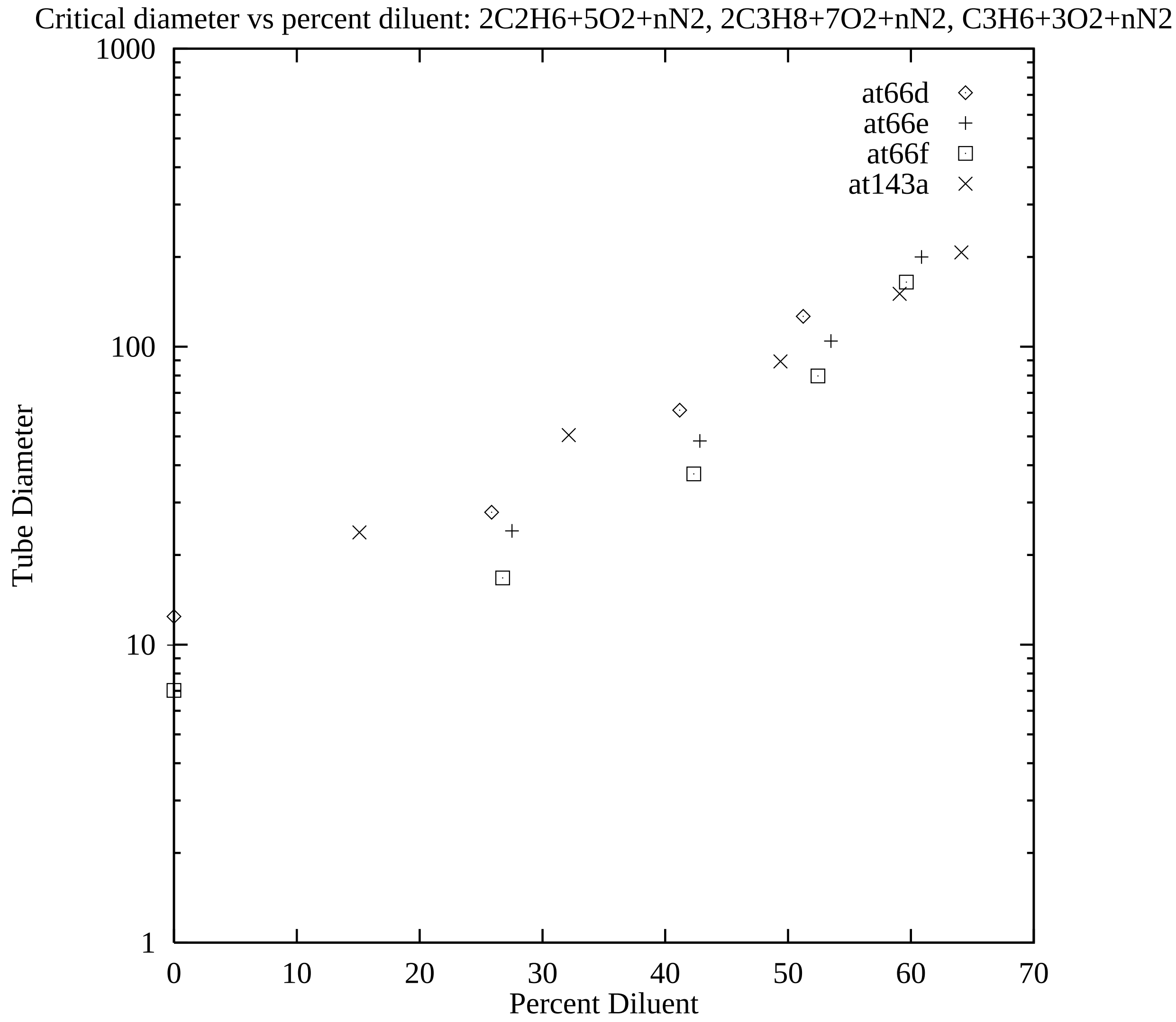

Figure 77: Critical diameter vs percent diluent; 2C2H6+5O2+nN2, 2C3H8+7O2+nN2, C3H6+3O2+nN2

at66d - Table 321 [80, Matsui (1979)] Fuel=C2H6, Oxidizer=O2

at66e - Table 322 [80, Matsui (1979)] Fuel=C3H8, Oxidizer=O2

at66f - Table 323 [80, Matsui (1979)] Fuel=C3H6, Oxidizer=O2

at143a - Table 317 [56, Knystautas (1982)] Fuel=C2H6, Oxidizer=O2

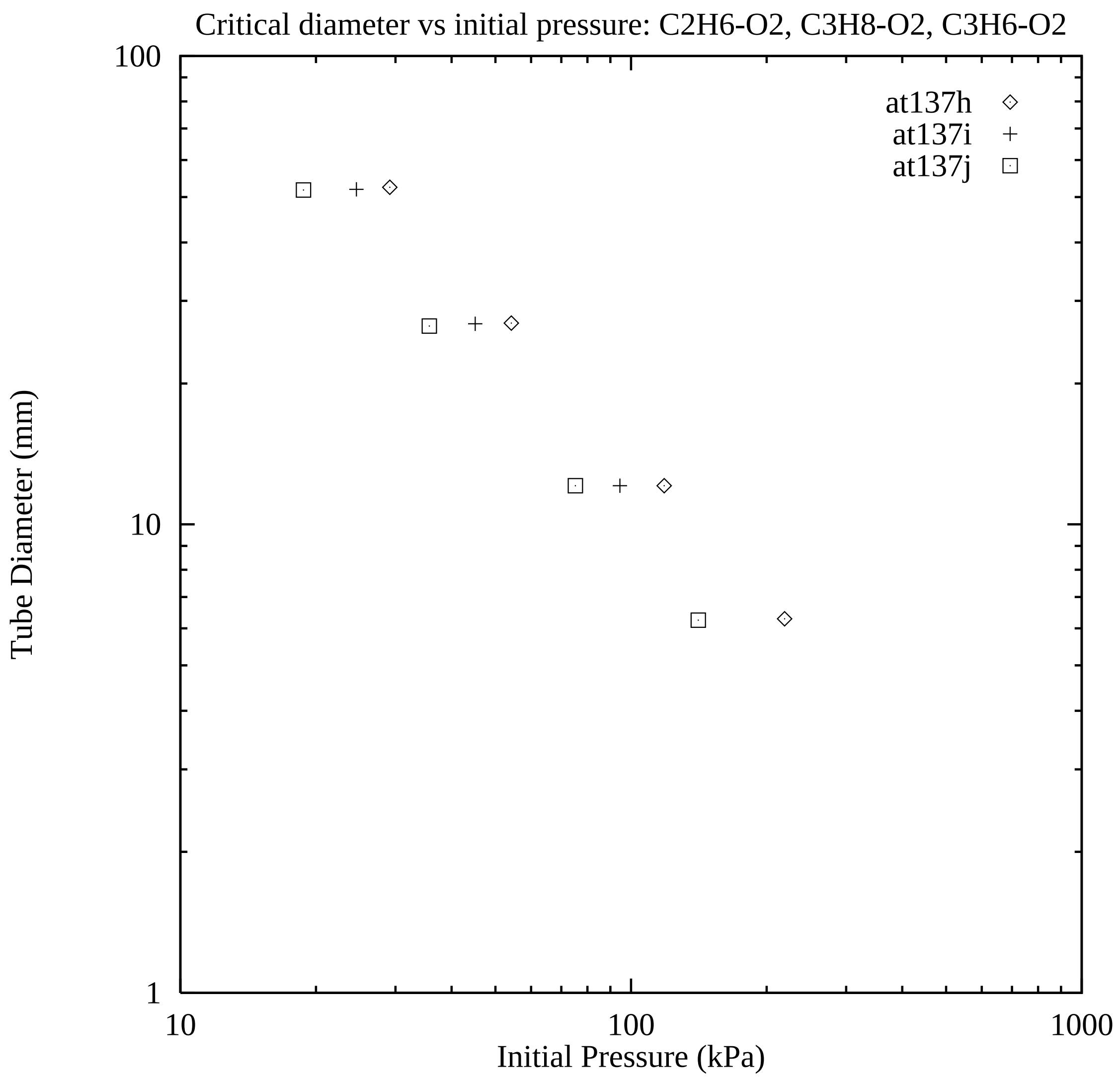

Figure 78: Critical diameter vs initial pressure; C2H6-O2, C3H8-O2, C3H6-O2

at137h - Table 318 [80, Matsui (1979)] Fuel=C2H6
at137i - Table 319 [80, Matsui (1979)] Fuel=C3H8
at137j - Table 320 [80, Matsui (1979)] Fuel=C3H6

2.3 Critical Energy

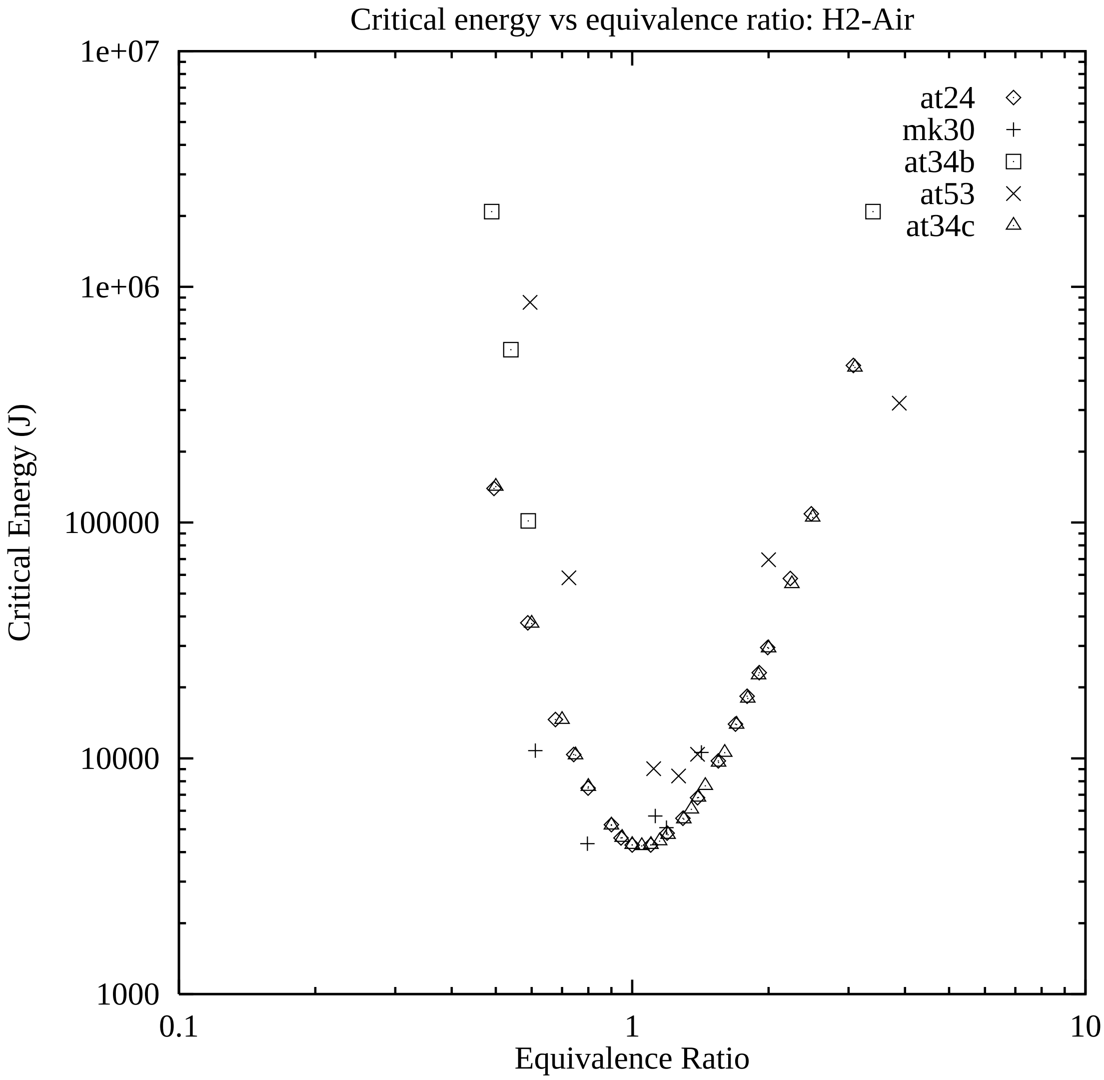

Figure 79: Critical energy vs equivalence ratio; H2-Air

at24 - Table 328 [48, Guirao (1982)] T=293 K, P=101.3 kPa
mk30 - Table 325 [7, Atkinson (1980)] T=293 K, P=101.3 kPa
at34b - Table 326 [14, Benedick (1986)] T=293 K, P=83.99 kPa
at53 - Table 348 [76, Makeev (1983)] T=293 K, P=101.3 kPa
at34c - Table 327 [14, Benedick (1986)] T=293 K, P=101.3 kPa

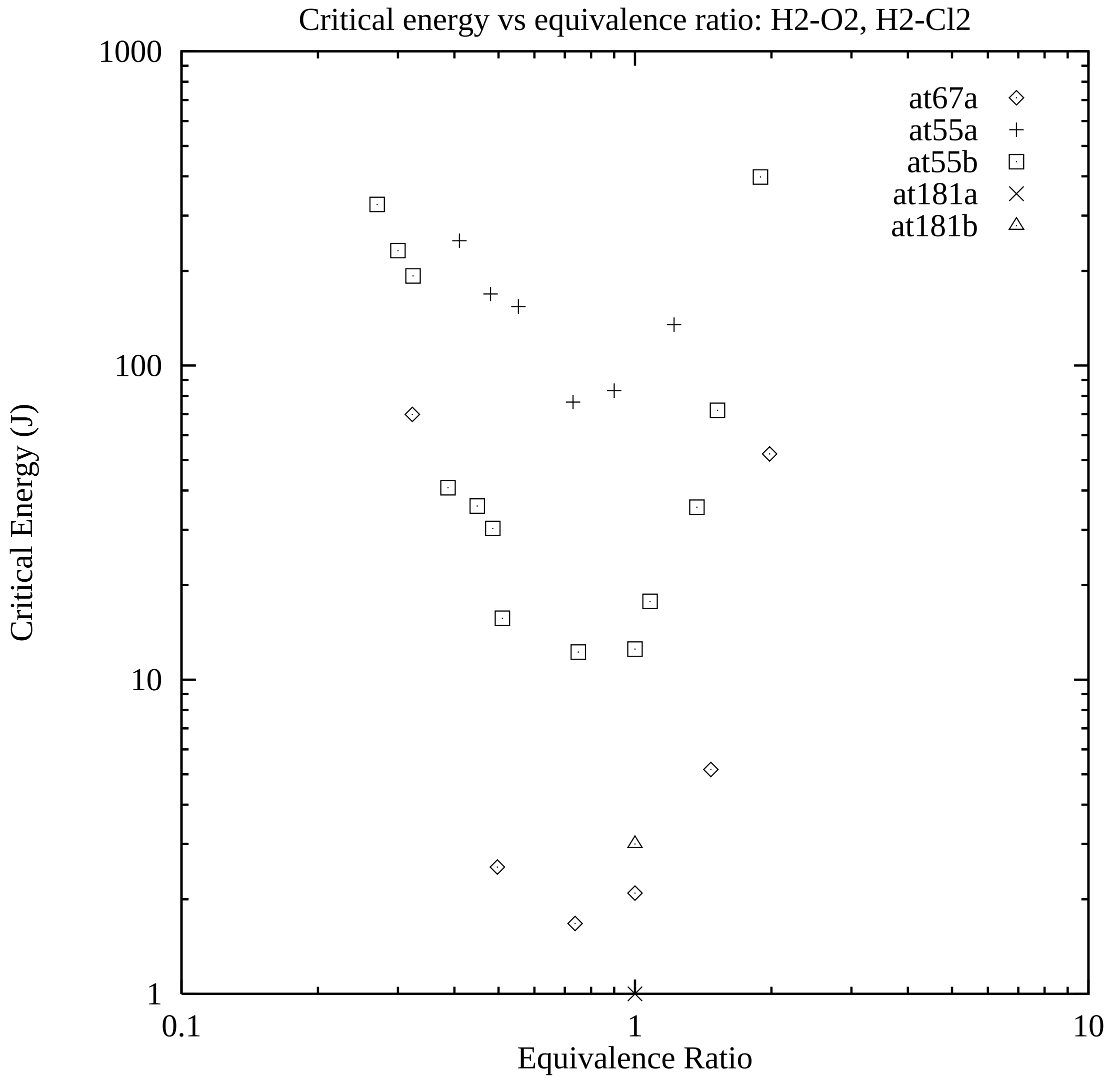

Figure 80: Critical energy vs equivalence ratio; H2-O2, H2-Cl2

at67a - Table 349 [80, Matsui (1979)] T=293 K, P=101.3 kPa, Subcategory=spherical, Fuel=H2, Oxidizer=O2

at55a - Table 332 [73, Litchfield (1962)] T=293 K, P=101.3 kPa, Subcategory=spherical, spark, Fuel=H2, Oxidizer=O2

at55b - Table 333 [73, Litchfield (1962)] T=293 K, P=101.3 kPa, Subcategory=spherical, exploding wire, Fuel=H2, Oxidizer=O2

at181a - Table 329 [55, Knystautas (1988)] T=293 K, P=8 kPa, Subcategory=spherical, spark, Fuel=H2, Oxidizer=Cl2

at181b - Table 330 [55, Knystautas (1988)] T=293 K, P=16 kPa, Subcategory=spherical, spark, Fuel=H2, Oxidizer=Cl2

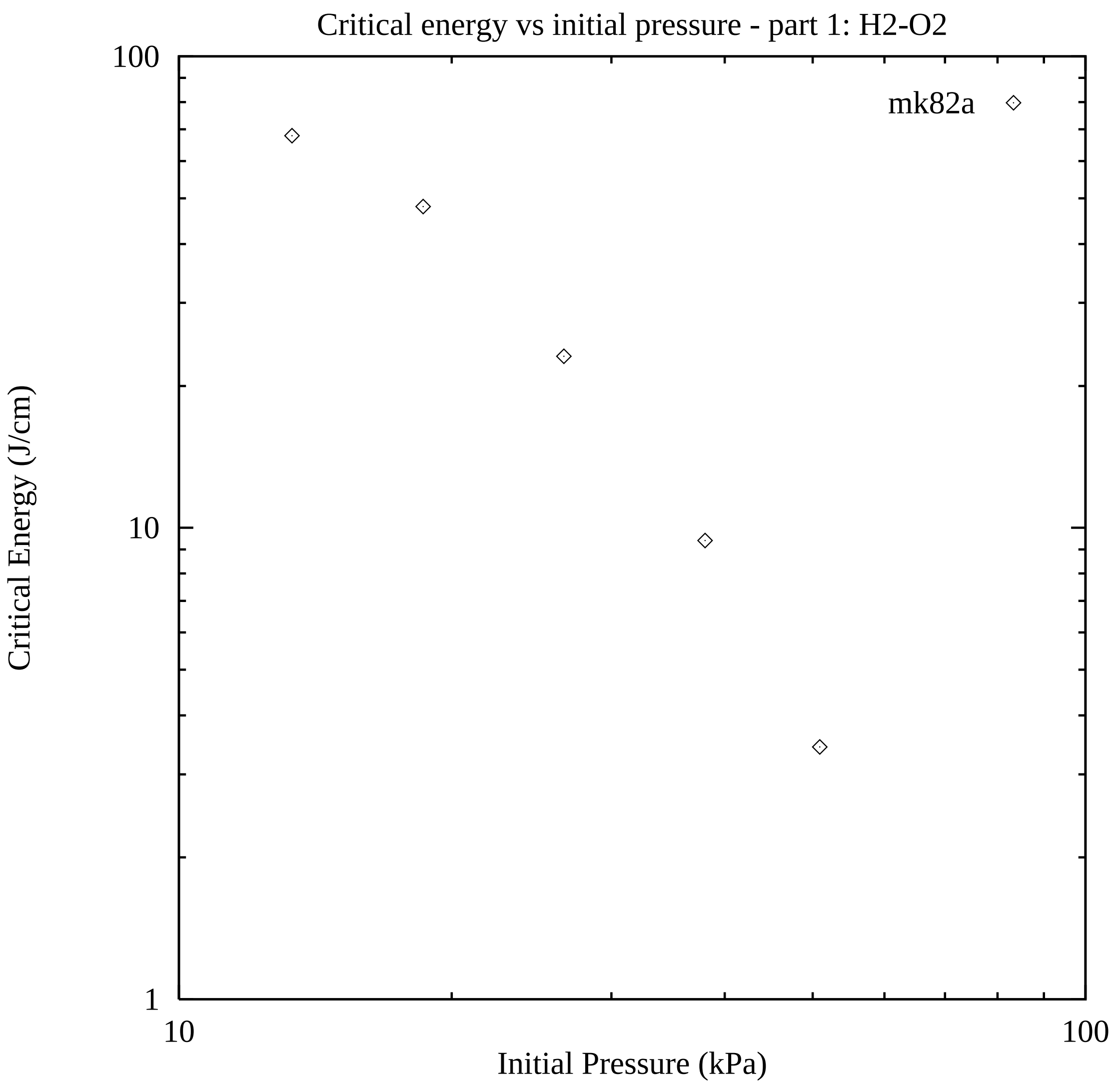

Figure 81: Critical energy vs initial pressure - part 1; H2-O2

mk82a - Table 331 [68, Lee (1977)] T=293 K, ER=1

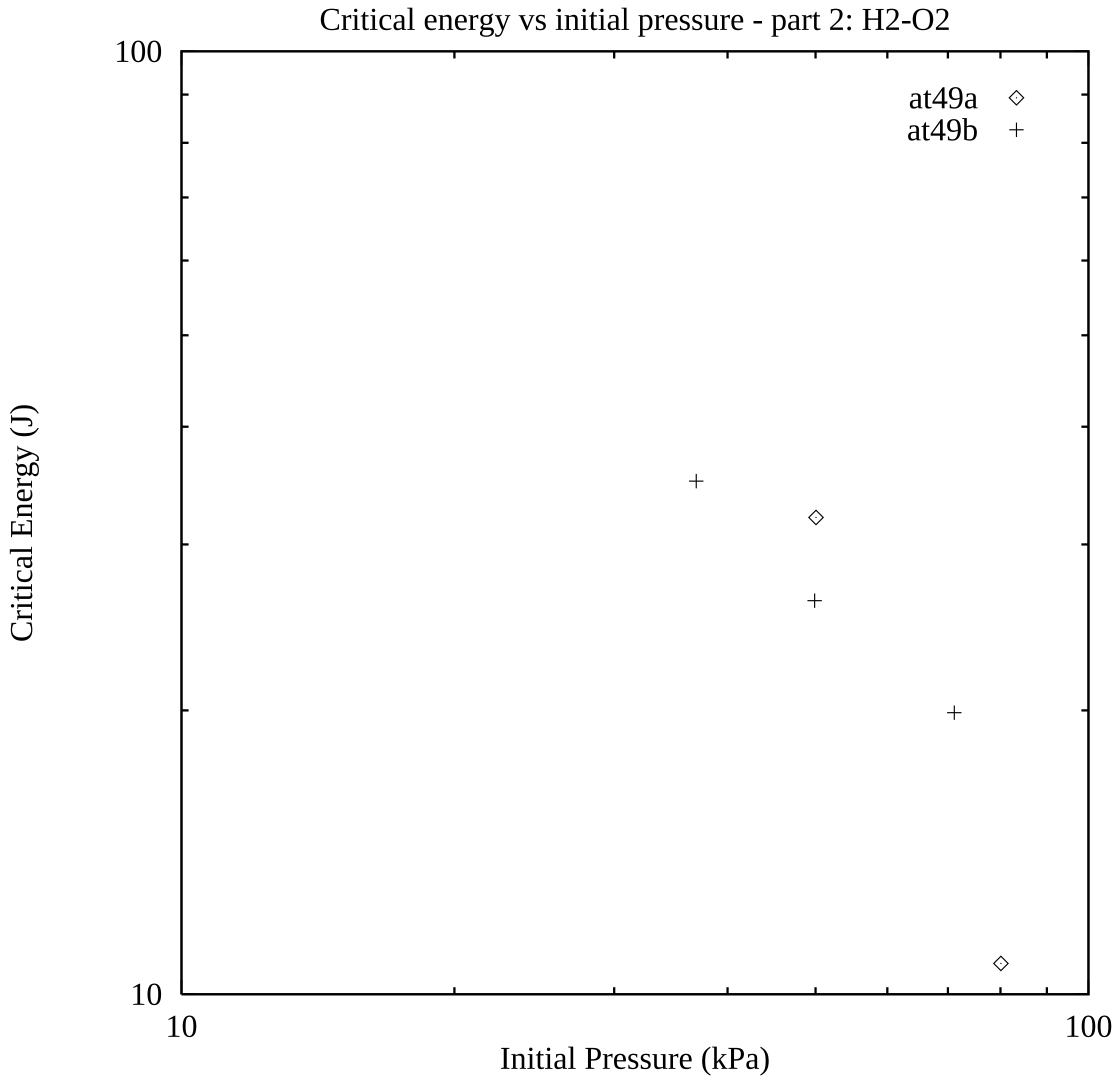

Figure 82: Critical energy vs initial pressure - part 2; H2-O2

at49a - Table 350 [130, Zitoun (1995)] T=293 K, ER=1

at49b - Table 351 [130, Zitoun (1995)] T=123 K, ER=1

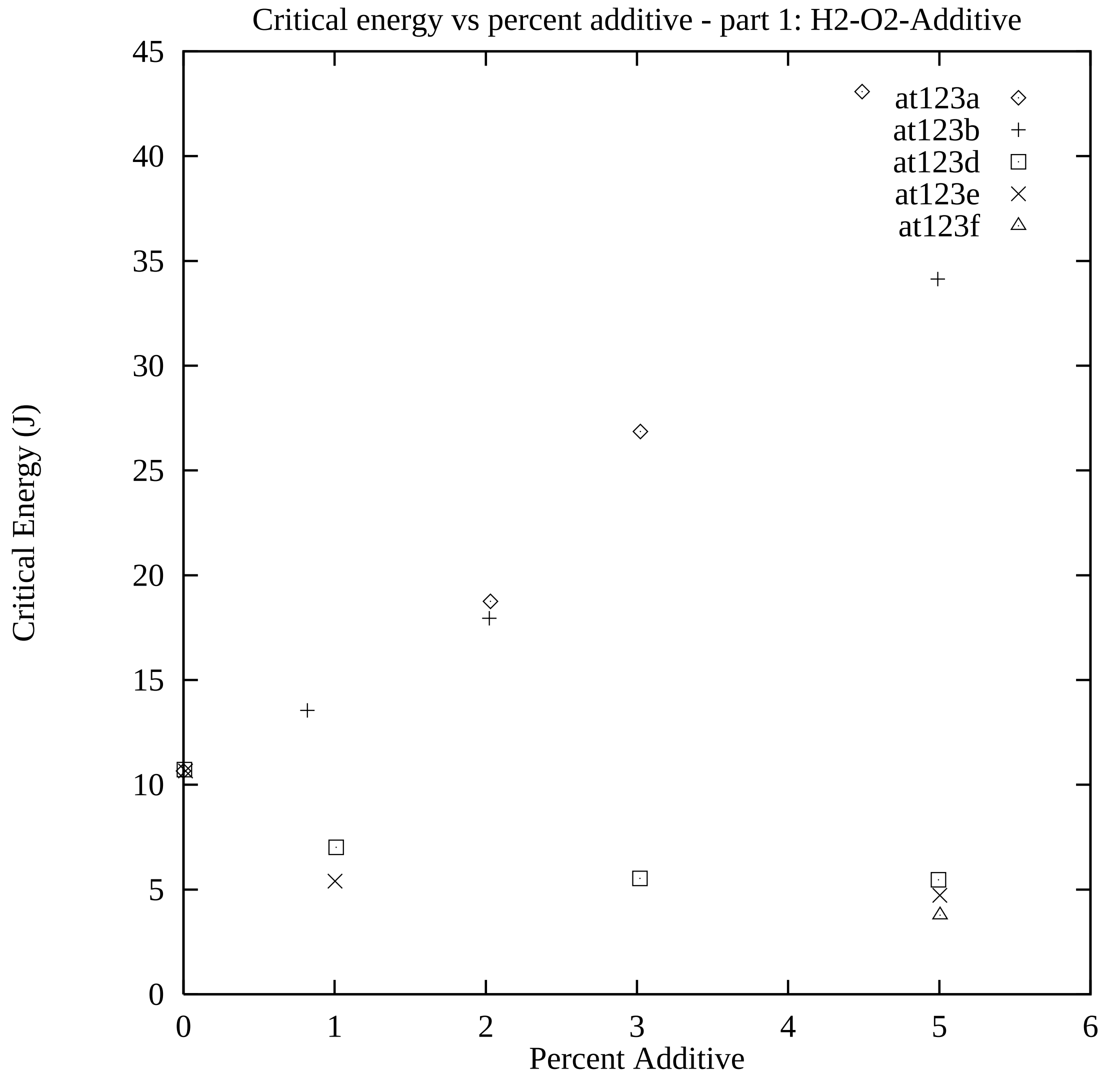

Figure 83: Critical energy vs percent additive - part 1; H2-O2-Additive

at123a - Table 334 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 0-5% CH4
at123b - Table 335 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, .7-5% CH3Cl
at123d - Table 336 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 1-5% CCl4
at123e - Table 337 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 1-5% CHCl3
at123f - Table 338 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 5% Cl2

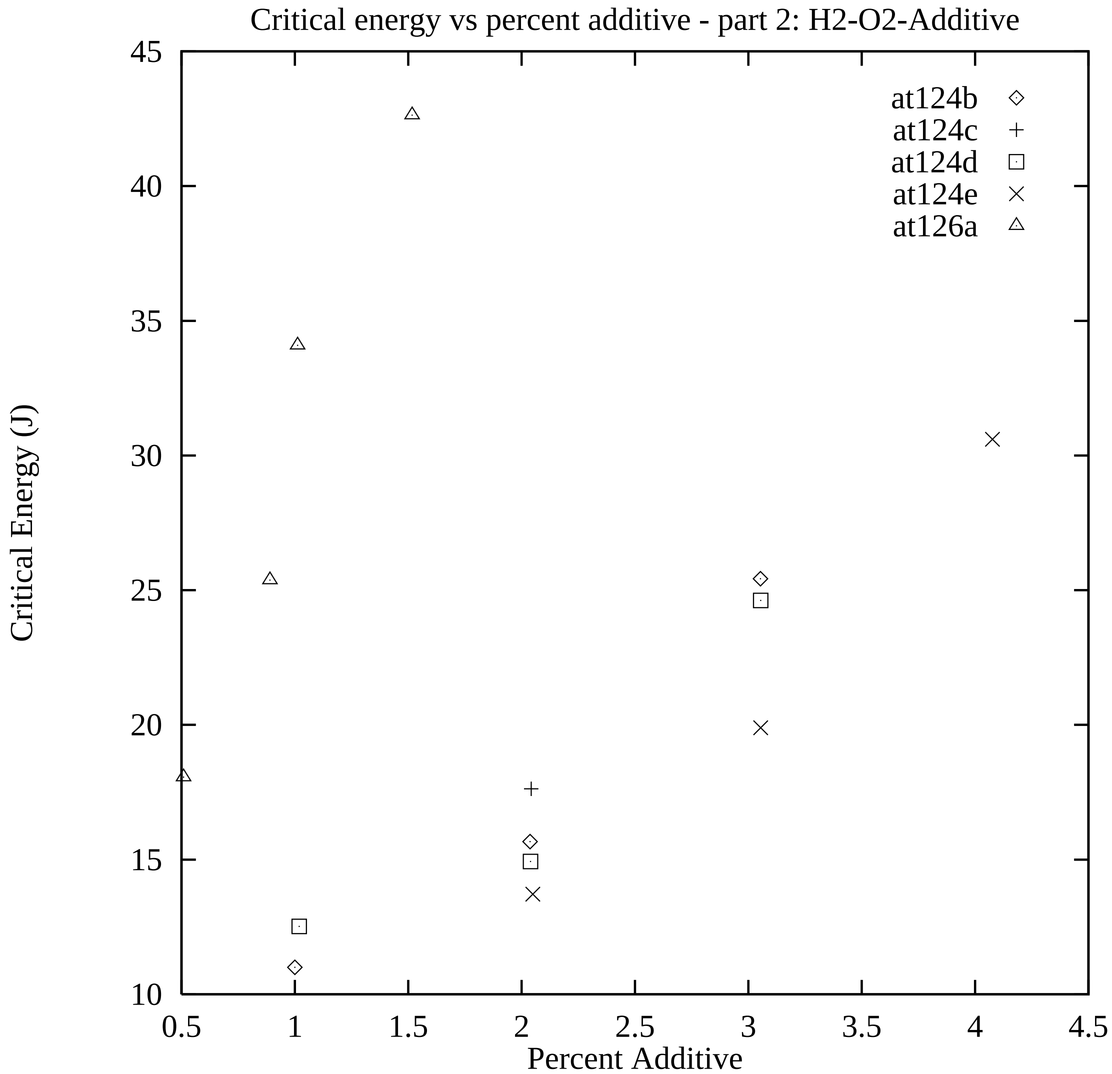

Figure 84: Critical energy vs percent additive - part 2; H2-O2-Additive

at124b - Table 339 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 1-5% C2H6
at124c - Table 340 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 2% i-C4H10
at124d - Table 341 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 1-3% n-C4H10
at124e - Table 342 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 2-4% C3H8
at126a - Table 343 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, .5-1.5% Isobutene

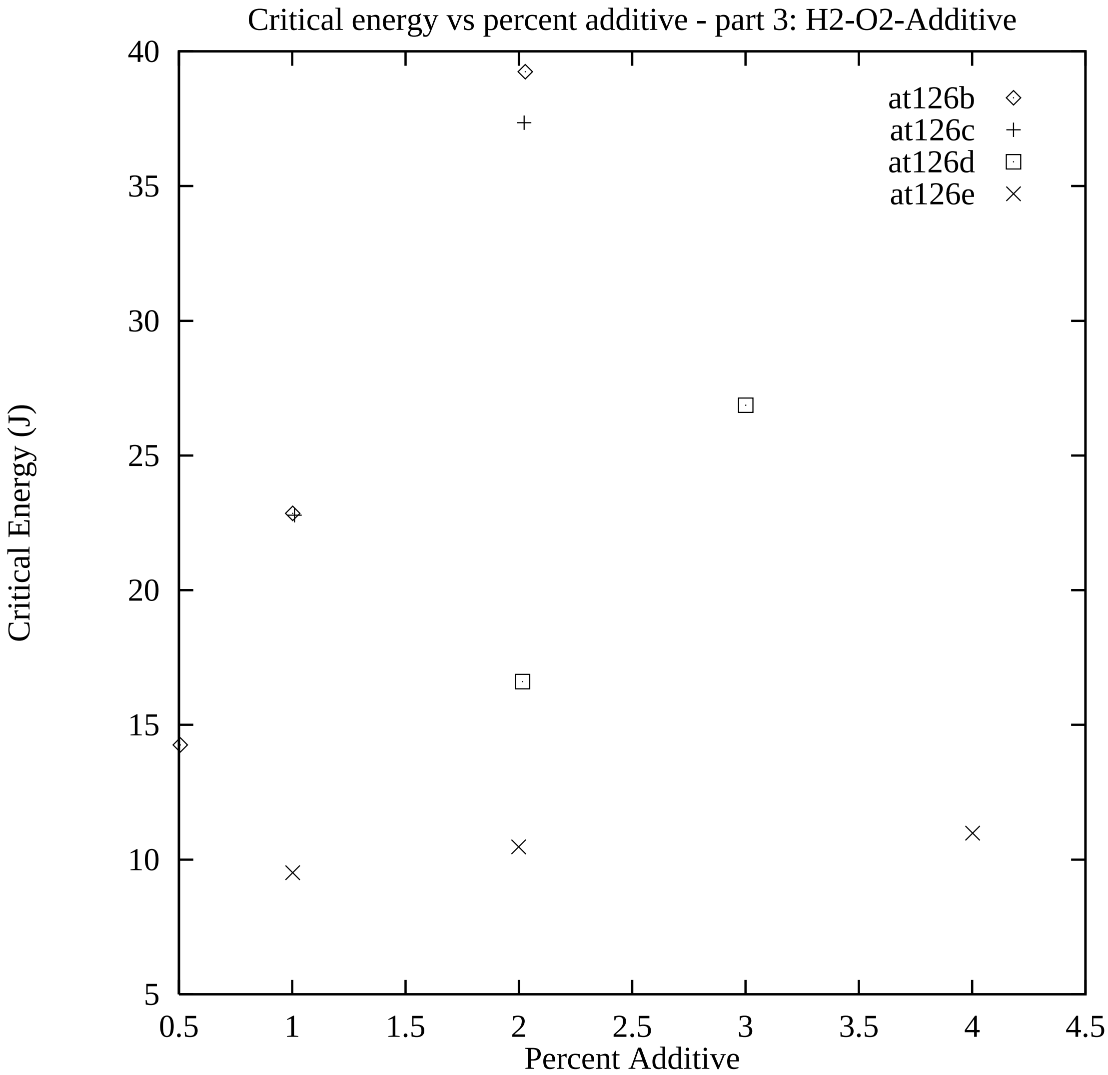

Figure 85: Critical energy vs percent additive - part 3; H2-O2-Additive

at126b - Table 344 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, .5-2% Trans-butene-2
at126c - Table 345 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 1-2% Propylene
at126d - Table 346 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 2-3% Butene-1
at126e - Table 347 [75, Macek (1963)] T=297 K, P=101.3 kPa, ER=0.82, 1-4% Ethylene

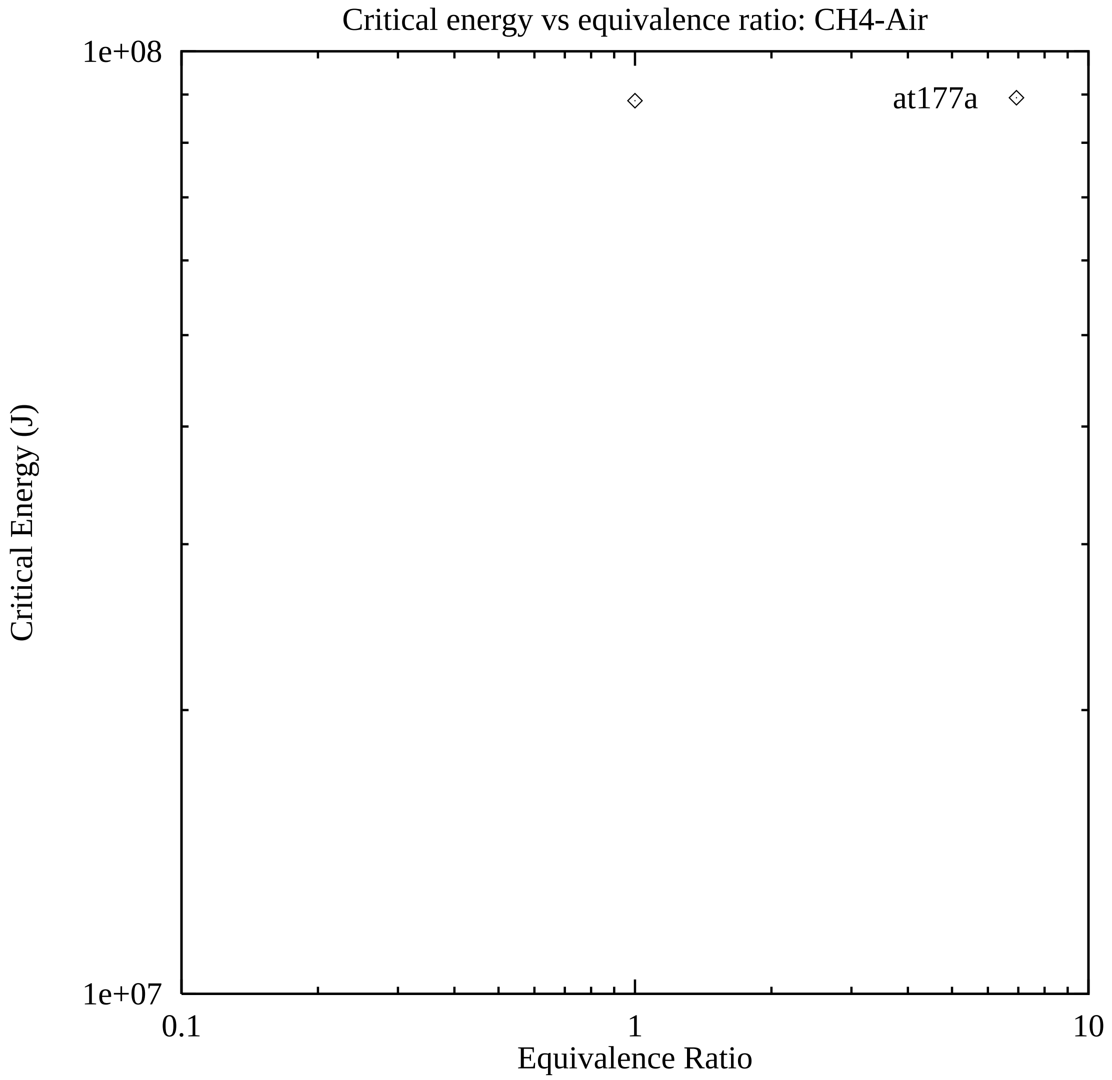

Figure 86: Critical energy vs equivalence ratio; CH4-Air

at177a - Table 354 [13, Beeson (1991)] T=293 K, P=101.3 kPa

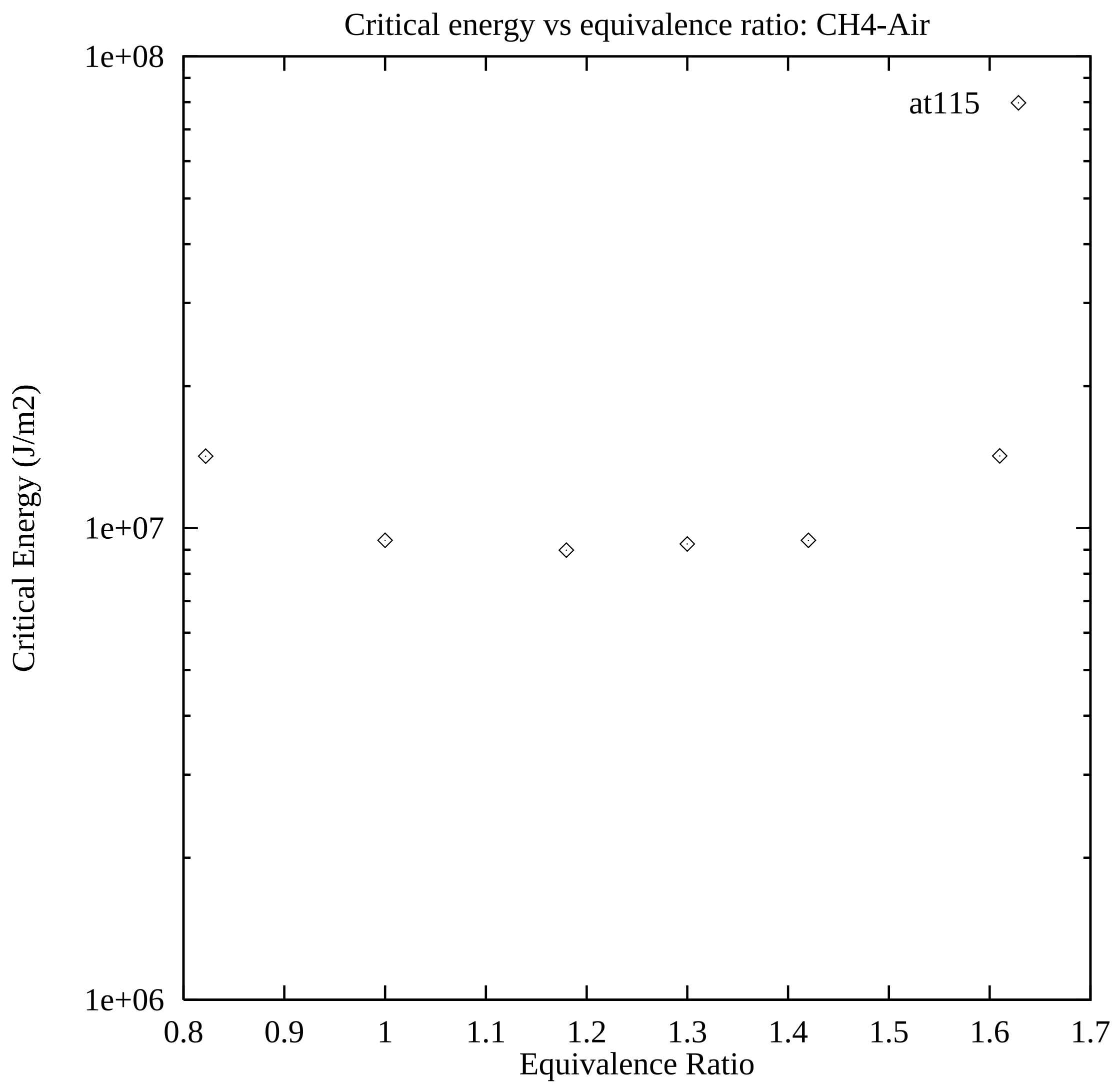

Figure 87: Critical energy vs equivalence ratio; CH4-Air

at115 - Table 360 [128, Wolanski (1981)] T=293 K, P=101.3 kPa

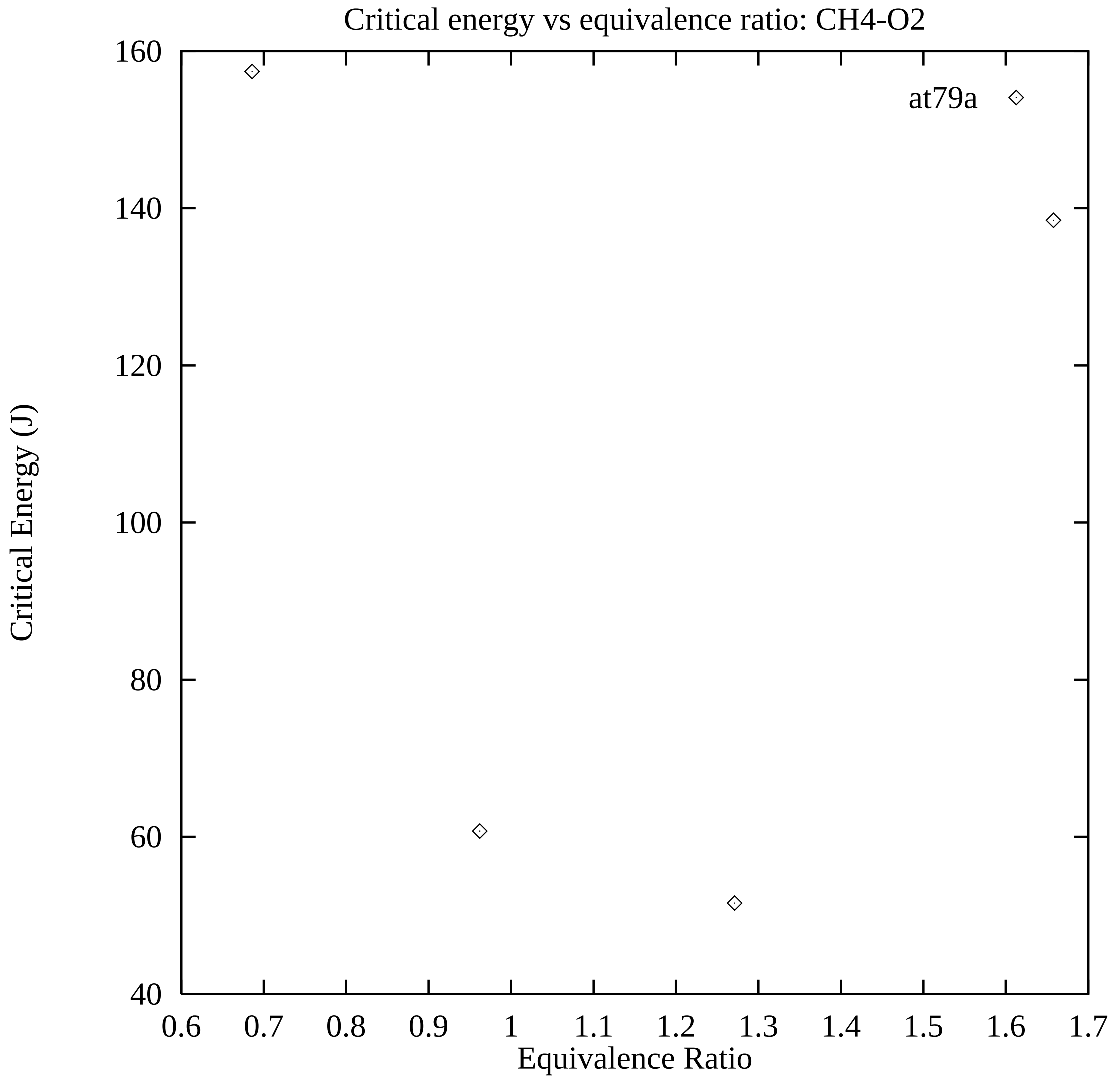

Figure 88: Critical energy vs equivalence ratio; CH4-O2

at79a - Table 358 [80, Matsui (1979)] P=101.3 kPa

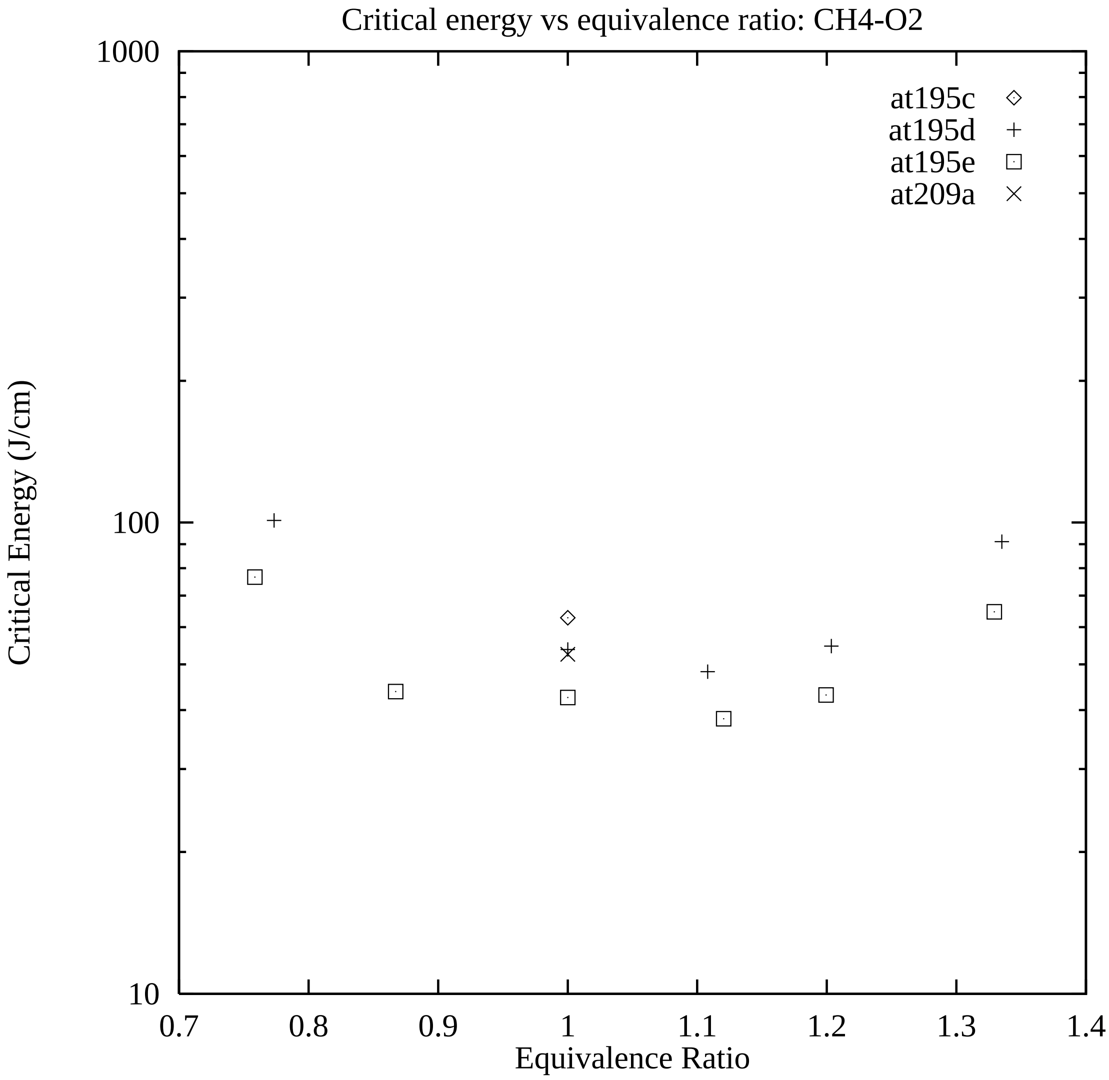

Figure 89: Critical energy vs equivalence ratio; CH4-O2

at195c - Table 359 [92, Nicholls (1979)] P=101.3 kPa

at195d - Table 352 [4, Aminallah (1993)] P=100 kPa

at195e - Table 353 [4, Aminallah (1993)] P=120 kPa

at209a - Table 356 [33, Desbordes (1973)] P=100 kPa

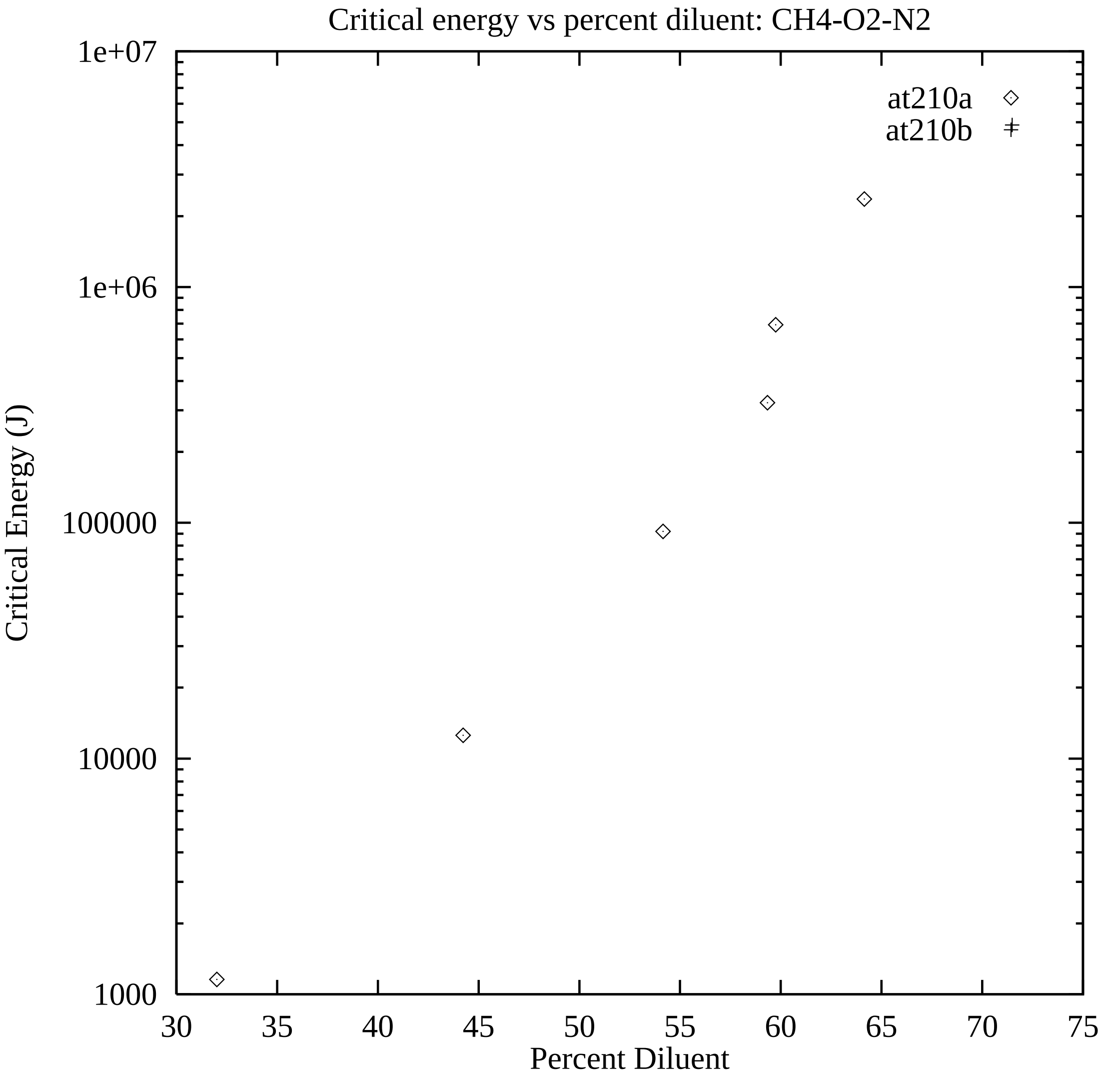

Figure 90: Critical energy vs percent diluent; CH4-O2-N2

at210a - Table 355 [26, Bull (1976)]
at210b - Table 357 [60, Kogarko (1965)]

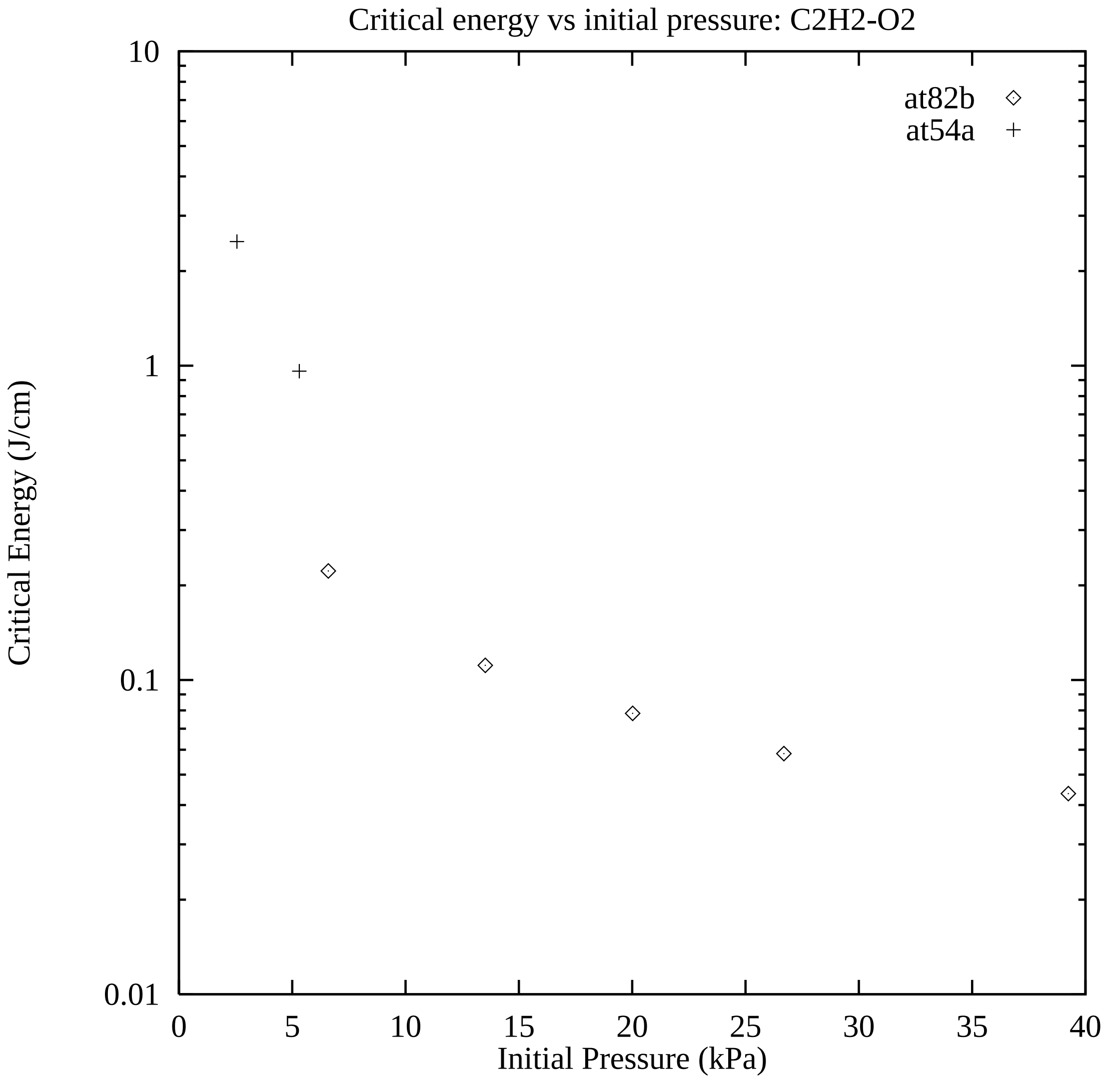

Figure 91: Critical energy vs initial pressure; C2H2-O2

at82b - Table 364 [68, Lee (1977)]

at54a - Table 366 [121, Vasil'ev (1982)]

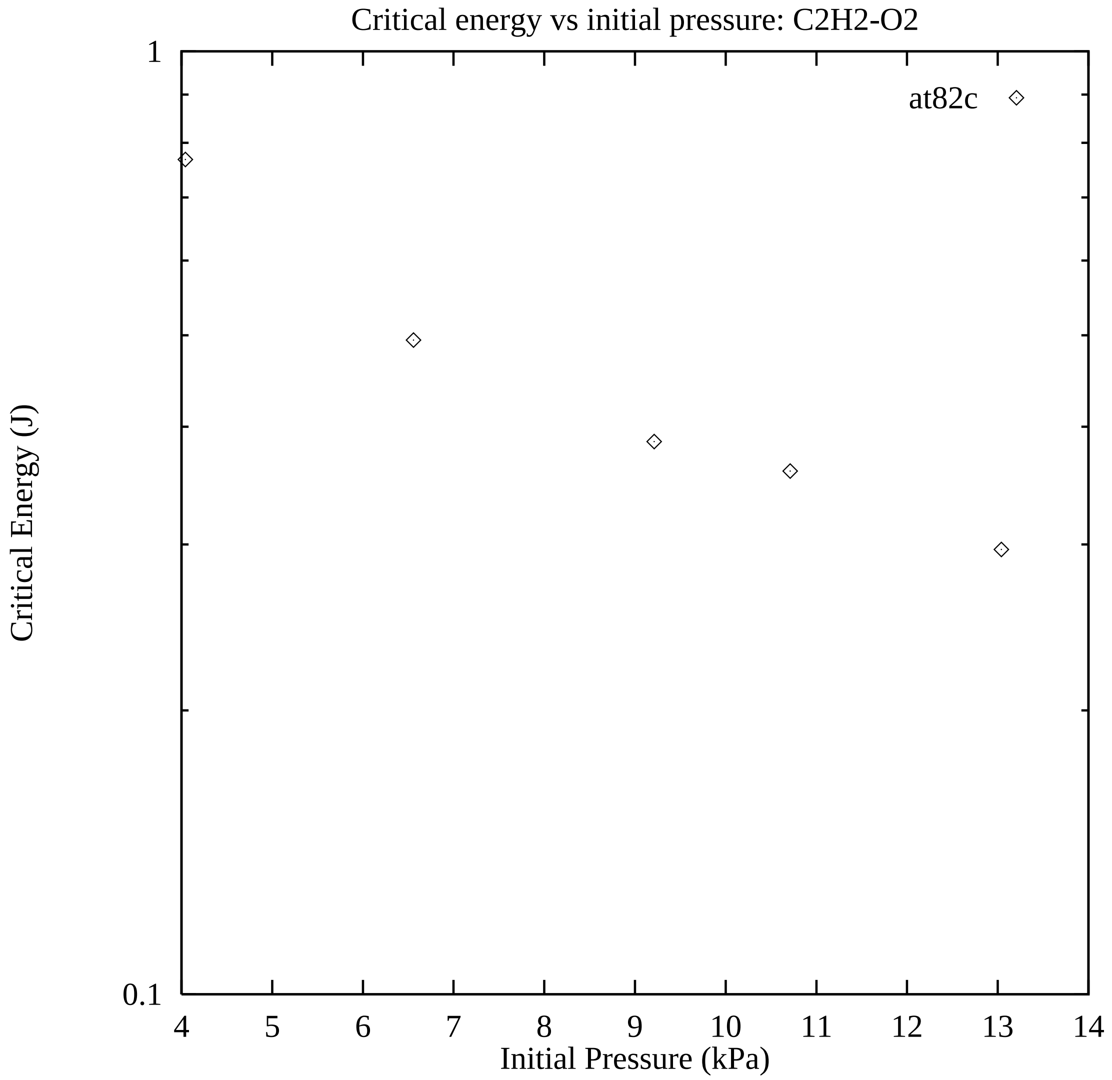

Figure 92: Critical energy vs initial pressure; C2H2-O2

at82c - Table 363 [68, Lee (1977)]

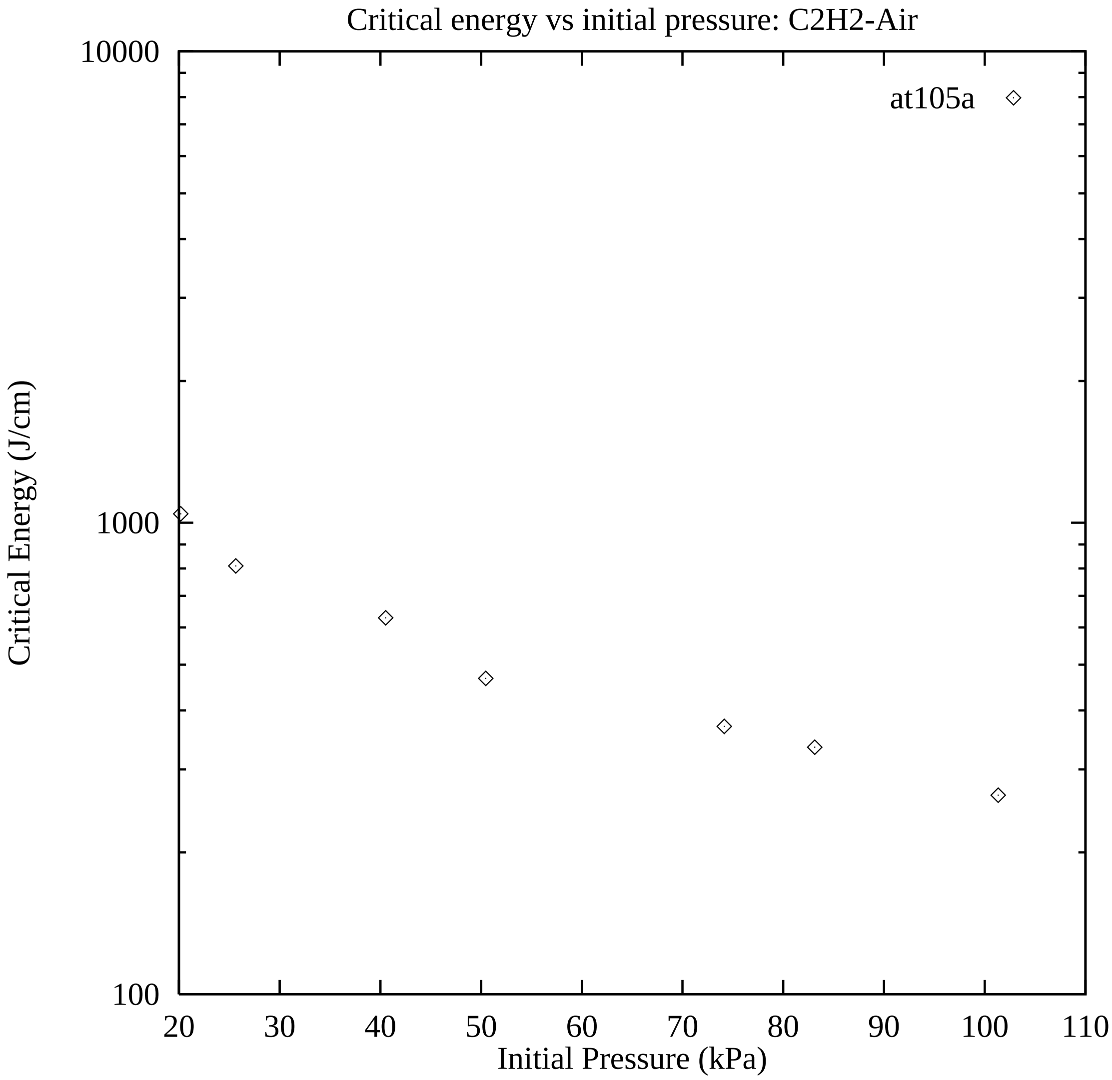

Figure 93: Critical energy vs initial pressure; C2H2-Air

at105a - Table 367 [123, Vasil'ev (1980)]

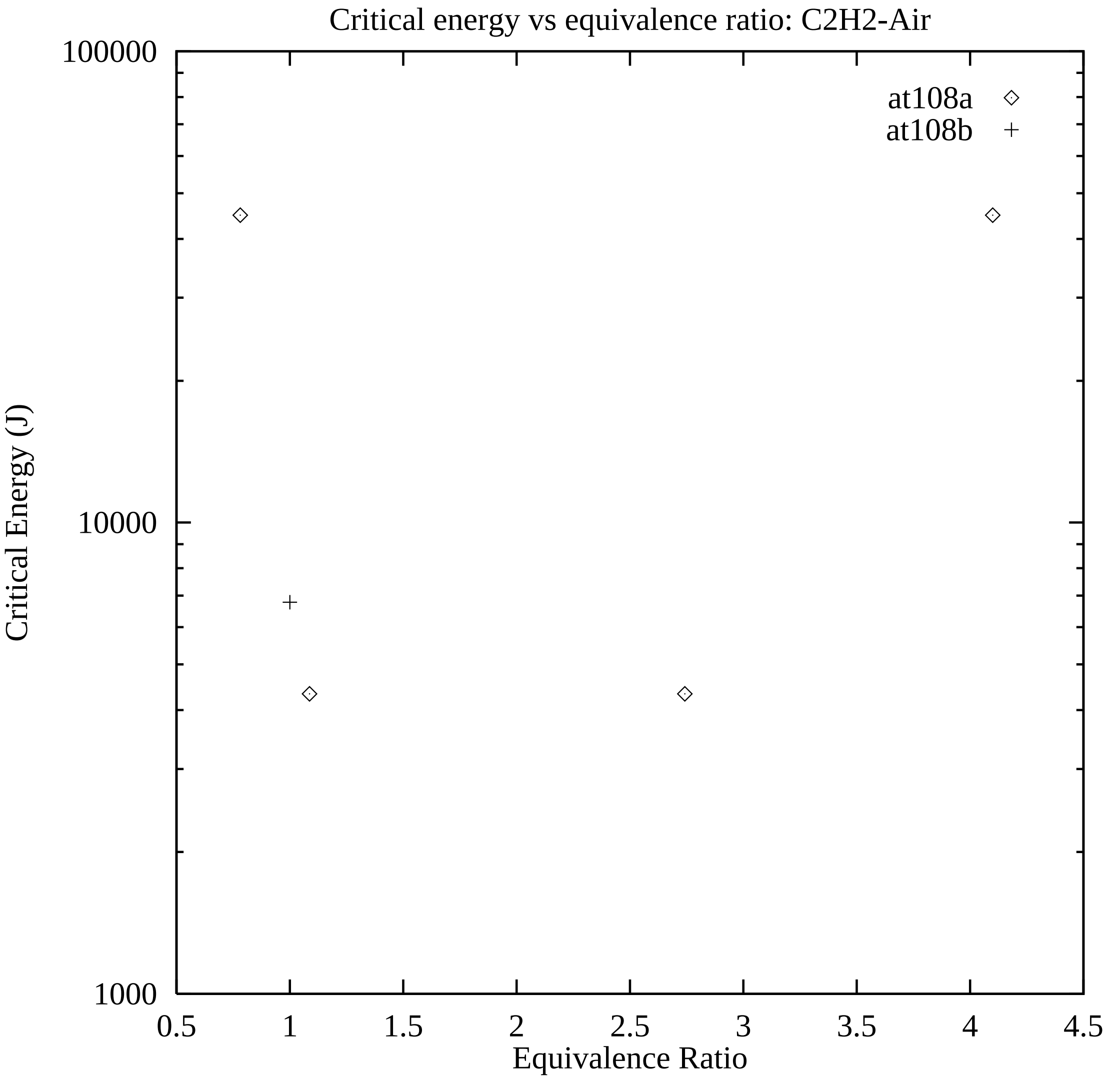

Figure 94: Critical energy vs equivalence ratio; C2H2-Air

at108a - Table 361 [45, Freiwald (1962)]

at108b - Table 362 [60, Kogarko (1965)]

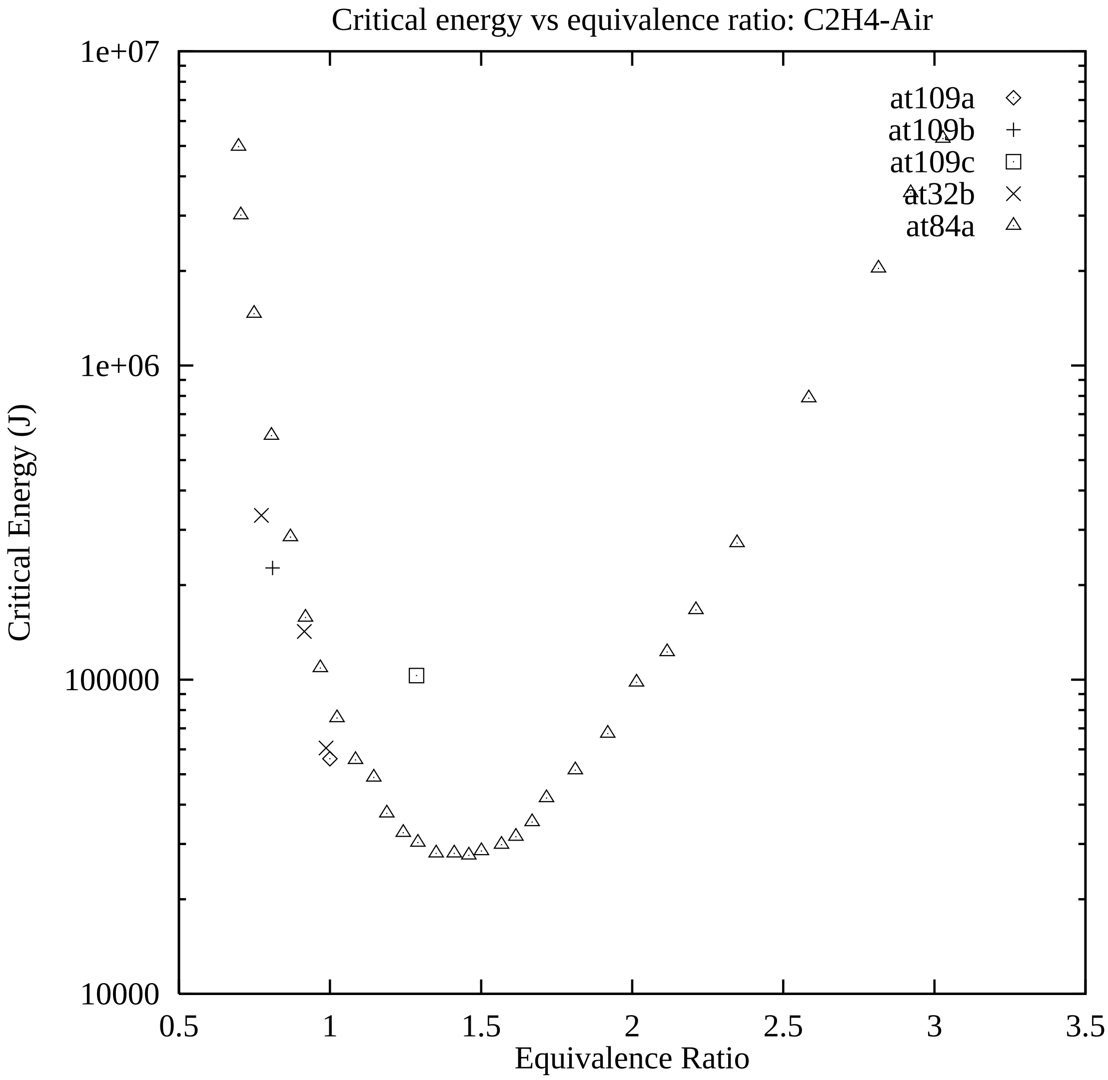

Figure 95: Critical energy vs equivalence ratio; C2H4-Air

at109a - Table 369 [23, Bull (1978)]
at109b - Table 370 [21, Bull (1979)]
at109c - Table 371 [50, Hikita (1975)]
at32b - Table 373 [88, Murray (1981)]
at84a - Table 368 [14, Benedick (1986)]

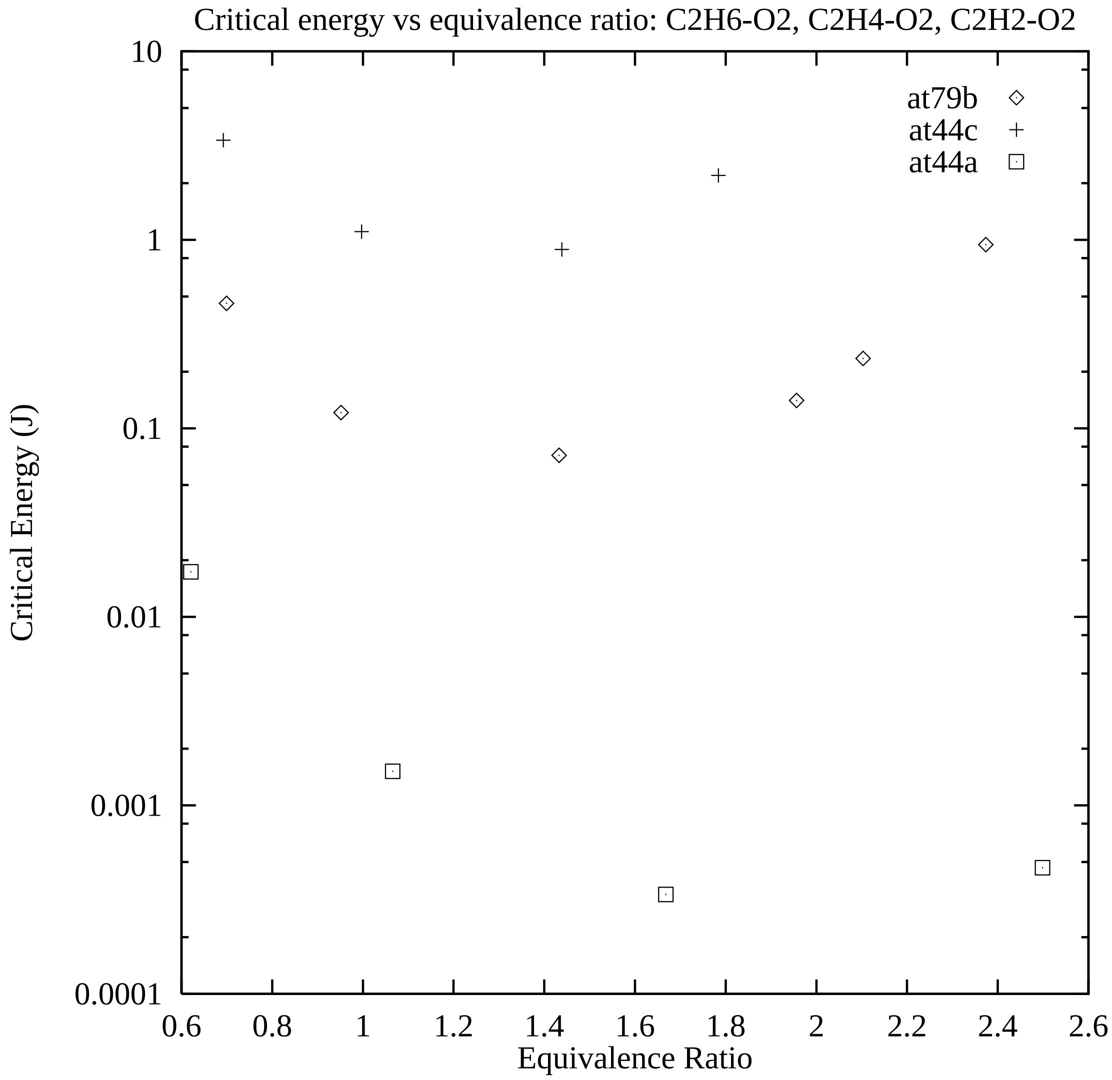

Figure 96: Critical energy vs equivalence ratio; C2H6-O2, C2H4-O2, C2H2-O2

at79b - Table 372 [80, Matsui (1979)] Fuel=C2H4

at44c - Table 378 [80, Matsui (1979)] Fuel=C2H6

at44a - Table 365 [80, Matsui (1979)] Fuel=C2H2

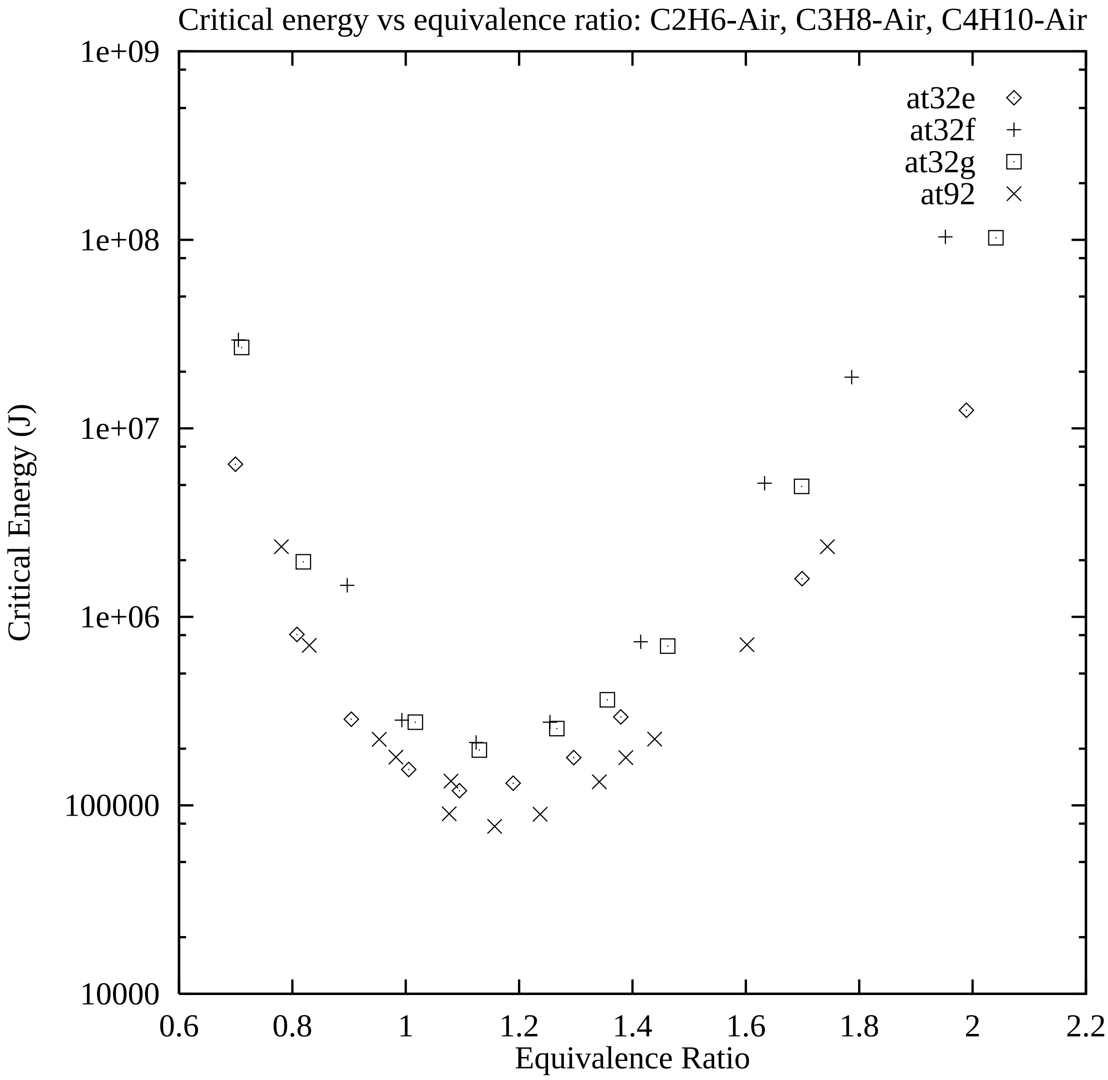

Figure 97: Critical energy vs equivalence ratio; C2H6-Air, C3H8-Air, C4H10-Air

at32e - Table 377 [54, Knystautas (1984)] Fuel=C2H6

at32f - Table 375 [44, Elsworth (1984)] Fuel=C3H8

at32g - Table 376 [44, Elsworth (1984)] Fuel=C4H10

at92 - Table 374 [22, Bull (1982)] Fuel=C2H6

2.4 Minimum Tube Diameter

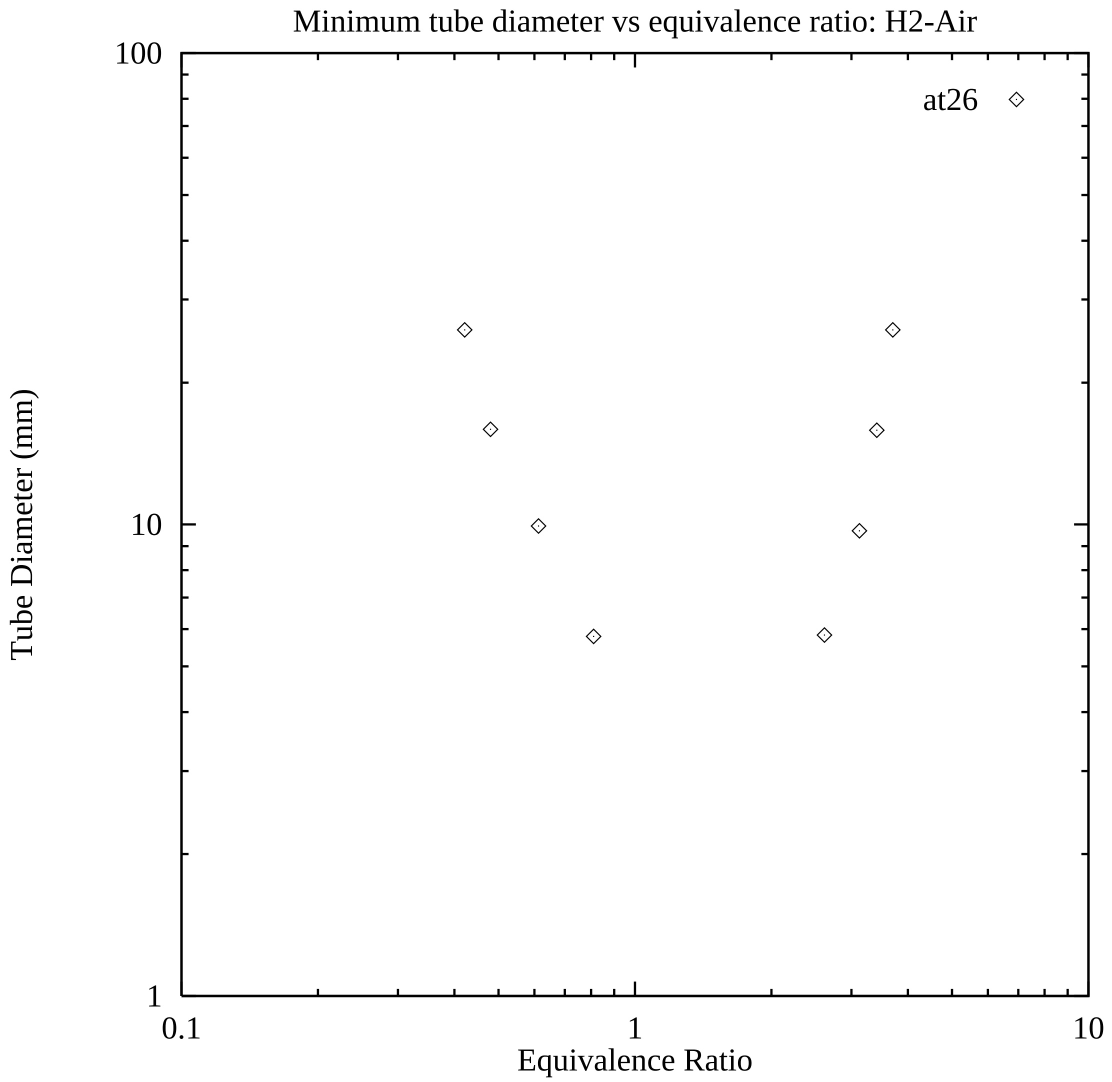

Figure 98: Minimum tube diameter vs equivalence ratio; H2-Air

at26 - Table 379 [2, Agafonov (1994)] T=298 K, P=100 kPa

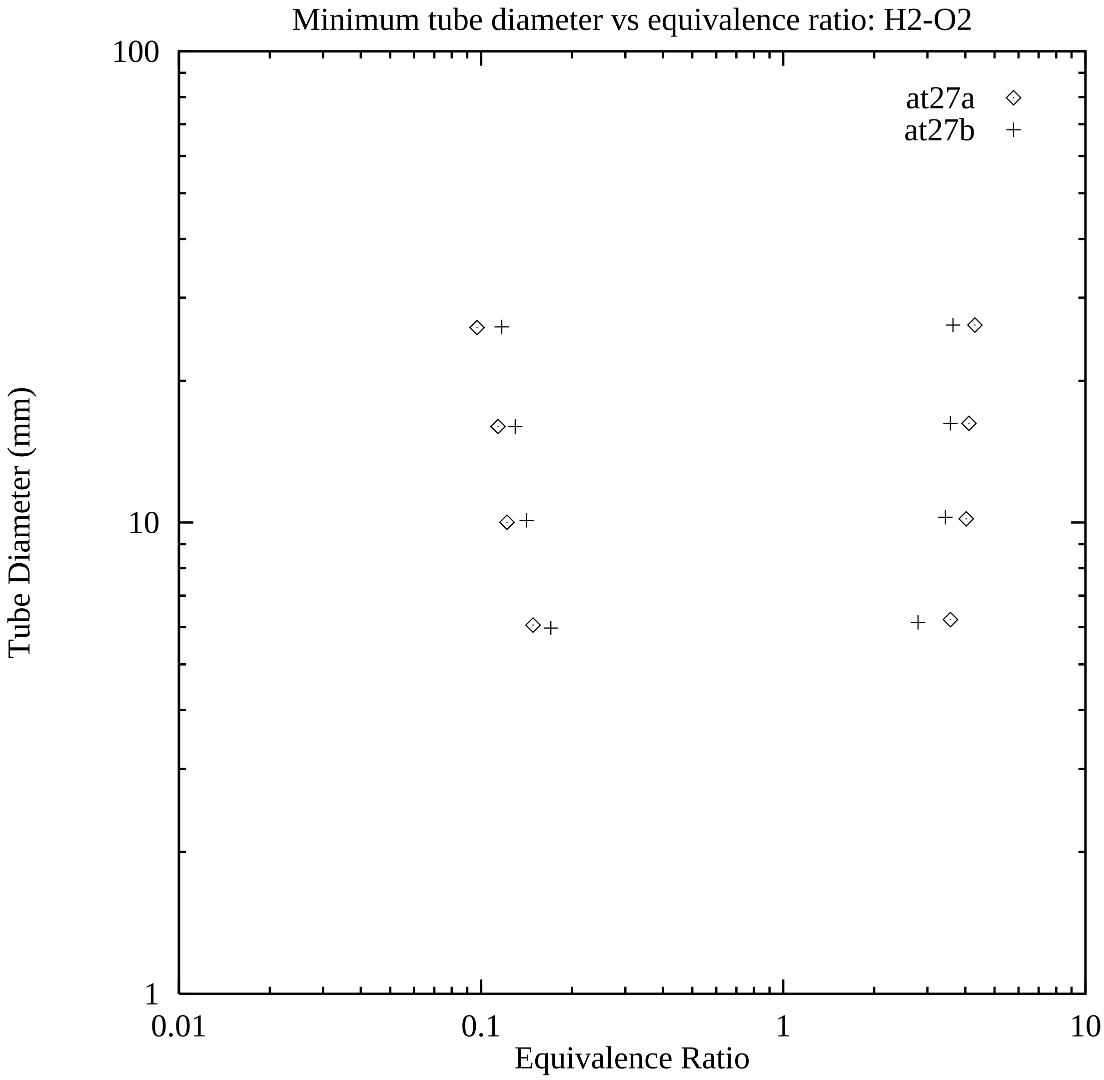

Figure 99: Minimum tube diameter vs equivalence ratio; H2-O2

at27a - Table 380 [2, Agafonov (1994)] T=298 K, P=100 kPa

at27b - Table 381 [2, Agafonov (1994)] T=135 K, P=100 kPa

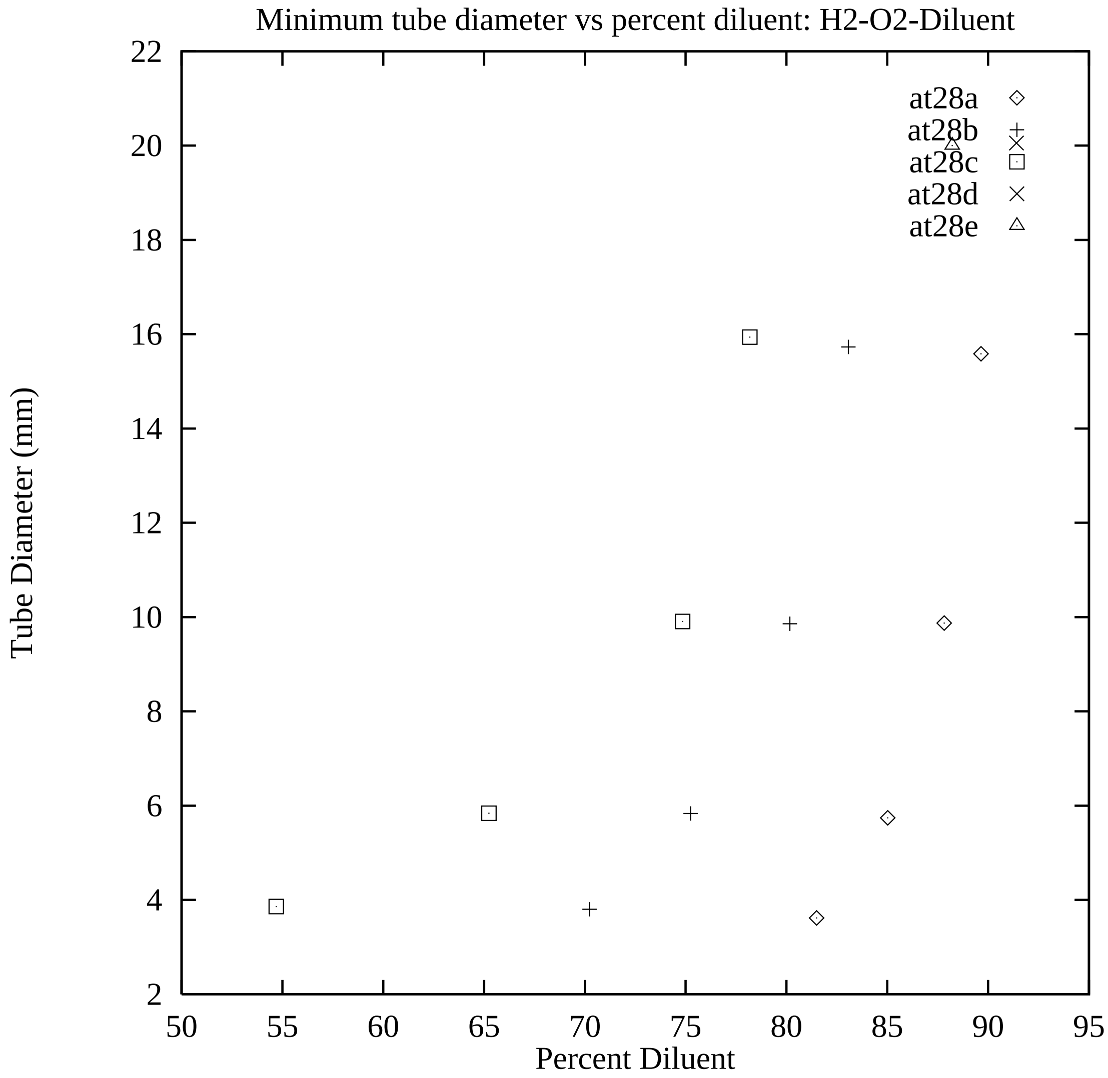

Figure 100: Minimum tube diameter vs percent diluent; H2-O2-Diluent

at28a - Table 382 [2, Agafonov (1994)] T=298 K, P=100 kPa, ER=1, 80-90% Ar
at28b - Table 383 [2, Agafonov (1994)] T=298 K, P=100 kPa, ER=1, 70-80% He
at28c - Table 384 [2, Agafonov (1994)] T=298 K, P=100 kPa, ER=1, 55-75% N2
at28d - Table 385 [2, Agafonov (1994)] T=298 K, P=100 kPa, ER=1, 90% Ar
at28e - Table 386 [2, Agafonov (1994)] T=298 K, P=100 kPa, ER=1, 86% He

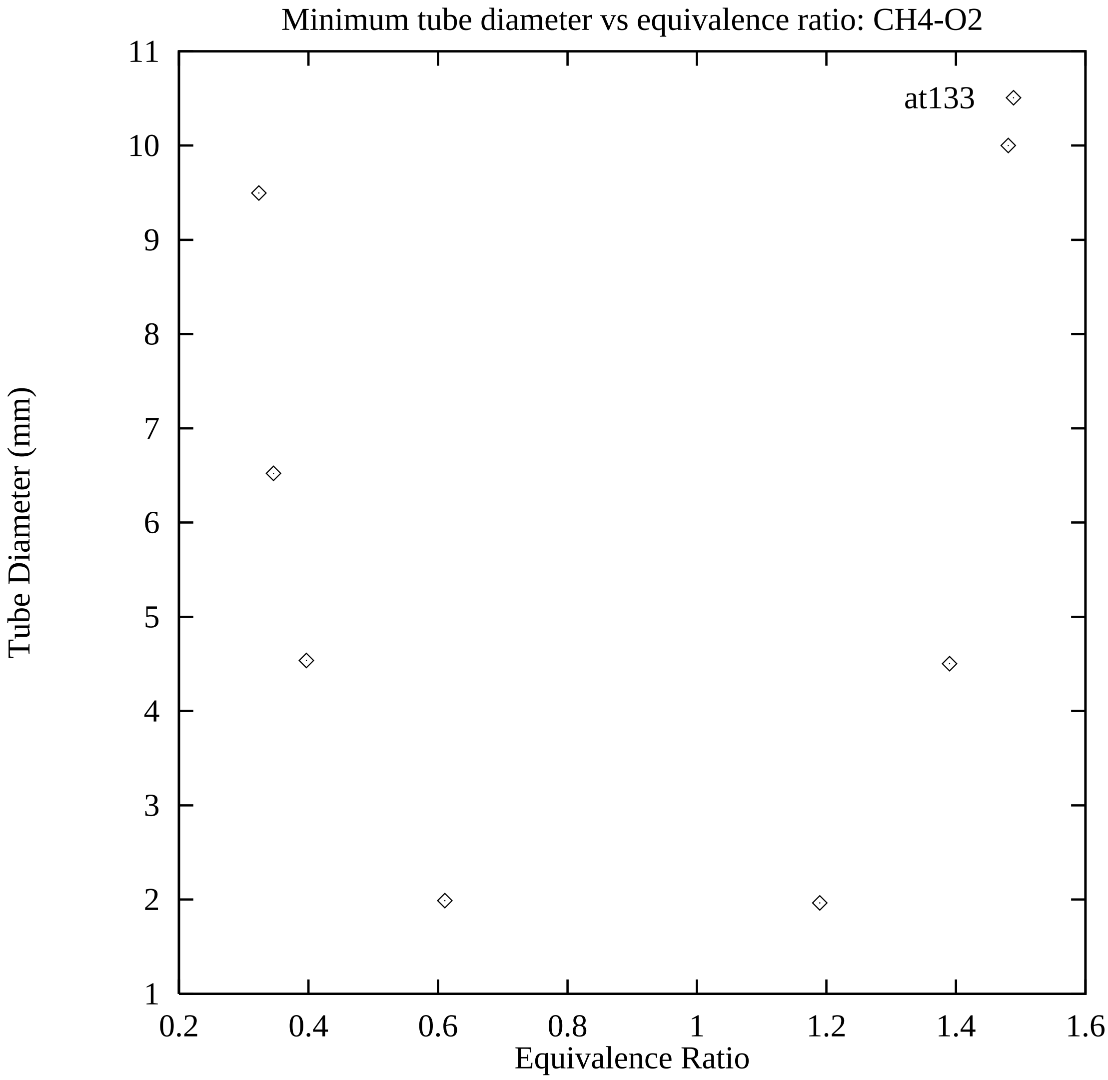

Figure 101: Minimum tube diameter vs equivalence ratio; CH4-O2

at133 - Table 387 [100, Pusch (1962)] T=293 K, P=101.3 kPa

2.5 Miscellaneous

3 Data Files

3.1 Cell Size

3.1.1 Cell Width - H2 Fuel

Table 1: ja5d [3, Akbar (1997)]

Percent N2	Cell Width (mm)
50	14
60	31.5
62	36
70	217.5

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 2: ja5e [3, Akbar (1997)]

Percent Air	Cell Width
10	2.5
15	4
20	3.5
50	8
54	10
60	14.5
65	26
70	57
72	89.5
74	143.5
76	107

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	70-100 kPa	Diluent:	Air
Initial Temperature:	293 K	Equivalence Ratio:	0.07-0.39

Table 3: at33a [5, Anderson (1992)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.2684	27.18892	6.4531
0.3714	37.62282	4.3233
0.4697	47.58061	3.1982
0.5765	58.39945	2.4519

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	26.3-56.7 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 4: at33b [5, Anderson (1992)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.5541	56.13033	2.4516
0.7183	72.76379	1.8428
0.8216	83.22808	1.73

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	26.3-56.7 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 5: at33c [5, Anderson (1992)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.6529	66.155	2.3294

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	26.3-56.7 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	0.75

Table 6: at58a [9, Barthel (1974)]

Pressure (atm)	Pressure (kPa)	Cell Width
0.0699	7.08087	18.9704
0.0775	7.85075	16.3393
0.0951	9.63363	15.814
0.1041	10.54533	15.6462
0.1141	11.55833	13.4746
0.1282	12.98666	9.4261
0.1268	12.84484	9.2096
0.1469	14.88097	9.117
0.1593	16.13709	7.4959
0.1744	17.66672	7.0811
0.1955	19.80415	6.3884
0.2602	26.35826	4.5812
0.2605	26.38865	4.0341
0.2886	29.23518	3.7675
0.3124	31.64612	3.7704
0.3235	32.77055	3.3989
0.3202	32.43626	3.0983
0.3585	36.31605	3.1017
0.3583	36.29579	3.3246
0.3969	40.20597	3.141
0.4249	43.04237	3.0359
0.3972	40.23636	2.8968
0.3843	38.92959	2.6399
0.4208	42.62704	2.5522
0.435	44.0655	2.7365
0.4655	47.15515	2.8024
0.4935	49.99155	2.3036
0.4562	46.21306	2.1475
0.483	48.9279	2.028
0.5172	52.39236	1.9154

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	6.7-53.3 kPa	Diluent:	
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 7: at58b [9, Barthel (1974)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.0598	6.05774	42.5743
0.0608	6.15904	33.8308
0.0602	6.09826	31.5656
0.0724	7.33412	27.6094
0.0787	7.97231	23.8167

0.0925	9.37025	20.8208
0.1029	10.42377	16.9654
0.1157	11.72041	14.1493
0.1212	12.27756	13.6835
0.153	15.4989	10.3163
0.1868	18.92284	7.7717
0.2176	22.04288	6.1241
0.2504	25.36552	5.0517
0.2812	28.48556	4.5144
0.3431	34.75603	3.48
0.3808	38.57504	3.145
0.4086	41.39118	2.8401
0.4479	45.37227	2.718
0.4794	48.56322	2.7222
0.521	52.7773	2.2948

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	6.7-53.3 kPa	Diluent:	Ar
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 8: at58c [9, Barthel (1974)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.0927	9.39051	83.1857
0.1063	10.76819	56.2537
0.0938	9.50194	52.5012
0.1125	11.39625	51.9006
0.0993	10.05909	42.68
0.129	13.0677	28.2055
0.1638	16.59294	17.8014
0.1965	19.90545	14.9796
0.2279	23.08627	12.7509
0.2613	26.46969	10.7297
0.2928	29.66064	9.8994
0.3281	33.23653	7.7745
0.3635	36.82255	7.2559
0.3936	39.87168	6.3201
0.4263	43.18419	6.1764
0.4564	46.23332	4.9635
0.4999	50.63987	4.6324
0.5353	54.22589	4.3734

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	6.7-53.3 kPa	Diluent:	Ar
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 9: at19 [16, Benedick (1984)]

Equivalence Ratio	Cell Size
0.5038	139.3740
0.5320	81.9227
0.5563	72.0284
0.5765	76.9438
0.5745	71.6286
0.5953	65.8946
0.5932	61.3426
0.6121	60.6070
0.6121	57.9120
0.6484	47.1225
0.6880	36.6420
0.7715	22.4464

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	82.7 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.5-.7

Table 10: at14 [29, Ciccarelli (1994)]

Equivalence Ratio	Cell Size
0.5124	95.8677
0.5990	41.4800
0.5910	34.3659
0.7900	11.0414
1.0233	8.1875
1.5828	8.7261
2.3830	24.3905
2.3730	31.5158
2.8458	46.4882
3.2920	75.7374

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	300 K	Equivalence Ratio:	.5-3.3

Table 11: at15 [29, Ciccarelli (1994)]

Equivalence Ratio	Cell Size
0.3571	104.5870
0.3860	78.4426
0.3840	62.9149
0.4500	29.3264
0.4536	24.0291
0.5050	20.4558
0.5040	15.1623
0.6654	7.9750
1.0270	8.7901
1.0200	5.6176
2.3680	17.3860
2.3660	10.3279

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	500 K	Equivalence Ratio:	.35-2.4

Table 12: at16 [29, Ciccarelli (1994)]

Equivalence Ratio	Cell Size
0.2630	80.0289
0.2630	78.5497
0.2657	46.8941
0.2923	41.2860
0.2925	37.1442
0.3269	37.1609
0.3270	35.3858
0.3271	33.9066
0.3274	31.2440
0.4207	15.9027
0.5010	16.2338
0.5020	12.3878
1.0250	3.9958
1.0230	5.1792

2.3970	11.0973
2.3970	9.6181

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	650 K	Equivalence Ratio:	.26-2.4

Table 13: ja20a [30, Ciccarelli (1997)]

Equivalence Ratio	Cell Size (mm)
2.51	18
1.0	8
0.76	11
0.59	27
0.5	93
0.42	187
0.42	248

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	300 K	Equivalence Ratio:	0.37-2.51

Table 14: ja20b [30, Ciccarelli (1997)]

Equivalence Ratio	Cell Size (mm)
1.0	6
0.41	52
0.34	98
0.30	196
0.29	429

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	500 K	Equivalence Ratio:	0.26-1

Table 15: ja20c [30, Ciccarelli (1997)]

Equivalence Ratio	Cell Size (mm)
0.40	17
0.31	30
0.25	46
0.23	74
0.23	94
0.2	213
0.19	230

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	650 K	Equivalence Ratio:	0.12-0.4

Table 16: ja21a [30, Ciccarelli (1997)]

Initial Pressure (kPa)	Cell Size (mm)
150	103
200	107

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	150-200 kPa	Diluent:	H2O
Initial Temperature:	650 K	Equivalence Ratio:	0.5

Table 17: ja21b [30, Ciccarelli (1997)]

Initial Pressure (kPa)	Cell Size (mm)
150	45
200	37

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	150-200 kPa	Diluent:	H2O
Initial Temperature:	650 K	Equivalence Ratio:	0.4

Table 18: ja21c [30, Ciccarelli (1997)]

Initial Pressure (kPa)	Cell Size (mm)
170	2
240	85

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	170-240 kPa	Diluent:	
Initial Temperature:	650 K	Equivalence Ratio:	0.2

Table 19: ja22a [30, Ciccarelli (1997)]

Percent Steam	Cell Size (mm)
30	75
35	175
40	503

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	650 K	Equivalence Ratio:	1

Table 20: ja22b [30, Ciccarelli (1997)]

Percent Steam	Cell Size (mm)
25	214
25	162

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	400 K	Equivalence Ratio:	1

Table 21: ja22c [30, Ciccarelli (1997)]

Percent Steam	Cell Size (mm)
10	33
20	91
25	275

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	650 K	Equivalence Ratio:	0.5

Table 22: ja22d [30, Ciccarelli (1997)]

Percent Steam	Cell Size (mm)
10	305

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	400 K	Equivalence Ratio:	0.5

Table 23: ja22e [30, Ciccarelli (1997)]

Percent Steam	Cell Size (mm)
7.5	429

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	650 K	Equivalence Ratio:	0.3

Table 24: ja22f [30, Ciccarelli (1997)]

Initial Temperature (K)	Cell Size (mm)
650	75
500	286

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	500-650 K	Equivalence Ratio:	1

Table 25: mk9b [32, Denisov (1960)]

Initial Pressure (torr)	Initial Pressure (kPa)	Cell Width (mm)
33.3649	4.44828749	49.5256
52.248	6.965827105	48.4234
84.9503	11.32577519	43.3694
124.562	16.60690086	20.2503
199.905	26.65180806	8.29202
295.835	39.44142286	6.86623
296.498	39.52981559	5.13397
390.961	52.12384648	7.54391
394.463	52.59074141	6.43222
502.982	67.05875151	4.27165
762.281	101.6291083	2.08062
885.376	118.0404253	2.03303

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4-120 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 26: at21a [36, Desbordes (1990)]

Pressure (bar)	Pressure (kPa)	Cell Width
0.2842	28.42	7.0013
0.2845	28.45	6.0322
0.8032	80.32	2.0323
0.8042	80.42	1.7749
0.4748	47.48	3.4775
0.4755	47.55	2.9961
0.9887	98.87	1.5955
0.99	99	1.3934

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50.7-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 27: ja2 [39, EDL (unpublished)]

Percent Ar	Cell Width (mm)
57	2
72.3	4
87	20.5

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 28: ja3 [39, EDL (unpublished)]

Percent He	Cell Width (mm)
20	1
50	2
70	4.5
80	10
85	28
87.5	56
90	138.5

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 29: ja4 [39, EDL (unpublished)]

Percent CO2	Cell Width (mm)
10	2
20	6
30	26.5
32.5	28.5
35	57
40	130.5

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 30: H2-Air1 [48, Guirao (1982)]

Equivalence Ratio	Cell Size
0.453	245
0.4703	183
0.4875	162.3
0.5048	123.8
0.5224	110.8
0.5438	88.9
0.5583	80
0.5655	76.2
0.595	55.4
0.6327	44
0.6713	30.7
0.7109	25.6
0.7516	21.4
0.7933	18.1
0.8362	17
0.8803	15.7
0.9256	15.5
0.9721	15
1	15.1
1.02	15.1
1.12	16.2
1.2261	17.2
1.3388	19
1.4587	21.8
1.5867	22.9
1.7234	26.7
1.87	30.5
2.0274	37
2.1969	41.8
2.38	50
2.5783	55
2.7939	79
2.9089	95
3.0291	100
3.2867	141.5
3.57	189.2

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.54 - 2.03

Table 31: ja26b [49, Guirao (1989)]

Equivalence Ratio	Cell Width (mm)
0.52	370
0.53	262
0.57	230
0.60	154
0.64	98.9
0.76	48.5
0.84	34.5
0.96	21.3
1.13	24.0
1.23	25.6
1.54	32.8
1.88	48.2
2.29	92.6
2.68	273

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.52-2.68

Table 32: ja26d [49, Guirao (1989)]

Equivalence Ratio	Cell Width (mm)
0.65	411
0.70	310
0.74	171
0.76	131
0.83	106
0.84	84.6
0.95	41.8
1.23	61.8
1.52	116
1.87	239

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.65-1.87

Table 33: ja26f [49, Guirao (1989)]

Equivalence Ratio	Cell Width (mm)
0.80	307
0.83	307
0.89	238
0.95	159
1.22	171

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.8-1.22

Table 34: ja1a [53, Kaneshige (1999)]

Percent N2	Cell Width (mm)
25	3
25	3.3
40	4.3
50	5.8

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 35: ja1c [53, Kaneshige (1999)]

Initial Pressure (kPa)	Cell Width (mm)
10	31
11.5	26.3
25	8.3
26.5	8.5
39.5	6

41	5.5
50	4.3
51.5	5
100	3
101.5 3.3	

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	10-101.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 36: ja1d [53, Kaneshige (1999)]

Initial Pressure (kPa)	Initial Pressure (atm)	Cell Width
26.5	11.8	
49.4	6.5	
50.9	5.8	
57.2	6.5	
101.5	4.3	

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	26.5-101.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 37: ja1e [53, Kaneshige (1999)]

Initial Pressure (kPa)	Cell Width (mm)
26.5	14
26.5	14
51.5	9.8
84.6	6.8
101.5	5.8

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	26.5-101.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 38: at182a [55, Knystautas (1988)]

Initial Pressure	Cell Width
20.17896	4.1807
20.07766	5.6554
14.49603	6.6674
8.0027	13.4885
8.0027	14.9541
7.38477	20.2411
7.28347	22.9446
5.01435	20.4521
4.99409	30.0022

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Cl2
Initial Pressure:	2.1-24.0 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.56

Table 39: at182b [55, Knystautas (1988)]

Initial Pressure	Cell Width

24.23096	1.7891
23.33952	1.9407
20.20935	1.9863
17.37295	2.2706
10.7378	4.0195
7.20243	6.2275
7.38477	7.999
5.1663	7.9623
4.80162	10.9366
4.81175	13.4424

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Cl2
Initial Pressure:	2.1-24.0 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.67

Table 40: at182c [55, Knystautas (1988)]

Initial Pressure	Cell Width
19.3483	2.5339
15.3976	2.5197
9.43103	3.994
9.37025	4.5607
5.13591	9.0252
4.91305	12.4854
2.27925	35.4965
2.66419	41.6936

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Cl2
Initial Pressure:	2.1-24.0 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.5

Table 41: at182d [55, Knystautas (1988)]

Initial Pressure	Cell Width
1.99	20.97
2.10	20.81
2.69	16.42
2.71	14.38
2.68	12.98
4.00	8.64
4.03	9.30
4.48	8.82
5.37	6.06
5.36	5.59
5.92	5.62
6.10	6.10
6.09	4.64
6.04	4.01
6.52	4.01
6.63	5.03
6.78	4.57
7.37	4.64
7.47	4.00
7.64	3.61
8.24	3.64
7.51	2.79
7.57	3.03
8.11	3.03
9.95	3.02
13.34	2.00
14.77	1.01
20.16	1.03

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Cl2
Initial Pressure:	2.1-24.0 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 42: mk7b [56, Knystautas (1982)]

31.43	4.0
44.19	7.5
52.94	11.4
55.62	15.5

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 43: at74 [56, Knystautas (1982)]

Pressure (atm)	Pressure (kPa)	Cell Width
0.1985	20.10805	7.6828
0.1854	18.78102	9.2731
0.1717	17.39321	10.2757
0.1577	15.97501	11.0986
0.1448	14.66824	12.194
0.1296	13.12848	13.629
0.115	11.6495	14.9749
0.0905	9.16765	20.5514
0.0777	7.87101	26.1135
0.0638	6.46294	37.722
0.0516	5.22708	46.3235

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	5.3-20 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 44: at35a [61, Kumar (1990)]

Percent Diluent	Cell Width
24.9443	1.4486
40.0891	1.6897
54.6993	2.5041
54.5212	2.7122
62.0045	2.9883
61.6481	3.4657
69.3096	4.3535
78.2183	9.1357
82.3163	22.2340

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 45: at35b [61, Kumar (1990)]

Percent Diluent	Cell Width
24.7661	1.2490
39.7327	1.3451

54.8775	1.6993
69.6659	2.6511
84.2762	10.4753

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 46: at38a [61, Kumar (1990)]

Percent Diluent	Cell Width
3.1238	20.2936
10.2496	29.9798
15.4554	29.2436
16.0031	27.2033
19.5535	30.3004
22.9230	34.9924
26.8360	36.4770
25.3675	41.9030
26.8905	53.2992

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and CO2
Initial Temperature:	295 K	Equivalence Ratio:	1

Table 47: at38b [61, Kumar (1990)]

Percent Diluent	Cell Width
20.1073	8.0584
35.2486	13.2512
38.4321	15.3035
41.0522	17.0482
44.7696	16.6333
50.2367	27.3914
50.4357	29.9789

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and CO2
Initial Temperature:	295 K	Equivalence Ratio:	1

Table 48: at38c [61, Kumar (1990)]

Percent Diluent	Cell Width
29.8248	2.9802
30.1692	2.4579
44.7523	4.0420
44.9686	4.9899
59.9100	7.4521
60.1099	8.2053
60.3098	9.0346
63.3038	10.1860
65.4472	19.9835
69.9485	25.7147

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and CO2
Initial Temperature:	295 K	Equivalence Ratio:	1

Table 49: at39a [61, Kumar (1990)]

Percent Diluent	Cell Width
0.9250	24.3351
5.5935	26.6434
15.1226	34.5574
14.7575	38.5448

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and H2O
Initial Temperature:	353 K	Equivalence Ratio:	1

Table 50: at39b [61, Kumar (1990)]

Percent Diluent	Cell Width
39.9504	49.6326
40.1230	40.8763
32.0731	26.4292
24.9647	19.4080
17.1091	13.9959

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and H2O
Initial Temperature:	353 K	Equivalence Ratio:	1

Table 51: at39c [61, Kumar (1990)]

Percent Diluent	Cell Width
51.8234	20.9575
49.7495	15.2910
34.7842	7.9515
34.5743	5.7308
19.8050	3.4055
4.4998	2.8079

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and H2O
Initial Temperature:	353 K	Equivalence Ratio:	1

Table 52: at39d [61, Kumar (1990)]

Percent Diluent	Cell Width
14.7419	2.2968
29.6802	3.0325
44.6194	4.0527
51.9129	5.4193
59.9554	7.5605
59.9637	8.4839
67.8536	18.9962
67.8584	20.3068
70.6617	22.1017
71.7906	25.4081

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He and H2O
Initial Temperature:	353 K	Equivalence Ratio:	1

Table 53: at42a [61, Kumar (1990)]

Initial Pressure	Cell Width
27.46243	12.968
27.47256	10.9936
40.26675	9.9925
40.57065	7.4842
54.08407	5.0243
80.95896	3.5403
81.5465	3.043
107.8541	3.2844
130.7074	1.9882
161.5431	1.7333

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	20-150 kPa	Diluent:	He
Initial Temperature:	295 K	Equivalence Ratio:	1

Table 54: at42b [61, Kumar (1990)]

Initial Pressure	Cell Width
159.2233	2.4962
161.3506	2.9855
131.4266	3.52
130.4947	4.0116
104.1871	4.0096
106.3144	4.385
80.80701	8.0856
53.27367	9.9989
39.68934	13.9997
20.30052	30.0068

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	20-150 kPa	Diluent:	He
Initial Temperature:	295 K	Equivalence Ratio:	1

Table 55: at47a [68, Lee (1977)]

Pressure (atm)	Pressure (kPa)	Cell Width
0.0986	9.99	27.5570
0.1507	15.27	14.5329
0.1957	19.829	10.3292
0.2858	28.959	6.0532

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	5.1-30.4 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 56: at47b [68, Lee (1977)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.19	18.83	90.61
0.23	22.88	95.76
0.26	26.50	61.63
0.29	29.80	50.80
0.32	32.04	45.32
0.37	37.35	36.07
0.41	41.59	32.48

0.39	39.14	29.19
0.45	45.91	29.24

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	20.3-40.5 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 57: at57a [79, Manzhalei (1974)]

Pressure (atm)	Pressure (kPa)	Cell Width
2.01E-01	2.03E+01	1.18E+01
2.43E-01	2.46E+01	5.80E+00
3.00E-01	3.04E+01	6.38E+00
3.45E-01	3.50E+01	5.33E+00
3.97E-01	4.02E+01	4.45E+00
4.96E-01	5.03E+01	2.94E+00
5.95E-01	6.03E+01	2.38E+00
6.84E-01	6.93E+01	1.99E+00
8.56E-01	8.67E+01	1.71E+00
9.84E-01	9.97E+01	1.39E+00
1.23E+00	1.25E+02	1.22E+00
1.46E+00	1.47E+02	9.80E-01
1.70E+00	1.72E+02	8.76E-01
1.65E+00	1.67E+02	7.96E-01
1.90E+00	1.92E+02	7.42E-01
2.25E+00	2.28E+02	6.45E-01
2.93E+00	2.97E+02	4.38E-01
3.14E+00	3.18E+02	4.38E-01
3.61E+00	3.66E+02	4.02E-01
3.82E+00	3.87E+02	3.75E-01
4.28E+00	4.33E+02	4.02E-01
4.40E+00	4.46E+02	4.49E-01
4.85E+00	4.91E+02	2.96E-01
5.13E+00	5.19E+02	3.00E-01
5.05E+00	5.12E+02	2.88E-01
6.06E+00	6.13E+02	2.12E-01
6.06E+00	6.14E+02	2.25E-01
7.17E+00	7.26E+02	2.09E-01
7.06E+00	7.16E+02	1.87E-01
7.47E+00	7.57E+02	1.85E-01
7.36E+00	7.46E+02	1.70E-01
8.01E+00	8.11E+02	1.59E-01
8.84E+00	8.95E+02	1.61E-01
9.08E+00	9.20E+02	1.42E-01
1.00E+01	1.02E+03	1.44E-01
1.22E+01	1.23E+03	1.09E-01

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	10.1-1013 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 58: ja5a [98, Pfahl (1998)]

Equivalence ratio	Cell Width (mm)
0.06	128
0.07	91
0.08	71
0.10	48
0.124	25
0.149	13
0.25	6.5

0.667	2.8
1.5	2.8
2.33	8
4.0	34
5.667	110

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	70.9 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.06-5.7

Table 59: ja5b [98, Pfahl (1998)]

Equivalence ratio	Cell Width (mm)
0.11	210
0.25	35
0.667	7.5
1.5	9
2.33	21
4.0	165

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	70.9 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	0.11-4.0

Table 60: ja5c [98, Pfahl (1998)]

Equivalence ratio	Cell Width (mm)
0.231	250
0.333	60
0.60	17
0.778	14.5
1.0	16
1.286	21
1.667	28

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	N2O + O2
Initial Pressure:	70.9 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	0.231-1.667

Table 61: at5a [106, Stamps (1991)]

Initial Pressure (kPa)	Cell Width (mm)
25.46682	24.2083
50.3461	15.1996
100.834	11.0429
101.452	9.2068
151.3219	7.6349

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	25.3 - 152.0 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 62: at5b [106, Stamps (1991)]

Initial Pressure (kPa)	Cell Width

23.94	261.53
50.09	156.24
100.52	77.62
252.19	99.46

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	20.2 - 253.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.5

Table 63: ja23a [106, Stamps (1991)]

Initial Pressure (atm)	Cell Width (mm)
1	653
2.63	252

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100,266 kPa	Diluent:	H2O
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 64: ja23c [106, Stamps (1991)]

Initial Pressure (atm)	Cell Width (mm)
1	166

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 65: ja23e [106, Stamps (1991)]

Initial Pressure (atm)	Cell Width (mm)
1	27.8

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 66: ja23g [106, Stamps (1991)]

Initial Pressure (atm)	Cell Width (mm)
1	6.8

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 67: ja25a [105, Stamps (1991)]

Equivalence Ratio	Cell Width (mm)
0.95	1301
1.05	668
1.54	514

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	393 K	Equivalence Ratio:	0.95-1.54

Table 68: ja25b [105, Stamps (1991)]

Equivalence Ratio	Cell Width (mm)
0.7	996
0.87	248
1.05	164
2.02	290

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	393 K	Equivalence Ratio:	0.7-2.02

Table 69: ja25c [105, Stamps (1991)]

Equivalence Ratio	Cell Width (mm)
0.53	458
0.63	181
1.02	27.8
2.02	41.5
4.25	609

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2O
Initial Temperature:	393 K	Equivalence Ratio:	0.53-4.25

Table 70: ja25d [105, Stamps (1991)]

Equivalence Ratio	Cell Width (mm)
0.88	378
1.04	238

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	393 K	Equivalence Ratio:	0.88,1.04

Table 71: ja25e [105, Stamps (1991)]

Equivalence Ratio	Cell Width (mm)
0.52	1209
0.63	151
1.03	32.0
2.0	52

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	393 K	Equivalence Ratio:	0.52-2.0

Table 72: ja25f [105, Stamps (1991)]

Equivalence Ratio	Cell Width (mm)

0.37	441
0.36	301
0.43	150
0.52	37.8
0.61	24.1
0.99	7
2.02	14.1
3.03	37.2

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	393 K	Equivalence Ratio:	0.37-3.03

Table 73: at64c [111, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.118105	11.966989	33.540000
0.131713	13.345820	26.990400
0.145215	14.713910	23.383300
0.198233	20.085959	16.154900
0.257828	26.124422	10.644800
0.330215	33.459035	8.012970

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	13.2-32.4 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	0.36

Table 74: at64b [111, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.130922	13.265672	51.945300
0.146022	14.795679	40.575400
0.197873	20.049482	27.199000
0.258363	26.178631	17.143000

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	13.2-32.4 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	2.12

Table 75: at64a [111, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.118171	11.973677	83.171200
0.131200	13.293840	82.419200
0.183969	18.640659	46.991700
0.258992	26.242364	24.876100
0.331619	33.601295	20.172400

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	13.2-32.4 kPa	Diluent:	3.75Ar+N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 76: at62a [108, Strehlow (1969)]

Pressure (atm)	Pressure (kPa)	Cell Width

0.0534	5.40942	26.6191
0.0657	6.65541	25.1949
0.0724	7.33412	24.436
0.0783	7.93179	24.5909
0.0923	9.34999	16.8974
0.0981	9.93753	13.8776
0.1042	10.55546	13.2938
0.1177	11.92301	12.3502
0.1306	13.22978	9.3062
0.1306	13.22978	8.6434
0.152	15.3976	7.3672
0.1615	16.35995	7.2333
0.227	22.9951	4.7623
0.227	22.9951	4.396
0.3038	30.77494	3.7712
0.2948	29.86324	3.3341
0.327	33.1251	2.8241

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	5.6-32.4 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 77: at62b [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.0945	9.57285	18.6476
0.1313	13.30069	11.5441
0.1997	20.22961	6.4376
0.2611	26.44943	4.1347
0.3269	33.11497	3.3348
0.3269	33.11497	3.1164
0.3923	39.73999	2.6078

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	9.1-40.5 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 78: at69f [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.144273	14.618462	56.903200
0.169770	17.201945	44.536900
0.183654	18.608742	53.377500
0.193649	19.621485	43.927400
0.209576	21.235288	41.737600
0.229894	23.294010	33.183500
0.258880	26.231016	27.857600
0.322525	32.679846	21.075600
0.355182	35.988816	21.519800
0.355384	36.009284	15.884100
0.386382	39.150156	13.560300
0.462681	46.881152	11.005300

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	14-47 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 79: at69c [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.087240	8.839593	27.912600
0.092786	9.401531	24.679000
0.099557	10.087633	21.439400
0.105851	10.725353	22.662800
0.117171	11.872352	15.346500
0.129594	13.131112	16.242100
0.143381	14.528080	14.378000
0.160065	16.218586	11.437500
0.170269	17.252506	9.248440
0.194245	19.681875	8.492870
0.225570	22.855880	6.886130
0.254019	25.738475	5.678580
0.291138	29.499558	4.520910
0.320660	32.490875	4.297870
0.384020	38.910827	3.306100
0.470063	47.629133	2.637480

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	8-47 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 80: at69d [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.099878	10.120128	40.066500
0.131183	13.292117	27.276100
0.135309	13.710184	23.666700
0.141958	14.383894	27.343000
0.176894	17.923785	18.584000
0.195759	19.835281	14.517600
0.211839	21.464587	14.553200
0.227314	23.032591	12.199200
0.264016	26.751421	9.046160
0.277056	28.072699	9.222990
0.333158	33.757234	8.333160
0.390346	39.551808	6.292440

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	10-40 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 81: at69e [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.087045	8.819855	92.373400
0.117294	11.884815	91.581700
0.131043	13.277932	48.308100
0.153460	15.549335	47.685900
0.163292	16.545562	32.833100
0.185525	18.798321	25.669800
0.196404	19.900635	26.178700
0.226100	22.909583	20.475600
0.201863	20.453768	14.531400
0.313035	31.718271	13.472000
0.321414	32.567274	12.779500
0.346374	35.096346	11.303600
0.361951	36.674685	10.538500
0.391695	39.688496	10.377300

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	8-40 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 82: at69g [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.231532	23.459980	81.079400
0.259714	26.315521	52.061000
0.304143	30.817289	51.390500
0.306935	31.100189	42.234700
0.329246	33.360851	42.326800
0.369185	37.407670	33.078700
0.406594	41.198137	32.590500
0.455947	46.198830	24.575900

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	24-46 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 83: at65 [111, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.01	1.37	19.88
0.01	1.37	11.82
0.02	2.02	17.67
0.02	2.01	7.93
0.06	5.62	6.68
0.06	6.13	6.02
0.07	6.67	5.85
0.06	5.63	4.34
0.07	7.48	4.98

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.3-7.3 kPa	Diluent:	Ar
Initial Temperature:	600 - 800 K	Equivalence Ratio:	1

Table 84: at3a [113, Tieszen (1986)]

Equivalence Ratio	Cell Width (mm)
0.3735	416.8210
0.3799	326.4700
0.3864	286.5930
0.4339	173.0230
0.5127	65.1376
0.6057	24.9250
0.6259	24.5251
0.6472	18.8997
0.8156	9.0868
0.9009	6.0489
1.0106	5.0585
1.5192	6.0601
2.0004	12.0247
3.0520	22.0047

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	150 - 300 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	0.35 - 3

Table 85: at3b [113, Tieszen (1986)]

Equivalence Ratio	Cell Width
0.5172	541.5730
0.6209	228.5270
0.6211	210.6500
0.6419	194.1930
0.8373	54.5451
1.0209	28.9146
1.9919	40.1470

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	150 - 304 kPa	Diluent:	steam
Initial Temperature:	373 K	Equivalence Ratio:	.5 - 2

Table 86: at3c [113, Tieszen (1986)]

Equivalence Ratio	Cell Width
0.8470	217.8650
1.0504	93.4533
2.0496	127.6600

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	150 - 304 kPa	Diluent:	steam
Initial Temperature:	373 K	Equivalence Ratio:	.8 - 2

Table 87: at3d [113, Tieszen (1986)]

Equivalence Ratio	Cell Width
0.9325	361.1400
1.0458	322.3470
1.0462	287.6050

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	150 - 304 kPa	Diluent:	steam
Initial Temperature:	373 K	Equivalence Ratio:	.93 - 1.04

Table 88: at4 [113, Tieszen (1986)]

Equivalence Ratio	Cell Size
0.3687	1218.8899
0.3808	647.6750
0.3975	426.9710
0.4222	270.4130
0.4770	193.5340
0.4878	151.9380
0.5009	101.4910
3.6817	190.0800
4.4392	482.9150
5.5079	1423.4800

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	298 K	Equivalence Ratio:	0.4 - 5

Table 89: ja23b [113, Tieszen (1986)]

Initial Pressure (atm)	Cell Width (mm)
2.56	294
2.55	332

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	260 kPa	Diluent:	H2O
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 90: ja23d [113, Tieszen (1986)]

Initial Pressure (atm)	Cell Width (mm)
2.24	96

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	227 kPa	Diluent:	H2O
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 91: ja23f [113, Tieszen (1986)]

Initial Pressure (atm)	Cell Width (mm)
1.99	29.1

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	200 kPa	Diluent:	H2O
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 92: ja23h [113, Tieszen (1986)]

Initial Pressure (atm)	Cell Width (mm)
1.808	4.9

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	180 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 93: ja26a [112, Tieszen (1987)]

Equivalence Ratio	Cell Width (mm)
0.47	492
0.54	301
0.57	200
0.64	94.4

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.47-0.64

Table 94: ja26c [112, Tieszen (1987)]

Equivalence Ratio	Cell Width (mm)
0.68	241

0.72	241
0.80	99.8

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.68-0.8

Table 95: ja26e [112, Tieszen (1987)]

Equivalence Ratio	Cell Width (mm)
0.72	496
0.80	388
0.98	178

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.72-0.98

Table 96: ja27a [112, Tieszen (1987)]

Initial Temperature (K)	Cell Size (mm)
288	210
323	134
373	105
372	63.9

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	288-372 K	Equivalence Ratio:	0.448-0.51

Table 97: ja27b [112, Tieszen (1987)]

Initial Temperature (K)	Cell Size (mm)
278	190
324	139
370	129

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100-102 kPa	Diluent:	
Initial Temperature:	278-370 K	Equivalence Ratio:	0.446-0.511

Table 98: mk8a [125, Voitsekhovskii (1966)]

Initial Pressure (torr)	Initial Pressure (kPa)	Cell Width (mm)
105.289	14.03737885	23.3572
101.732	13.56315118	12.524
148.469	19.79423872	8.55718
148.469	19.79423872	6.95193
285.246	38.0296723	3.47819
402.23	53.62625625	2.06914
477.641	63.68022938	3.99488
587.023	78.26329668	3.02833
567.191	75.61924747	1.31917
673.53	89.7966148	2.29563

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	13-85 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 99: at21b [130, Zitoun (1995)]

Pressure (bar)	Pressure (kPa)	Cell Width
0.7011	70.11	1.7969

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50.7-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 100: at21c [130, Zitoun (1995)]

Pressure (bar)	Pressure (kPa)	Cell Width
0.4918	49.18	1.4819
0.6953	69.53	0.9901
0.9827	98.27	0.6889

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50.7-101.3 kPa	Diluent:	
Initial Temperature:	123 K	Equivalence Ratio:	1

Table 101: ja1b [39, EDL (unpublished)]

Percent N2	Cell Width (mm)
0	1.3
33	3
56	10.5

Category:	cell size	Fuel:	H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

3.1.2 Cell Width - CH4 Fuel

Table 102: at192a [1, Abid (1991)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.0654	6.62502	85.7303
0.0787	7.97231	70.6086
0.0922	9.33986	55.9179
0.1188	12.03444	40.4519
0.1327	13.44251	35.0807

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	6.5-12 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 103: ja6a [3, Akbar (1997)]

Percent N2	Cell Width (mm)

0	6.8
0	7
20	8.5
45	38
66.7	228

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	70-72 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 104: ja6b [3, Akbar (1997)]

Percent N2	Cell Width (mm)
57.1	42.8
62.5	71

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	102 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 105: ja7a [3, Akbar (1997)]

Percent N2	Cell Width (mm)
0	5.8
16.7	11
28.6	14.5
50	40

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	57-72 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 106: ja7b [3, Akbar (1997)]

Percent N2	Cell Width (mm)
37.5	16.8
44.4	32.8
50	33.3

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	77-87 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 107: ja7c [3, Akbar (1997)]

Percent N2	Cell Width (mm)
54.5	42
58.3	59.8

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	92-97 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 108: ja7d [3, Akbar (1997)]

Percent N2	Cell Width (mm)
61.5	61
63	89
64.3	78.5

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	102 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 109: ja7e [3, Akbar (1997)]

Percent Air	cell width
48.8	32.5
58.8	51.75
60.4	39
63.1	60.5
65.1	50

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	86-97 kPa	Diluent:	Air
Initial Temperature:	293 K	Equivalence Ratio:	0.5-0.7

Table 110: at193b [4, Aminallah (1993)]

Equivalence Ratio	Cell Width (mm)
7.55975E-1	3.48916E+0
8.53929E-1	2.66636E+0
1.00393E+0	2.11591E+0
1.00284E+0	2.35048E+0
1.09342E+0	2.08850E+0
1.20426E+0	2.45095E+0
1.20494E+0	2.66696E+0
1.28199E+0	2.75146E+0
1.28267E+0	2.96747E+0
1.27969E+0	3.18460E+0
1.33552E+0	2.91525E+0

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	120 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.7-1.3

Table 111: at176a [13, Beeson (1991)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
1.0000	101.3	349.5320

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 112: at13a [54, Knystautas (1984)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)	Equivalence ratio
1.0000	101.3	320.0	1.0

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 113: at73 [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (torr)	Initial Pressure (kPa)
35.3332	100.0090	13.33015
39.4867	88.7144	11.8247
45.2748	78.6958	10.48932
55.1129	68.6237	9.146817
73.7041	59.3307	7.908158

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	8-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 114: at199a [62, Laberge (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.2497	25.29461	17.4789
0.1998	20.23974	21.7863
0.1328	13.45264	36.2337
0.1184	11.99392	40.9537
0.1049	10.62637	46.2863
0.0923	9.34999	57.0279
0.0787	7.97231	73.7975

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	8-26.7 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 115: at57d [79, Manzhalei (1974)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
6.0779	615.6913	0.3796
5.9119	598.8755	0.4068
4.0015	405.352	0.7284
3.4763	352.1492	0.7392
3.0188	305.8044	0.681
3.0248	306.4122	0.9357
2.0435	207.0066	1.2364
1.5468	156.6908	1.7987
1.503	152.2539	1.9538
1	101.3	2.3769
1	101.3	2.9649
0.8004	81.08052	2.9281
0.5964	60.41532	3.5104
0.4039	40.91507	6.7356
0.37	37.481	12.5644

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	30.4-912 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 116: at157a [84, Moen (1984)]

Initial Pressure (atm)	Intial Pressure (kPa)	Cell Width
1.0000	101.3	291.7100
1.0000	101.3	279.5550

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 117: at184a [97, Pedley (1988)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.0667	6.75671	95.9076
0.0805	8.15465	75.7639
0.0922	9.33986	53.8551
0.1055	10.68715	44.2432
0.1206	12.21678	40.3812
0.1343	13.60459	35.8936

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	7-13 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 118: at128a [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width
0.1346	13.63498	50.6094
0.1348	13.65524	45.8595
0.1349	13.66537	42.592
0.2	20.26	41.7843
0.2027	20.53351	37.4053
0.2692	27.26996	46.8784
0.2715	27.50295	24.1023
0.3295	33.37835	19.8432
0.3992	40.43896	18.4785
0.4677	47.37801	14.2972
0.5246	53.14198	8.1244

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	15.2-50.7 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 119: at171a [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width
298.15	305.0
373.15	260.0

Category:	cell size	Fuel:	CH4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	298-373 K	Equivalence Ratio:	1

3.1.3 Cell Width - C2H2 Fuel

Table 120: at157l [27, Bull (1982)]

Equivalence Ratio	Cell Width (mm)

1.0	9.2

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 121: mk9a [32, Denisov (1960)]

Initial Pressure (torr)	Initial Pressure (kPa)	Cell Width (mm)
96.6676	12.88795338	3.90842
494.705	65.95524227	1.48122
904.25	120.5567516	0.795235

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	12-120 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 122: at187a [35, Desbordes (1988)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.0263	2.66419	10.921
0.0264	2.67432	9.7369
0.0264	2.67432	9.1282
0.0342	3.46446	7.3748
0.0325	3.29225	6.3868
0.0307	3.10991	5.8997
0.0374	3.78862	6.9183
0.0374	3.78862	6.3023
0.0391	3.96083	4.94
0.0392	3.97096	3.9551
0.0451	4.56863	3.6067
0.0593	6.00709	3.2686
0.0593	6.00709	2.9563
0.0594	6.01722	2.732
0.0663	6.71619	2.7738
0.0791	8.01283	2.494
0.0725	7.34425	2.1905
0.0792	8.02296	2.1763
0.1058	10.71754	1.5792
0.1183	11.98379	1.3211
0.1193	12.08509	1.1949
0.1312	13.29056	1.2483
0.1323	13.40199	1.0585
0.1737	17.59581	1.0233

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	2.5-18.2 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 123: at187b [35, Desbordes (1988)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.1327	13.44251	1.9477
0.1047	10.60611	2.3429
0.093	9.4209	2.6068
0.093	9.4209	2.4264
0.079	8.0027	3.2521
0.0784	7.94192	2.9624

0.0596	6.03748	3.9959
0.0529	5.35877	4.7765
0.0529	5.35877	5.1317
0.0491	4.97383	5.4319
0.0463	4.69019	6.5898
0.0393	3.98109	8.7692

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4.1-13.2 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 124: at187c [35, Desbordes (1988)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.0391	3.96083	13.9778
0.0464	4.70032	12.0382
0.0526	5.32838	10.5141
0.0527	5.33851	9.109
0.0598	6.05774	7.7864
0.0677	6.85801	7.519
0.0804	8.14452	5.3739
0.1042	10.55546	4.4361
0.1208	12.23704	4.0166
0.1174	11.89262	3.5041
0.1201	12.16613	3.2856
0.1312	13.29056	3.0383
0.1467	14.86071	2.7502
0.1579	15.99527	2.732
0.1738	17.60594	2.4905
0.1899	19.23687	2.4567
0.1886	19.10518	2.2378
0.2001	20.27013	2.1911
0.248	25.1224	1.8082
0.2499	25.31487	1.7074
0.2691	27.25983	1.6016
0.324	32.8212	1.2748
0.3516	35.61708	1.1537

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4.1-45.6 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 125: at187d [35, Desbordes (1988)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.3967	40.18571	2.0205
0.3966	40.17558	2.0943
0.3991	40.42883	2.366
0.3931	39.82103	2.5417
0.3369	34.12797	2.4848
0.3341	33.84433	2.8271
0.2712	27.47256	3.9545
0.2018	20.44234	4.6872
0.2016	20.42208	5.4102
0.1593	16.13709	5.8025
0.1604	16.24852	6.1898
0.1363	13.80719	6.8355
0.1361	13.78693	8.1196
0.1084	10.98092	7.9906
0.109	11.0417	9.9809

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.1-0.4 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 126: at166b [38, Desbordes (1986)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.1318	13.35134	1.2474
0.1051	10.64663	1.599
0.0795	8.05335	2.1953
0.0787	7.97231	2.4977
0.0662	6.70606	2.8149
0.0607	6.14891	3.0141

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4.1-12.2 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 127: at197a [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.3011	30.50143	6.4775
0.3001	30.40013	5.9911
0.4008	40.60104	4.9956
0.4022	40.74286	3.9915
0.5005	50.70065	3.4943
0.6012	60.90156	2.6945
0.8031	81.35403	1.992
1	101.3	1.4967
1	101.3	1.3979

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.13-1 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 128: at197b [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.7988	80.91844	0.9156
0.7987	80.90831	0.9964
0.4994	50.58922	1.5447
0.4994	50.58922	1.6539
0.4013	40.65169	1.9966
0.4013	40.65169	2.1869
0.3014	30.53182	3.1983
0.3014	30.53182	3.0066
0.2009	20.35117	5.2745
0.2016	20.42208	4.9746
0.2023	20.49299	4.7532

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.13-1 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 129: at197c [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.151	15.2963	5.3588
0.151	15.2963	5.0377
0.2017	20.43221	3.9747
0.2004	20.30052	3.4898
0.2996	30.34948	2.1931
0.2996	30.34948	2.0617
0.4119	41.72547	1.6534
0.4119	41.72547	1.5493
0.5012	50.77156	1.187
0.6001	60.79013	0.9928

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.13-1 kPa	Diluent:	Kr
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 130: at198a [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.5041	51.06533	6.9733
0.5057	51.22741	5.9668
0.7066	71.57858	4.4835
0.7066	71.57858	3.9888
1	101.3	2.9973
1	101.3	2.7997
1	101.3	2.5151

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.13-1 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 131: at198b [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.2517	25.49721	6.9507
0.3023	30.62299	5.9668
0.3004	30.43052	4.9908
0.4012	40.64156	3.9759
0.5025	50.90325	2.9779
0.6416	64.99408	2.1944
0.6457	65.40941	1.9972
0.8036	81.40468	1.6923
1	101.3	1.3526
1	101.3	1.1956

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.13-1 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 132: at198c [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.801	81.1413	0.9968
0.8036	81.40468	1.1956
0.8062	81.66806	1.2471
0.6437	65.20681	1.5007
0.5009	50.74117	1.9972
0.2509	25.41617	3.9759

0.2517	25.49721	4.5274
0.2533	25.65929	4.9263
0.2517	25.49721	4.9908
0.2009	20.35117	5.9862
0.2009	20.35117	6.4295

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	0.13-1 kPa	Diluent:	Kr
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 133: at198d [37, Desbordes (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.1322	13.39186	1.2925

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 134: at166a [42, Edwards (1978)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.0204	2.06652	82.3663
0.0202	2.04626	59.385
0.0265	2.68445	29.6167
0.0266	2.69458	21.7251
0.0392	3.97096	4.9536
0.0532	5.38916	3.5166
0.0533	5.39929	2.9861
0.0634	6.42242	2.9634
0.1049	10.62637	2.0001

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	2-9.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 135: js13c [54, Knystautas (1984)]

Equivalence ratio	Cell width (mm)
3.91251E-1	1.76306E+2
4.60380E-1	1.04478E+2
5.22625E-1	2.73466E+1
5.59340E-1	2.40999E+1
6.10147E-1	1.51259E+1
6.84080E-1	1.08383E+1
7.75798E-1	7.99355E+0
1.02929E+0	5.79998E+0
1.32420E+0	4.56251E+0
1.62349E+0	4.64996E+0
1.91624E+0	5.16611E+0
2.25145E+0	5.26621E+0
2.58430E+0	7.84809E+0
2.78143E+0	8.46729E+0
2.96508E+0	1.16319E+1

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.4 - 3

Table 136: mk7a [56, Knystautas (1982)]

Dilution Ratio	Percent Diluent	Cell Width (mm)
2.5	64.1	3.9
3.375	70.7	7.6
3.76	72.9	10.0
4.125	74.7	11.4

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 137: at148a [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
0.9029	0.1322	13.39186
1.0414	0.1175	11.90275
1.2411	0.1022	10.35286
1.5104	0.0939	9.51207
2.0072	0.0792	8.02296
2.3678	0.066	6.6858
3.3977	0.0522	5.28786
3.9126	0.0517	5.23721
5.0949	0.0395	4.00135
5.618	0.0391	3.96083
10.83	0.0261	2.64393
18.6098	0.0128	1.29664

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.3-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 138: at150a [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
0.7912	0.1079	10.93027
1.0709	0.0966	9.78558
1.2624	0.0821	8.31673
1.5674	0.0669	6.77697
1.98	0.0545	5.52085
3.4445	0.0398	4.03174
5.0852	0.0269	2.72497
6.8256	0.0198	2.00574

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	2-12 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	2.5

Table 139: at150b [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
10.7106	0.009	0.9117

9.8235	0.009	0.9117
8.9322	0.0091	0.92183
7.7101	0.0103	1.04339
9.0828	0.0143	1.44859
7.8413	0.0144	1.45872
7.0695	0.0129	1.30677
6.263	0.0139	1.40807
6.768	0.0171	1.73223
5.4993	0.0186	1.88418
5.3131	0.0165	1.67145
5.3135	0.0155	1.57015
5.4537	0.0144	1.45872
6.263	0.014	1.4182
7.0695	0.013	1.3169
4.2439	0.0154	1.56002
4.0984	0.0197	1.99561
3.9247	0.021	2.1273
3.7583	0.0224	2.26912
3.001	0.0273	2.76549
3.053	0.0297	3.00861
2.2552	0.0381	3.85953
2.1224	0.0429	4.34577
2.3747	0.0452	4.57876
2.1591	0.0488	4.94344
1.8162	0.0492	4.98396
1.7849	0.0522	5.28786
1.4627	0.0658	6.66554
1.2093	0.0675	6.83775

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	2-12 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	2.5

Table 140: at151 [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
2.0551	0.157	15.9041
2.7101	0.1441	14.59733
3.0588	0.13	13.169
3.2497	0.1193	12.08509
3.7968	0.1031	10.44403
4.3601	0.0891	9.02583
4.7129	0.0777	7.87101
5.3193	0.0649	6.57437
6.1615	0.0537	5.43981
10.8079	0.0405	4.10265
17.8448	0.0275	2.78575

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	2.7-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.625

Table 141: at199c [62, Laberge (1993)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
0.9138	0.1329	13.46277
1.0985	0.1185	12.00405
1.2882	0.105	10.6365
1.5114	0.0984	9.96792
1.5483	0.0912	9.23856
2.016	0.0787	7.97231

2.1414	0.0655	6.63515
2.4075	0.0659	6.67567
3.7923	0.0523	5.29799
4.2545	0.0388	3.93044
5.4434	0.0385	3.90005
5.2	0.032	3.2416
6.9026	0.0257	2.60341
10.5391	0.0193	1.95509
19.2243	0.0129	1.30677

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.3-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 142: at199d [62, Laberge (1993)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
6.7631	0.0194	1.96522
5.2964	0.026	2.6338
3.3874	0.0394	3.99122
2.0226	0.0519	5.25747
1.6031	0.0665	6.73645
1.3097	0.079	8.0027
1.1034	0.0932	9.44116
0.8369	0.1046	10.59598
0.6967	0.1315	13.32095

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.3-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	2.5

Table 143: at86a [70, Lee (1982)]

Dilution ratio	Percent diluent	Cell width (mm)
2.329000	62.456423	3.943892
3.138820	69.154979	7.211815
3.871630	73.442749	12.228000

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 144: at57f [79, Manzhalei (1974)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.054868	5.559500	8.862700
0.049684	5.034231	7.831100
0.049564	5.022072	5.319000
0.060364	6.116382	5.461500
0.060328	6.112735	4.958100
0.048809	4.945572	4.323800
0.094240	9.548868	2.547700
0.105460	10.685735	2.511100
0.099550	10.086904	2.013800
0.100870	10.220653	1.753800
0.220980	22.390799	0.977090
0.240490	24.367649	1.003900
0.206010	20.873963	1.004900

0.402530	40.786352	0.419150
0.402290	40.762034	0.380520
0.497100	50.368658	0.418620
0.503800	51.047535	0.374790
0.604170	61.217525	0.308540
1.013000	102.642225	0.169810
2.066500	209.388113	0.081303
3.015600	305.555670	0.059858

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	5.1-304 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 145: at57c-mk [79, Manzhalei (1974)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
6.053270	613.347583	0.020574
6.058480	613.875486	0.023621
5.978980	605.820149	0.027123
4.092960	414.719172	0.031212
2.580380	261.457004	0.050065
2.546530	258.027152	0.057486
2.274100	230.423183	0.052223
2.033600	206.054520	0.059177
1.558760	157.941357	0.073934
0.996120	100.931859	0.109147
0.593228	60.108827	0.156805
0.395545	40.078597	0.241222
0.204824	20.753792	0.398228
0.100407	10.173739	0.831744
0.059961	6.075528	1.859230
0.051364	5.204467	1.860960
0.039360	3.988193	2.230640

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4-614 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	2.5

Table 146: mk157n [84, Moen (1984)]

Equivalence Ratio	Cell Width (mm)
0.5036	139.8360
0.5418	82.5749
0.5707	67.7872
0.6131	54.5894

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.5-0.61

Table 147: mk6 [91, Murray (1986)]

Dilution Ratio	Percent Diluent	Cell Width (mm)
3.5080	71.4753	8.7794
3.4876	71.3559	10.8280
4.0016	74.0819	11.3005
3.9693	73.9257	12.2564
4.2446	75.1973	11.0802

4.2428	75.1895	11.8834
4.2707	75.3117	13.0516
4.2532	75.2353	14.3248
4.4825	76.2004	13.2468
4.4955	76.2532	14.3770
4.4911	76.2354	17.1259
4.7052	77.0688	15.8335
4.7014	77.0544	18.4259
4.8674	77.6622	18.9080
4.8653	77.6548	20.5166
4.9755	78.0409	17.4533
4.9880	78.0838	19.3895
4.9850	78.0737	21.7883
5.3651	79.3057	20.6710
5.3622	79.2966	23.2283
5.4959	79.6979	25.8522
5.4932	79.6901	28.7136
5.6930	80.2623	25.6280
5.6916	80.2582	27.1671
5.9776	81.0235	29.2625
5.9898	81.0549	32.8902
5.9868	81.0473	36.9593
6.1284	81.4038	30.0213
6.2286	81.6479	37.9694
6.3536	81.9438	32.6866
6.4887	82.2531	34.3178
6.4846	82.2438	40.4054
6.2250	81.6394	43.6738
6.2372	81.6687	49.0881
6.3759	81.9956	44.8063
6.3590	81.9563	48.0435
6.4801	82.2338	48.1309
6.4775	82.2278	53.4582
6.4739	82.2198	61.4897

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 148: at184b [97, Pedley (1988)]

1.3349e-002	1.9248e+001
2.6399e-002	1.1399e+001
3.9004e-002	5.3849e+000
5.2394e-002	3.6307e+000
6.5808e-002	2.7195e+000
7.9421e-002	2.0365e+000
9.4553e-002	1.6075e+000
1.0528e-001	1.3550e+000
1.1723e-001	1.1421e+000

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.3-13 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 149: at129c [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.1131	11.45703	2.6642
0.0824	8.34712	4.4956
0.0606	6.13878	3.5456

0.0468	4.74084	5.9878
0.0346	3.50498	9.3883
0.0272	2.75536	9.5897
0.0217	2.19821	10.8072
0.0149	1.50937	13.4084
0.0135	1.36755	14.2377

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.5-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 150: at129e [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.0137	1.38781	44.5711
0.0203	2.05639	41.1278
0.0203	2.05639	17.856
0.0276	2.79588	19.5412
0.0271	2.74523	12.7157
0.0408	4.13304	10.2539
0.0399	4.04187	9.179
0.04	4.052	8.1193
0.0669	6.77697	6.4773
0.0656	6.64528	4.9436
0.0997	10.09961	4.5632
0.0919	9.30947	3.9825
0.1101	11.15313	3.4459
0.113	11.4469	2.9389
0.1118	11.32534	2.6638
0.1453	14.71889	2.7065
0.172	17.4236	2.3996

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.5-18.2 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.625

Table 151: at129f [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.2026	20.52338	7.7152
0.2338	23.68394	7.7306
0.2537	25.69981	8.8576
0.2731	27.66503	7.5595
0.2976	30.14688	6.3739
0.2986	30.24818	4.9264
0.325	32.9225	4.4711
0.3617	36.64021	4.6456
0.398	40.3174	4.539

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	20.3-40.5 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 152: at69a [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.085	8.6105	50.1278
0.1	10.13	35.8245

0.11	11.143	25.0756
0.125	12.6625	23.4747
0.143	14.4859	18.0207
0.149	15.0937	16.1988
0.155	15.7015	15.6561
0.161	16.3093	15.4084
0.192	19.4496	11.6413
0.195	19.7535	9.0408
0.21	21.273	9.5831
0.225	22.7925	11.3251
0.258	26.1354	7.3852
0.269	27.2497	7.0112
0.32	32.416	4.4178
0.384	38.8992	4.1498

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	6.1-40.5 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 153: at69b [110, Strehlow (1967)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.065	6.5845	21.4495
0.0776	7.86088	15.3478
0.1	10.13	9.7036
0.104	10.5352	8.5762
0.129	13.0677	5.823
0.26	26.338	2.5814
0.241	24.4133	1.789

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	6.1-40.5 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 154: at172a [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
298.15	5.3
373.15	4.0

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.325 kPa	Diluent:	
Initial Temperature:	298-373 K	Equivalence Ratio:	1

Table 155: mk8b [125, Voitsekhovskii (1966)]

Initial Pressure (torr)	Initial Pressure (kPa)	Cell Width (mm)
19.0034	2.533578296	7.29432
38.8245	5.176174293	3.05618
49.3782	6.583218572	3.38581
97.4235	12.98873176	1.2789
137.348	18.31156066	1.46585
245.317	32.70624345	0.9641
236.426	31.52087428	0.614794
422.883	56.37976313	0.515256
681.249	90.82573016	0.31641
727.787	97.03028655	0.20875

Category:	cell size	Fuel:	C2H2
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	3.0-133 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

3.1.4 Cell Width - C2H4 Fuel

Table 156: at192b [1, Abid (1991)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.0143	1.44859	49.7957
0.0328	3.32264	19.8679
0.0794	8.04322	7.0534
0.1056	10.69728	5.1036
0.1331	13.48303	4.0436

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.2-14 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 157: at157e [27, Bull (1982)]

Equivalence Ratio	Cell Width (mm)
1.0000	24.0000

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 158: ja10a [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
30	9.3
31.5	7.8
35	6.5
40	5.8
45	5.3
50	5.5
55	7.5
80	5

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	30-80 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 159: ja10b [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
30	5
70	3

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	30-70 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 160: ja10c [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
60	10
80	8.5

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	60-80 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 161: ja10d [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
50	21
90	13

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50-90 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 162: ja10e [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
50	36
100	24

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50-100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 163: ja11b [39, EDL (unpublished)]

Percent N2	Cell Width (mm)
0	0.8
69.2	21
73.8	36

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 164: ja12 [39, EDL (unpublished)]

50	1.5
75	2.5
83.3	4.5
88.2	11

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 165: ja11a [53, Kaneshige (1999)]

Percent N2	Cell Width (mm)
38.5	2.8
50	4.3
52.9	5.8
55.6	5.5
55.6	5.3
57.9	7.5
60	8.5
63.6	10.5

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	45-50 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 166: at13b [54, Knystautas (1984)]

Equivalence Ratio	Cell Width (mm)
0.5127	324.5910
0.5500	204.7480
0.5928	116.5050
0.6917	81.1087
0.7300	61.1815
0.8332	53.3225
0.8900	37.3253
1.0010	25.6899
1.0687	20.8893
1.2357	24.2931
1.4141	30.4504
1.5811	35.4120
1.7578	55.2469
1.9485	66.5194
2.1316	98.5402

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.5 - 2.2

Table 167: mk7c [56, Knystautas (1982)]

Percent N2	Cell Size
50.77	3.6
56.76	7.0
65.22	12.0
73.82	29.0

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 168: at149a [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
3.51	0.15	14.95
3.95	0.13	13.28
4.71	0.12	12.32
5.25	0.11	10.82

6.53	0.09	9.40
8.12	0.08	8.00
9.56	0.07	6.73
10.21	0.07	6.80
12.56	0.05	5.31
14.16	0.05	5.31
18.00	0.04	4.10
19.21	0.04	3.97
26.66	0.03	2.63
35.03	0.02	2.01
48.61	0.01	1.33

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	1.3-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 169: at157c [84, Moen (1984)]

Equivalence Ratio	Cell Width (mm)
0.8531	31.9625
0.6786	85.5709
0.6450	89.2586
0.5848	84.4957
0.6331	95.3150
0.5578	95.2357
0.5795	95.2586
0.6063	94.9188
0.6229	104.5790
0.5641	115.1260
0.6041	122.5330
0.5554	133.3490

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.55-1.1

Table 170: at157f [84, Moen (1984)]

Equivalence Ratio	Cell Width (mm)
1.0000	33.8077

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 171: mk157g [84, Moen (1984)]

Equivalence Ratio	Cell Width (mm)
5.15558E-1	2.42544E+2
6.14876E-1	9.91807E+1
7.11702E-1	5.57341E+1

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.5-.7

Table 172: at203 [85, Moen (1982)]

Percent C2H4	Equivalence Ratio	Cell Width (mm)
7.289580	1.122799	23.875900
6.904930	1.059158	29.563000
6.485050	0.990286	22.708000
6.559490	1.002451	21.237700
6.279060	0.956723	23.943800
6.569850	1.004145	26.872800
6.130180	0.932557	27.374100
6.026210	0.915726	29.662100
6.254000	0.952650	42.396200
5.687820	0.861204	32.329100
5.078860	0.764067	51.636600
4.968760	0.746638	78.306100
3.948810	0.587072	131.774000

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.6-1.1

Table 173: at158 [90, Murray (1984)]

Percent C2H4	Equivalence Ratio	Cell Width (mm)
6.974550	1.070638	20.937200
6.541670	0.999537	25.888900
5.985740	0.909185	37.052700
4.981130	0.748594	61.534800
4.529600	0.677516	81.713600
4.007100	0.596100	121.702000
3.764300	0.558568	209.355000

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.5-1.1

Table 174: at128b [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.0415	4.20395	8.3814
0.0524	5.30812	5.6023
0.0665	6.73645	6.0556
0.0993	10.05909	3.5444
0.1339	13.56407	3.5181
0.134	13.5742	3.2674
0.1622	16.43086	3.3182
0.1625	16.46125	2.8977
0.1128	11.42664	4.7154

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4.1-15.2 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 175: at128c [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.33	33.429	2.2353
0.2993	30.31909	2.5557

0.2649	26.83437	3.0308
0.2265	22.94445	3.3776
0.1959	19.84467	3.8588
0.1958	19.83454	4.0041
0.1334	13.51342	4.4458
0.1349	13.66537	4.6713
0.1036	10.49468	5.1331
0.1009	10.22117	6.3264
0.0718	7.27334	9.4481
0.0396	4.01148	17.541

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4.1-35.5 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 176: at128d [108, Strehlow (1969)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Width (mm)
0.1111	11.25443	12.3257
0.1126	11.40638	11.5917
0.1194	12.09522	12.493
0.1364	13.81732	11.0687
0.1349	13.66537	10.2781
0.1352	13.69576	8.7572
0.1681	17.02853	7.3958
0.1966	19.91558	6.7186
0.1969	19.94597	6.0881
0.266	26.9458	5.0856
0.2664	26.98632	4.6083
0.3314	33.57082	3.6594
0.3974	40.25662	3.0887
0.4599	46.58787	2.5736
0.5378	54.47914	2.338
0.6146	62.25898	2.021
0.6691	67.77983	1.8566

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	12.2-70.9 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 177: at172d [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
298.15	19.5
373.15	16.0

Category:	cell size	Fuel:	C2H4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	298-373 K	Equivalence Ratio:	1

3.1.5 Cell Width - Miscellaneous Fuel

Table 178: ja16a [3, Akbar (1997)]

Percent N2	Cell Width (mm)
0	24.5
10.3	30
18.6	36.5

22.2	60
25.5	50.5
36.4	102

Category:	cell size	Fuel:	NH3
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	66-81 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 179: ja16b [3, Akbar (1997)]

Percent N2	Cell Width (mm)
0	11
16.7	14
28.6	24.5
37.5	45

Category:	cell size	Fuel:	NH3
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	55-75 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 180: ja16c [3, Akbar (1997)]

Percent Air	Cell Width (mm)
0	11
16.0	13.5
32.2	25.5
48.8	46.5
53.3	65.5

Category:	cell size	Fuel:	NH3
Sub-Category:	width	Oxidizer:	N2O
Initial Pressure:	60-91 kPa	Diluent:	Air
Initial Temperature:	293 K	Equivalence Ratio:	1-0.71

Table 181: at157j [27, Bull (1982)]

Equivalence Ratio	Cell Width (mm)
1.0	54.0

Category:	cell size	Fuel:	C2H6
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 182: at157m [27, Bull (1982)]

Equivalence Ratio	Cell Width (mm)
1.0	46.0

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 183: ja8b [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
30	15
70	7

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	30-70 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 184: ja8c [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width
40	30
80	15.5

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	40-80 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 185: ja8d [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width
50	45
90	29.5

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50-90 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 186: ja8e [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
50	78
100	52

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50-100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 187: ja13 [39, EDL (unpublished)]

Percent N2	Cell Width (mm)
0	1.7
40.4	6.3
57.6	16.0
67.1	30.4
73.1	50.5
77.3	91.7

Category:	cell size	Fuel:	C6H14
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	40 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 188: ja14a [39, EDL (unpublished)]

Percent H2	Cell Width (mm)
0	51.1
0.11	39.2
0.24	43.2
0.53	42.7
0.90	39.5
1.4	38.3
2.0	34.9
11.7	27.3
17.2	21.9
23.1	13.5
26.0	10.1

Category:	cell size	Fuel:	C6H14
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 189: ja14b [39, EDL (unpublished)]

Percent C2H4	Cell Width (mm)
0	51.1
0.23	46.4
0.5	35.5
0.81	37.7
1.2	35.8
1.6	36.4
2.8	24.7
3.7	24.7
4.9	20.6
5.6	19.2
6.2	17.0

Category:	cell size	Fuel:	C6H14
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	C2H4
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 190: ja14c [39, EDL (unpublished)]

Percent C2H2	Cell Width (mm)
0	51.1
0.23	36.8
0.83	31.4
1.7	32.2
3.1	20.7
4.1	14.1
5.5	10.7
6.5	8.4

Category:	cell size	Fuel:	C6H14
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	C2H2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 191: ja14d [39, EDL (unpublished)]

Percent CO	Cell Width (mm)
0	51.1

0.24	35.1
0.9	36.9
2.0	34.3
4.3	36.7
11.7	40.0
17.2	43.1
23.1	52.2
24.5	58.3
25.4	61.8
26.6	69.7
27.7	89.4
28.6	112.0

Category:	cell size	Fuel:	C6H14
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	CO
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 192: ja15a [39, EDL (unpublished)]

Percent H2	Cell Width (mm)
0.54	100.3
1.45	48.4
2.9	32
8.69	16.9

Category:	cell size	Fuel:	CO
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	H2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 193: ja15b [39, EDL (unpublished)]

Percent C2H2	Cell Width (mm)
0.29	90.5
0.56	49.5
1.3	29.9
3.71	10.9

Category:	cell size	Fuel:	CO
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	C2H2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 194: ja15c [39, EDL (unpublished)]

Percent C2H4	Cell Width (mm)
0.28	71.8
0.28	89.7
0.54	54.3
0.79	43.8
1.23	36.2
2.14	33.8
4.23	25.2

Category:	cell size	Fuel:	CO
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	C2H4
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 195: ja17 [39, EDL (unpublished)]

Initial Pressure (kPa)	Cell Width (mm)
7.63	16.5
13.07	10.5
23.79	6.5
23.12	5.5
44.06	3.5

Category:	cell size	Fuel:	C3H6O
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	7.6-23.8 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 196: ja18a [39, EDL (unpublished)]

Percent N2	Cell Width (mm)
0	5.5
16.7	9.5
28.6	14
37.5	17
44.4	22.5
50	32.5
58.3	51
61.5	74
64.3	103.5

Category:	cell size	Fuel:	C3H6O
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	22.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 197: ja18b [39, EDL (unpublished)]

Percent Ar	Cell Width (mm)
0	5.5
16.7	6
28.6	9
37.5	10
44.4	11.5
50	11.5
58.3	12.5
64.3	13.5
68.8	15
76.2	14.5
83.3	17.5
88.9	45.5
91.7	158

Category:	cell size	Fuel:	C3H6O
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	22.5 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 198: ja8a [53, Kaneshige (1999)]

Initial Pressure (kPa)	Cell Width (mm)
15	5.5
25	3.8
35	3
50	2.5

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	15-50 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 199: ja9 [53, Kaneshige (1999)]

Percent Ar	Cell Width (mm)
40	4
70	5.5
80.6	7
84.0	10.5

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	50 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 200: at13f [54, Knystautas (1984)]

Equivalence ratio	Cell width (mm)
7.2191e-001	1.6869e+002
8.0885e-001	1.0469e+002
1.0088e+000	7.5067e+001
1.2842e+000	8.0562e+001
1.4614e+000	1.2416e+002

Category:	cell size	Fuel:	C4H10
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.7 - 1.5

Table 201: at13e [54, Knystautas (1984)]

Equivalence ratio	Cell width (mm)
6.0796e-001	4.4071e+002
6.8736e-001	3.5026e+002
7.5648e-001	2.1118e+002
8.2044e-001	1.1154e+002
8.4540e-001	9.5500e+001
9.3816e-001	6.0997e+001
1.0470e+000	5.2857e+001
1.2780e+000	8.3870e+001
1.3899e+000	1.1583e+002
1.5384e+000	1.4678e+002
1.6603e+000	2.7820e+002

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.6 - 1.7

Table 202: at13d [54, Knystautas (1984)]

Equivalence ratio	Cell width (mm)
7.8913e-001	1.3797e+002
9.9325e-001	5.1048e+001
1.2716e+000	8.9862e+001

Category:	cell size	Fuel:	C2H6
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.8 - 1.3

Table 203: mk7d [56, Knystautas (1982)]

43.86	4.0
53.40	7.3
59.32	11.6
63.91	16.0
65.22	22.4
67.57	24.2
69.62	30.4
71.43	32.0
73.03	38.5
74.47	47.8

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 204: at154b [56, Knystautas (1982)]

Cell Width	Initial Pressure (atm)	Initial Pressure (kPa)
9.1048	0.1341	13.58433
10.053	0.1204	12.19652
13.205	0.10952	11.09438
15.401	0.095234	9.647204
20.033	0.079386	8.041802
35.314	0.067158	6.803105

Category:	cell size	Fuel:	C4H10
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	6.7-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 205: at152 [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
66.232	0.040021	4.054127
41.916	0.053083	5.377308
25.685	0.065921	6.677797
15.74	0.080092	8.11332
13.364	0.093285	9.449771
12.378	0.10634	10.77224
10.86	0.11988	12.14384
9.2224	0.13364	13.53773
7.6644	0.14574	14.76346

Category:	cell size	Fuel:	C2H6
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 206: at153 [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
18.567	0.039613	4.012797

16.244	0.052445	5.312679
12.35	0.066365	6.722775
11.421	0.079739	8.077561
9.1758	0.093585	9.480161
7.3759	0.10517	10.65372
6.4664	0.11831	11.9848
5.6132	0.12334	12.49434

Category:	cell size	Fuel:	C3H6
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	4-12 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 207: at154a [56, Knystautas (1982)]

Cell Width (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
57.602	0.027044	2.739557
44.651	0.039914	4.043288
27.881	0.054431	5.51386
18.808	0.067356	6.823163
15.099	0.081733	8.279553
12.394	0.094973	9.620765
8.2548	0.13688	13.86594

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	2.7-13.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 208: ja19 [57, Knystautas (1998)]

Percent H2	Cell Width (mm)
0	67
0.67	64.5
1.73	62
3.6	41.5
7.96	25.5
13.4	25

Category:	cell size	Fuel:	C6H6
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	H2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 209: at37 [61, Kumar (1990)]

Percent Diluent	Cell Width
24.9981	2.0040
39.9939	2.3317
54.8618	4.1123
69.5291	6.9922
78.4497	12.9501
81.2831	19.9401

Category:	cell size	Fuel:	Deuterium
Sub-Category:	width	Oxidizer:	O2
Initial Pressure:	106.6 kPa	Diluent:	He
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 210: at157h [84, Moen (1984)]

Equivalence Ratio	Cell Width (mm)
1.0313	66.137
1.0958	51.053
1.2043	63.528
1.2900	60.948

Category:	cell size	Fuel:	C2H6
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.0-1.3

Table 211: at157k [84, Moen (1984)]

Equivalence Ratio	Cell Width (mm)
1.292500	72.287300
1.163440	75.302200
1.086410	75.221900
0.817039	130.977000
0.741282	152.789000

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	92.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.75-1.62

Table 212: mk184d [97, Pedley (1988)]

Initial Pressure (kPa)	Cell Width (mm)
0.6692	263.4860
1.3448	124.7830
2.6320	55.3177

Category:	cell size	Fuel:	N2H4
Sub-Category:	width	Oxidizer:	
Initial Pressure:	.7-2.6 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	

Table 213: mk168a [103, Shepherd (1986)]

H2S Mole Fraction	Cell Width (mm)
0.095	277.5
0.1095	175.0
0.126	115.0
0.142	110.0
0.126	102.5

Category:	cell size	Fuel:	H2S
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.78-1.18

Table 214: mk168b [103, Shepherd (1986)]

H2S Mole Fraction	Cell Width (mm)
0.95	357.5
0.21	359.5

Category:	cell size	Fuel:	H2S
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.78-1.18

Table 215: at172b [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	42.0

Category:	cell size	Fuel:	n-octane, C8H18
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 216: at171b [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
298.15	50.0
373.15	48.0

Category:	cell size	Fuel:	C2H6
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	298-373 K	Equivalence Ratio:	1

Table 217: at172c [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	27.0

Category:	cell size	Fuel:	1-Octene
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 218: at172e [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	21.0

Category:	cell size	Fuel:	1,7-Octadiene
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 219: at172f [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	23.0

Category:	cell size	Fuel:	Octyne
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 220: at172g [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	21.0

Category:	cell size	Fuel:	1,7-Octadiyne
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 221: at172h [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
298.15	50.0
373.15	52.0

Category:	cell size	Fuel:	C3H8
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	298, 373 K	Equivalence Ratio:	1

Table 222: at172i [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	55.0

Category:	cell size	Fuel:	C6H14
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 223: at172j [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	46.0

Category:	cell size	Fuel:	JP4
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 224: at172k [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	42.0

Category:	cell size	Fuel:	C10H22
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 225: at170a [114, Tieszen (1991)]

Equivalence Ratio	Cell Width (mm)
0.400388	112.711000
0.459779	36.469600
0.718531	16.254000
0.961107	11.195400
1.998910	20.233100

Category:	cell size	Fuel:	Hexylnitrate
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	.4-2

Table 226: at170b [114, Tieszen (1991)]

Equivalence Ratio	Cell Width (mm)
0.725487	22.075900

Category:	cell size	Fuel:	Nitrohexane
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	0.7

Table 227: at170c [114, Tieszen (1991)]

Equivalence Ratio	Cell Width (mm)
0.346336	95.433400
0.649088	11.989700
0.671874	10.029100
1.001040	6.958500

Category:	cell size	Fuel:	Nitroethane
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	.35-1.0

Table 228: at172l [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	56.0

Category:	cell size	Fuel:	2,2,4-Trimethylpentane
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 229: at172m [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	29.0

Category:	cell size	Fuel:	Cyclooctane, C8H18
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 230: at172n [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	29.0

Category:	cell size	Fuel:	Cis-Cyclooctene
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 231: at172o [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	26.0

Category:	cell size	Fuel:	Pentyl Ether
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

Table 232: at172p [114, Tieszen (1991)]

Initial Temperature (K)	Cell Width (mm)
373.15	24.0

Category:	cell size	Fuel:	1,2-Epoxydecane
Sub-Category:	width	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	373 K	Equivalence Ratio:	1

3.1.6 Cell Length - H2 Fuel

Table 233: mk2 [27, Bull (1982)]

Initial Pressure (kPa)	Cell Width
6.92	154.00
6.43	146.00
7.89	112.00
9.39	67.10
10.80	64.00
11.10	60.80
12.10	46.90
16.50	41.20
19.90	34.40
22.40	33.20
29.40	24.90
35.80	21.30
47.10	20.00
57.60	18.40
96.30	15.40

Category:	cell size	Fuel:	H2
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	8.1 - 101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 234: at189 [71, Lefebvre (1993)]

Percent CF3H	Cell Length
25.3244	27.6822
20.2354	13.1712
15.1535	10.9794
10.0151	6.1703
7.4964	7.5638
4.9842	7.6808
2.5340	9.3299
0.0857	10.5961

Category:	cell size	Fuel:	H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	26.7 kPa	Diluent:	Ar+CF3H
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 235: at70a [94, Nzeyimana (1991)]

Percent CF4	Cell Length
0.1254	12.0541
10.1072	13.7950
15.2593	16.4626
17.2638	21.8878
18.2300	24.8360
19.2096	28.4263

Category:	cell size	Fuel:	H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	26.7 kPa	Diluent:	Ar+CF4
Initial Temperature:	293 K	Equivalence Ratio:	0.8

Table 236: at70b [94, Nzeyimana (1991)]

Percent CF4	Cell Length
0.1740	14.3654
2.1149	12.8561
3.0876	12.2084
4.9759	12.1120
7.6022	11.9258
10.1831	13.4950
15.1059	13.0816
20.2190	17.8041
25.1736	30.6183

Category:	cell size	Fuel:	H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	26.7 kPa	Diluent:	Ar+CF4
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 237: at70c [94, Nzeyimana (1991)]

Percent CF4	Cell Length
0.1515	13.2954
5.0824	13.2672
10.1226	14.5227
15.1825	16.7198
16.1459	19.5397
18.2113	20.0416
19.1338	28.7264

Category:	cell size	Fuel:	H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	26.7 kPa	Diluent:	Ar+CF4
Initial Temperature:	293 K	Equivalence Ratio:	1.2

3.1.7 Cell Length - Miscellaneous Fuel

Table 238: at193a [4, Aminallah (1993)]

Equivalence Ratio	Cell Length (mm)
7.55708E-1	5.72348E+0

7.52803E-1	5.38202E+0
8.61421E-1	5.04245E+0
8.61261E-1	4.41187E+0
1.00676E+0	3.59252E+0
1.00465E+0	3.50308E+0
1.00402E+0	3.30507E+0
1.00500E+0	3.03451E+0
1.00260E+0	2.85506E+0
1.09295E+0	3.09766E+0
1.20115E+0	3.78523E+0
1.20189E+0	4.01924E+0
1.27472E+0	3.92486E+0
1.27248E+0	4.37600E+0
1.27488E+0	4.55544E+0
1.33600E+0	4.80699E+0

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	120 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.7-1.3

Table 239: at194c [4, Aminallah (1993)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.7893	79.9598	5.5299
0.7896	79.9875	5.0108
0.9824	99.5134	3.7809
1.1833	119.8653	2.9595

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	90-120 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 240: at194a [10, Bauer (1985)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length
1.0000	101.3	4.8125

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 241: mk1a [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
5.49	45.98	4598.06
6.61	32.92	3292.26
7.97	20.76	2076.01
12.50	11.28	1128.04
21.00	8.09	809.042
18.76	5.33	533.486
42.96	3.79	378.815
40.60	3.15	314.801
44.03	2.74	274.165

Category:	cell size	Fuel:	C3H8
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	270-4600 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.13

Table 242: mk1b [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
12.37	9.16	916.226
18.99	4.64	464.461
19.23	3.77	377.29
39.70	2.77	277.207

Category:	cell size	Fuel:	C3H8
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	270-900 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.31

Table 243: mk1c [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
2.52	45.27	4527.48
3.21	29.22	2922.48
6.19	19.57	1957.03
9.94	9.92	992.301

Category:	cell size	Fuel:	C3H8
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	1000-4500 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.41

Table 244: mk1d [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
6.75	52.87	5287.18

Category:	cell size	Fuel:	C3H8
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	5300 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.61

Table 245: mk3a [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
11.65	9.94	994.447
17.37	5.42	542.188
35.88	3.02	301.625

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	300-1000 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	0.8

Table 246: mk3b [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
7.64	8.60	860.013
13.90	3.02	302.274
43.77	1.58	157.795

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	150-900 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.13

Table 247: mk3c [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
4.42	9.76	976.037
12.38	3.06	305.528

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	300-1000 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.13

Table 248: mk3d [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
5.34	11.41	1141.05
11.52	6.15	615.144
22.10	3.08	308.329
43.34	2.01	200.637

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	200-1100 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	1.61

Table 249: mk4a [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
1.1246	2.0200	202.001
1.8705	1.0120	101.198
2.9331	0.4942	49.4165

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	50-200 kPa	Diluent:	N2
Initial Temperature:	K	Equivalence Ratio:	1.01

Table 250: mk4b [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
10.1486	3.9590	395.9
11.9426	3.0208	302.082
20.5593	1.5891	158.91
31.9776	1.0338	103.377
38.6566	0.7088	70.8833

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	70-400 kPa	Diluent:	N2
Initial Temperature:	K	Equivalence Ratio:	1.05

Table 251: mk4c [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
11.1059	5.8284	582.837
14.5586	4.2560	425.599
21.5671	2.7679	276.793
37.4795	1.5120	151.204

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	150-600 kPa	Diluent:	N2
Initial Temperature:	K	Equivalence Ratio:	1.05

Table 252: mk4d [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
11.7219	8.8598	885.984
15.8939	7.1204	712.037
22.1383	5.1423	514.233
33.5766	3.5067	350.671

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	350-900 kPa	Diluent:	N2
Initial Temperature:	K	Equivalence Ratio:	1.05

Table 253: mk5a [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
7.5517	2.3263	232.632
8.9346	1.4680	146.796
20.4418	0.9205	92.0528
47.8244	0.5525	55.2505

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	50-230 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.08

Table 254: mk5b [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
9.8601	7.1511	715.108
10.0991	5.4339	543.393
19.1384	4.2395	423.952
37.0888	3.1313	313.128

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	300-700 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.09

Table 255: mk5c [12, Bauer (1986)]

Cell Length (mm)	Initial Pressure (bar)	Initial Pressure (kPa)
17.7920	11.2697	1126.97
18.2232	8.5636	856.355
38.9810	6.4701	647.013

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	650-1100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.15

Table 256: at194b [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length

1.0000	101.3	4.5

Category:	cell size	Fuel:	CH4
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 257: at93a [22, Bull (1982)]

5.9000e-001	3.3500e+001
1.0005e+000	1.9835e+001
1.2376e+000	1.7276e+001
1.6070e+000	1.9056e+001
2.0206e+000	3.7281e+001

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	33.8 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	0.5-2

Table 258: at93b [22, Bull (1982)]

5.1094e-001	3.6864e+001
5.8832e-001	3.3964e+001
5.3857e-001	2.3760e+001
7.3935e-001	1.2248e+001
9.9352e-001	8.8068e+000
1.1438e+000	8.6248e+000
1.4936e+000	1.2795e+001
1.7461e+000	1.0290e+001
2.0076e+000	2.3703e+001
2.0988e+000	2.4811e+001

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	67.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	0.5-2

Table 259: at139a [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.039254	3.97643	43.533
0.052773	5.345905	30.258
0.065814	6.666958	22.979
0.079059	8.008677	18.029
0.097831	9.91028	11.614
0.13131	13.3017	9.6509
0.16143	16.35286	7.6091
0.16159	16.36907	6.8296
0.22742	23.03765	5.1199
0.32389	32.81006	4.7873
0.32711	33.13624	4.483

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	3-30 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 260: at139e [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.59096	59.879	129.16
0.80758	81.828	114.64
0.95229	96.49	89.506

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	60.8-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 261: at139b [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.44808	45.3905	13.954
0.25776	26.11109	23.718
0.25749	26.08374	26.549
0.12981	13.14975	33.523
0.16259	16.47037	43.706
0.1099	11.13287	51.572
0.083276	8.435859	74.559

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	10-40.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 262: at139c [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.12928	13.09606	86.61
0.16257	16.46834	73.288
0.19501	19.75451	67.459
0.22748	23.04372	62.078
0.25983	26.32078	45.155
0.31293	31.69981	44.392
0.39012	39.51916	35.004
0.45989	46.58686	28.243

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	10-40.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 263: at139d [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.40737	41.277	81.976

Category:	cell size	Fuel:	C2H6
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	40.5 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 264: at140a [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.0794	8.04322	132.466
0.1	10.13	51.0709
0.166	16.8158	41.4166

0.1993	20.18909	43.6141
0.2999	30.37987	25.9772
0.3956	40.07428	22.6942
0.5005	50.70065	13.4503
0.6067	61.45871	11.3177
0.9471	95.94123	12.0351
0.9516	96.39708	11.0641

Category:	cell size	Fuel:	C2H2
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	8.1-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 265: at140b [27, Bull (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Cell Length (mm)
0.2956	29.94428	65.7194
0.3898	39.48674	62.1885
0.4181	42.35353	60.7654
0.4975	50.39675	50.4311
0.5947	60.24311	40.5077
0.9543	96.67059	39.6305

Category:	cell size	Fuel:	C2H4
Sub-Category:	length	Oxidizer:	Air
Initial Pressure:	30.4-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 266: at169e [72, Libouton (1975)]

Initial Pressure	Cell Length
21.64781	290.388
23.83589	165.49
26.44943	125.596
33.13523	113.639

Category:	cell size	Fuel:	18.46CO+H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	22.7-33.3 kPa	Diluent:	11.88Ar+CF3Br
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 267: at169a [72, Libouton (1975)]

Initial Pressure	Cell Length
4.01148	320.761
7.04035	170.086
10.34273	116.045
13.19939	88.2994
19.91558	49.5301
26.52034	38.0767
33.11497	28.6468
39.80077	21.7487

Category:	cell size	Fuel:	18.46CO+H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	4.7-40 kPa	Diluent:	Ar
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 268: at169d [72, Libouton (1975)]

Initial Pressure	Cell Length
12.77393	319.991
19.8548	121.873
26.5406	115.986
33.14536	110.604
39.65895	103.195

Category:	cell size	Fuel:	18.46CO+H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	13.3-40 kPa	Diluent:	11.88Ar+CFCl3
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 269: at169c [72, Libouton (1975)]

Initial Pressure	Cell Length
9.33986	335.579
13.13861	175.313
19.8548	117.826
26.38865	92.2048
28.14114	90.7355
33.07445	80.7537

Category:	cell size	Fuel:	18.46CO+H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	8-33.3 kPa	Diluent:	11.88Ar+CF2Cl2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 270: at169b [72, Libouton (1975)]

Initial Pressure	Cell Length
9.7248	165.1
13.00692	125.731
19.81428	67.234
26.51021	47.6886

Category:	cell size	Fuel:	18.46CO+H2
Sub-Category:	length	Oxidizer:	O2
Initial Pressure:	9.3-26.7 kPa	Diluent:	11.88Ar+CF3Cl
Initial Temperature:	293 K	Equivalence Ratio:	1

3.1.8 Cell Size - Unsorted

3.2 Critical Tube Diameter

3.2.1 H2 Fuel

Table 271: mk23a [48, Guirao (1982)]

Percent H2	Equivalence Ratio	Critical Diameter
1.76E+01	5.08E-01	1.22E+03
1.86E+01	5.44E-01	9.09E+02
1.98E+01	5.89E-01	7.57E+02
5.11E+01	2.48E+00	7.60E+02
5.40E+01	2.80E+00	9.05E+02
5.67E+01	3.12E+00	1.21E+03

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.85-1.86

Table 272: mk23b [48, Guirao (1982)]

Percent H2	Equivalence Ratio	Critical Diameter
2.97E+01	1.01E+00	1.98E+02

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.85-1.86

Table 273: at72a [56, Knystautas (1982)]

Dilution Ratio	Percent N2	Tube Diameter
0.1384	4.4000	24.0481
1.3106	30.4000	52.0479
2.3044	43.4400	95.0871
3.3442	52.7000	157.5260
3.7107	55.3000	208.4330

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 274: at56a [77, Makris (1994)]

Equivalence Ratio	Tube Diameter
0.5711	24.8561
0.8067	19.8635
0.9457	20.0039
1.2223	24.9119

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.6-1.2

Table 275: at75a [80, Matsui (1979)]

Initial Pressure (atm)	Initial Pressure (kPa)	Tube Diameter

0.3652	36.99476	59.4127
0.6526	66.10838	32.3274
1.1244	113.90172	18.5707

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 276: at72c [80, Matsui (1979)]

Dilution Ratio	Percent N2	Tube Diameter
0.00	0.0000	20.5090
0.4960	14.2000	31.5047
0.9337	23.7000	45.1399
1.6657	35.7000	86.3473
1.9343	39.2000	102.4080
2.0413	40.5000	113.1460
2.1991	42.3000	173.0790
2.4376	44.8000	275.6590

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 277: at75b [87, Moen (1985)]

Initial Pressure (atm)	Initial Pressure (kPa)	Tube Diameter
0.4276	43.31588	45.2169
0.7133	72.25729	29.0357

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	40-80 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 278: at75d [87, Moen (1985)]

Initial Pressure (atm)	Initial Pressure (kPa)	Tube Diameter
0.3758	38.06854	44.4455
0.6269	63.50497	28.5403

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	40-80 kPa	Diluent:	CF3Br
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 279: at75c [87, Moen (1985)]

Initial Pressure (atm)	Initial Pressure (kPa)	Tube Diameter
0.6367	64.49771	45.7539

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	80 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 280: at43 [99, Plaster (1991)]

Equivalence Ratio	Tube Diameter
0.3954	40.7667
0.4924	25.3007
1.0005	10.5732
1.5463	10.6760
1.9973	25.2069
2.0036	41.0005

Category:	critical tube	Fuel:	H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	100 K	Equivalence Ratio:	0.25-3

3.2.2 CH4 Fuel

Table 281: at161a [11, Bauer (1984)]

Tube Diameter	Initial Pressure
51.8304	2238.83
59.5464	1450.61
134.5120	946.43
304.3470	564.82
282.4580	421.03

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	400-2200 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.08

Table 282: at161b [11, Bauer (1984)]

Tube Diameter	Initial Pressure
68.1482	1161.54
68.7634	708.73
69.0754	552.59
265.8210	324.53
275.8000	211.74

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	200-1200 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.09

Table 283: at161c [11, Bauer (1984)]

Tube Diameter	Initial Pressure
127.4230	1130.88
129.9030	872.02
268.1630	664.72
279.3530	518.36
263.3430	364.12
277.4750	226.39

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	200-1100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.15

Table 284: at161d [11, Bauer (1984)]

Tube Diameter	Initial Pressure
160.4620	1897.32
206.3250	1508.81
195.6290	1150.15
265.9140	708.02
258.0200	502.99

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	500-1900 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.09

Table 285: at147a [56, Knystautas (1982)]

Initial Pressure	Tube Diameter
101.3	206.6000

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 286: at147b [80, Matsui (1979)]

Initial Pressure	Tube Diameter
101.3	51.5000

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.3

Table 287: at147c [80, Matsui (1979)]

Initial Pressure	Tube Diameter
101.3	116.8000

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.3

Table 288: at147d [80, Matsui (1979)]

Initial Pressure	Tube Diameter
101.30	260.2000

Category:	critical tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.3

Table 289: mk137k [80, Matsui (1979)]

Initiap Pressure	Tube Diameter
183.98	27.29
101.33	51.19

Category:	critical tube	Fuel:	CH_4
Sub-Category:		Oxidizer:	O_2
Initial Pressure:	101-184 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 290: att2 [129, Zeldovich (1956)]

Initial Pressure	Tube Diameter
106.66	32.0

Category:	critical tube	Fuel:	CH_4
Sub-Category:		Oxidizer:	O_2
Initial Pressure:	106.7 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

3.2.3 C2H2 Fuel

Table 291: at71a [56, Knystautas (1982)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
1.1244	44.54128	12.8626
1.6364	53.89277	23.5724
2.4822	63.93797	51.7241
3.3563	70.56536	94.1121
4.1133	74.60686	158.101

Category:	critical tube	Fuel:	C_2H_2
Sub-Category:		Oxidizer:	O_2
Initial Pressure:	101.3 kPa	Diluent:	N_2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 292: at22a4 [80, Matsui (1979)]

Equivalence Ratio	Tube Diameter (mm)
1.667	81.0

Category:	critical tube	Fuel:	C_2H_2
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.67

Table 293: at66b [80, Matsui (1979)]

Dilution Ratio	Percent Diluent	Tube Diameter
3.7600	69.29	82.1050
3.0000	64.29	39.7179
2.0000	54.55	12.5354
1.0000	37.5	3.8938
0.0000	0.0	0.8949

Category:	critical tube	Fuel:	C_2H_2
Sub-Category:		Oxidizer:	O_2
Initial Pressure:	101.3 kPa	Diluent:	N_2
Initial Temperature:	293 K	Equivalence Ratio:	1.67

Table 294: at66a [80, Matsui (1979)]

Dilution Ratio	Percent Diluent	Tube Diameter
0.0000	0.0	1.5343

3.7600	72.87	175.7250

Category:	critical tube	Fuel:	C2H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 295: at22a1 [84, Moen (1984)]

Equivalence Ratio	Tube Diameter (mm)
0.6140	889.9830

Category:	critical tube	Fuel:	C2H2
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.6

Table 296: at20a [102, Rinnan (1982)]

Equivalence Ratio	Tube Diameter (mm)
0.4448	1257.4698
0.4524	881.8770
0.5256	415.9330
0.7531	187.0450

Category:	critical tube	Fuel:	C2H2
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.45-0.75

Table 297: mk127 [129, Zeldovich (1956)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
0.0000	0.0000	2.6473
0.2596	15.6417	3.9409
0.4957	26.1481	5.4744
0.7885	36.0300	7.9728
0.9990	41.6432	12.1524
1.2751	47.6645	15.8533
1.5257	52.1484	21.6387
1.8398	56.7880	31.8385

Category:	critical tube	Fuel:	C2H2
Sub-Category:		Oxidizer:	O2
Initial Pressure:	106.7 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

3.2.4 C2H4 Fuel

Table 298: at162a [11, Bauer (1984)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
104.7890	8.7226	883.817
122.9500	6.9607	677.935
134.9510	4.9800	504.599
272.1370	3.4806	352.672

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	350-880 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	3

Table 299: at162b [11, Bauer (1984)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
90.3708	5.9860	606.531
123.4390	4.1993	425.494
173.0150	2.8061	284.328
348.0680	1.5267	154.693

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	150-600 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	3

Table 300: at162c [11, Bauer (1984)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
77.2125	3.8632	391.439
89.3903	3.0031	304.289
151.1630	1.9003	192.548
218.3480	1.1990	121.489

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	100-400 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	3

Table 301: at163a [11, Bauer (1984)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
5.0074	78.75	882.1819
4.0842	75.15	505.9670
2.9991	68.95	260.1820

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.05

Table 302: mk142a [56, Knystautas (1982)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
2.95	68.84	207.11
2.47	64.98	155.66
1.76	56.96	93.53
1.32	49.78	50.44
0.85	38.95	23.86
0.37	21.52	12.38

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 303: at56c [77, Makris (1994)]

Equivalence Ratio	Tube Diameter (mm)
0.4675	25.1043
0.5127	19.9668
0.6017	14.9616
0.7564	9.9620
2.1213	9.9504
2.3682	14.8559
2.6222	19.8905
2.8106	24.9195

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	.5-2.7

Table 304: at137g [80, Matsui (1979)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
51.5099	0.1443	14.621
26.6588	0.2667	27.023
12.4696	0.5361	54.320
6.3169	1.0000	101.3

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	14.6-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 305: at56d [80, Matsui (1979)]

Equivalence Ratio	Tube Diameter (mm)
1.0000	6.4700

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 306: at80b [80, Matsui (1979)]

Equivalence Ratio	Tube Diameter (mm)
1.5	5.1957

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.5

Table 307: at80c [80, Matsui (1979)]

Equivalence Ratio	Tube Diameter (mm)
2.0	2.75

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	2

Table 308: at66c [80, Matsui (1979)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
2.4811	62.32	182.8550
1.9808	56.91	98.9644
1.4801	49.67	46.4436
0.9794	39.50	20.7841
0.0000	0.0	5.1957

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.5

Table 309: at22b [84, Moen (1984)]

Equivalence Ratio	Tube Diameter (mm)
0.6726	1822.8799

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.6

Table 310: at22c [85, Moen (1982)]

Equivalence Ratio	Tube Diameter (mm)
0.7679	882.6920
1.0000	449.1660

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.7-1

Table 311: at77a [87, Moen (1985)]

Equivalence Ratio	Tube Diameter (mm)
0.7900	890.0

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	CF4
Initial Temperature:	293 K	Equivalence Ratio:	0.88

Table 312: at77b [87, Moen (1985)]

Equivalence Ratio	Tube Diameter (mm)
0.7898	890.0

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	CF3Br
Initial Temperature:	293 K	Equivalence Ratio:	0.88

Table 313: at77c [87, Moen (1985)]

Equivalence Ratio	Tube Diameter (mm)
0.8323	890.0

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	CF3Br
Initial Temperature:	293 K	Equivalence Ratio:	0.88

Table 314: at77d [87, Moen (1985)]

Equivalence Ratio	Tube Diameter (mm)
0.8794	890.0

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	CO2
Initial Temperature:	293 K	Equivalence Ratio:	0.88

Table 315: at200c [83, Moen (1981)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
0.3149	19.11	11.4966
0.8053	37.65	27.0952
1.2769	48.92	47.1682
1.7773	57.14	85.1014
2.4221	64.50	183.6000
3.0000	69.23	253.6620

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 316: at31c [102, Rinnan (1982)]

Equivalence Ratio	Tube Diameter (mm)
0.6675	1284.0699
0.6863	944.3809
0.7778	433.1670

Category:	critical tube	Fuel:	C2H4
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.6-.78

3.2.5 Miscellaneous Fuel

Table 317: at143a [56, Knystautas (1982)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
2.2965	64.10839	207.22
1.8565	59.08254	150.44
1.2539	49.37364	89.231
0.60877	32.13381	50.511
0.2287	15.10155	23.802

Category:	critical tube	Fuel:	C2H6
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 318: at137h [80, Matsui (1979)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
52.48	0.28768	29.14198
26.902	0.53528	54.22386
12.092	1.1701	118.5311
6.2883	2.1623	219.041

Category:	critical tube	Fuel:	C2H6
Sub-Category:		Oxidizer:	O2
Initial Pressure:	30-203 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 319: at137i [80, Matsui (1979)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
1.21E+01	9.32E-01	94.45009
2.68E+01	4.45E-01	45.08053
5.19E+01	2.43E-01	24.57234

Category:	critical tube	Fuel:	C3H8
Sub-Category:		Oxidizer:	O2
Initial Pressure:	23-96 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 320: at137j [80, Matsui (1979)]

Tube Diameter (mm)	Initial Pressure (atm)	Initial Pressure (kPa)
51.743	0.1852	18.76076
26.514	0.35202	35.65963
12.096	0.74286	75.25172
6.2444	1.3922	141.0299

Category:	critical tube	Fuel:	C3H6
Sub-Category:		Oxidizer:	O2
Initial Pressure:	20-132 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 321: at66d [80, Matsui (1979)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
0	0	12.437
0.48848	25.86631	27.804
0.9797	41.16905	61.185
1.4708	51.23311	126.37

Category:	critical tube	Fuel:	C2H6
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.4

Table 322: at66e [80, Matsui (1979)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
0	0	9.9614
0.48816	27.51942	24.107
0.96229	42.80641	48.243
1.4788	53.49222	104.47
2	60.86957	200

Category:	critical tube	Fuel:	C3H8
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.43

Table 323: at66f [80, Matsui (1979)]

Dilution Ratio	Percent Diluent	Tube Diameter (mm)
0	0	7.0284
0.48734	26.76702	16.742
0.9786	42.32821	37.43
1.4697	52.43248	79.799
1.9693	59.62818	164.81

Category:	critical tube	Fuel:	C3H6
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1.5

Table 324: mk22e [84, Moen (1984)]

Equivalence Ratio	Critical Tube Diameter (mm)
1.07756	3007.58
1.26159	3011.11

Category:	critical tube	Fuel:	C2H6
Sub-Category:		Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.05, 1.25

3.3 Critical Energy

Critical energy data are presented here as actual limits, while much of the original data were given in terms of GO - No GO events. The data here are therefore somewhat interpreted. For the original GO - No GO data, refer to the cited sources.

3.3.1 H2 Fuel

Table 325: mk30 [7, Atkinson (1980)]

Equivalence Ratio	Critical Charge (kg tetryl)	Critical Energy (J)
0.61143	2.38E-03	10772.61
0.796951	9.61E-04	4341.993
1.19051	1.12E-03	5078.717
1.12436	1.26E-03	5696.782
1.42182	2.34E-03	10582.45

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.95-1.5

Table 326: at34b [14, Benedick (1986)]

Equivalence Ratio	Critical Energy (J)	Critical Energy (g tetryl)
0.49	2085528.0	461.4
0.54	541270.0	119.75
0.59	101700.0	22.5
3.4	2084172.0	461.1

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	83.99 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.48-3.4

Table 327: at34c [14, Benedick (1986)]

Equivalence Ratio	Critical Energy (g tetryl)	Critical Energy (J)
0.5	31.45	142154
0.6	8.25	37290
0.7	3.225	14577
0.75	2.28	10305.6
0.8	1.675	7571
0.9	1.15	5198
0.95	1.02	4610.4
1.0	0.95	4294
1.05	0.94	4248.8
1.1	0.95	4294
1.15	0.985	4452.2
1.2	1.05	4746
1.3	1.22	5514.4
1.35	1.345	6079.4
1.4	1.51	6825.2
1.45	1.69	7638.8
1.55	2.125	9605
1.6	2.34	10576.8
1.7	3.075	13899
1.8	3.965	17921.8
1.9	4.985	22532.2
2.0	6.49	29334.8
2.25	12.15	54918
2.50	23.25	105090

3.1	100.7	455164

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.5-3.1

Table 328: at24 [48, Guirao (1982)]

Equivalence Ratio	Critical Energy
0.4958	139577.6
0.5881	37565.72
0.6769	14616.32
0.7427	10374.76
0.7991	7469.3
0.9	5228.284
0.9445	4599.1
1	4284.508
1.098	4289.48
1.194	4816.06
1.294	5564.12
1.393	6807.572
1.5489	9754.16
1.6897	13973.58
1.7924	18361.6
1.9071	23113.92
1.9895	29506.56
2.2317	57956.8
2.483	109037.3
3.075	463661.6

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.85-1.86

Table 329: at181a [55, Knystautas (1988)]

Equivalence Ratio	Critical Energy
1.0	1.0

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, spark	Oxidizer:	Cl2
Initial Pressure:	8 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 330: at181b [55, Knystautas (1988)]

Equivalence Ratio	Critical Energy
1.0	3.0

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, spark	Oxidizer:	Cl2
Initial Pressure:	16 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 331: mk82a [68, Lee (1977)]

Initial Pressure (atm)	Initial Pressure (kPa)	Critical Energy

0.13	13.33	67.89
0.18	18.59	48.02
0.26	26.58	23.12
0.38	38.05	9.40
0.50	50.93	3.43

Category:	critical energy	Fuel:	H2
Sub-Category:	cylindrical	Oxidizer:	O2
Initial Pressure:	12.2-50.7 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 332: at55a [73, Litchfield (1962)]

Equivalence Ratio	Critical Energy
0.4100	249.5360
0.4800	168.8530
0.5530	153.9710
0.7300	76.5399
0.9000	83.1499
1.2200	134.9570

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, spark	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.5-1.2

Table 333: at55b [73, Litchfield (1962)]

Equivalence Ratio	Critical Energy
0.2700	325.7410
0.3000	232.0120
0.3240	192.8220
0.3870	40.7947
0.4490	35.7010
0.4860	30.2882
0.5100	15.6798
0.7500	12.2536
1.0000	12.5242
1.0800	17.7733
1.3700	35.4300
1.5200	72.0000
1.8900	397.9000

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.27-2

Table 334: at123a [75, Macek (1963)]

Percent Additive	Critical Energy
0.00	10.6595
2.0307	18.7577
3.0224	26.8531
4.4890	43.0765

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	CH4
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 335: at123b [75, Macek (1963)]

Percent Additive	Critical Energy
0.8194	13.5485
2.0232	17.9476
4.9899	34.1372

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	CH3Cl
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 336: at123d [75, Macek (1963)]

Percent Additive	Critical Energy
0.0056	10.7275
1.0094	7.0171
3.0193	5.5335
4.9944	5.4644

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	CCl4
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 337: at123e [75, Macek (1963)]

Percent Additive	Critical Energy
0.0140	10.6606
1.0028	5.3975
5.0035	4.7229

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	CHCl3
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 338: at123f [75, Macek (1963)]

Percent Additive	Critical Energy
5.0044	3.7784

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	Cl2
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 339: at124b [75, Macek (1963)]

Percent Additive	Critical Energy
1.0	11.0
2.0377	15.6697
3.0533	25.4270

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	C2H6
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 340: at124c [75, Macek (1963)]

Percent Additive	Critical Energy
2.0428	17.6268

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	i-C4H10
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 341: at124d [75, Macek (1963)]

Percent Additive	Critical Energy
1.0193	12.5238
2.0390	14.9277
3.0547	24.6176

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	n-C4H10
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 342: at124e [75, Macek (1963)]

Percent Additive	Critical Energy
2.0495	13.7145
3.0542	19.8949
4.0767	30.5975

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	C3H8
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 343: at126a [75, Macek (1963)]

Percent Additive	Critical Energy
1.5171	42.6317
1.0125	34.0884
0.8906	25.3750
0.5091	18.0564

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	Isobutene
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 344: at126b [75, Macek (1963)]

Percent Additive	Critical Energy
0.5056	14.2566
1.0019	22.8538
2.0286	39.2427

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	Trans-butene-2
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 345: at126c [75, Macek (1963)]

Percent Additive	Critical Energy
2.0227	37.3560
1.0103	22.7872

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	Propylene
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 346: at126d [75, Macek (1963)]

Percent Additive	Critical Energy
3.0009	26.8620
2.0161	16.6069

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	Butene-1
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 347: at126e [75, Macek (1963)]

Percent Additive	Critical Energy
1.0023	9.5155
1.9990	10.4752
4.0025	10.9808

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, exploding wire	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	Ethylene
Initial Temperature:	297 K	Equivalence Ratio:	0.82

Table 348: at53 [76, Makeev (1983)]

Percent H2	Equivalence Ratio	Critical Charge	Critical Energy
20.0000	0.5950	190.0000	858800.0
23.3520	0.7251	12.9011	58312.972
31.9044	1.1150	2.0000	9040.0
34.7147	1.2654	1.8600	8407.2
36.9386	1.3940	2.3000	10396.0
45.6967	2.0000	15.3790	69513.0
62.0000	3.8832	71.0000	320920.0

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.68-2.1

Table 349: at67a [80, Matsui (1979)]

Equivalence Ratio	Critical Energy
0.3230	69.8785
0.4970	2.5345
0.7380	1.6745
1.0000	2.0920
1.4700	5.1805
1.9800	52.3097

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.6 - 1.2

Table 350: at49a [130, Zitoun (1995)]

Initial Pressure (bar)	Initial Pressure (kPa)	Critical Energy (J)
0.5006	50.06	32.0469
0.8005	80.05	10.7837

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	50-80 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 351: at49b [130, Zitoun (1995)]

Initial Pressure (bar)	Initial Pressure (kPa)	Critical Energy (J)
0.3695	36.95	35.0124
0.4989	49.89	26.1511
0.7115	71.15	19.8938

Category:	critical energy	Fuel:	H2
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	36-70 kPa	Diluent:	
Initial Temperature:	123 K	Equivalence Ratio:	1

3.3.2 CH4 Fuel

Table 352: at195d [4, Aminallah (1993)]

Equivalence Ratio	Critical Energy
0.7733	101.0650
1.0000	53.7913
1.1080	48.2483
1.2034	54.7121
1.3351	91.1051

Category:	critical energy	Fuel:	CH4
Sub-Category:	cylindrical, exploding wire	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.7-1.3

Table 353: at195e [4, Aminallah (1993)]

Equivalence Ratio	Critical Energy
0.7586	76.6475
0.8673	43.8220
1.0000	42.5474
1.1203	38.3386
1.1994	43.0755
1.3293	64.6979

Category:	critical energy	Fuel:	CH4
Sub-Category:	cylindrical, exploding wire	Oxidizer:	O2
Initial Pressure:	120 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.7-1.3

Table 354: at177a [13, Beeson (1991)]

Equivalence Ratio	Critical Energy
1.0000	88658800.0

Category:	critical energy	Fuel:	CH4
Sub-Category:	spherical	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 355: at210a [26, Bull (1976)]

Dilution Ratio	Percent Diluent	Critical Charge (g tetryl)	Critical Energy
5.3669	64.1444	522.671	2362473
4.4533	59.7494	153.132	692156.6
4.3787	59.3424	71.499	323175.5
3.5435	54.153	20.3381	91928.21
2.3793	44.2307	2.7766	12550.23
1.4126	32.0129	0.2558	1156.216

Category:	critical energy	Fuel:	CH4
Sub-Category:	spherical, high explosive	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 356: at209a [33, Desbordes (1973)]

Equivalence Ratio	Critical Energy
1.0000	52.5336

Category:	critical energy	Fuel:	CH4
Sub-Category:	cylindrical	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 357: at210b [60, Kogarko (1965)]

Dilution Ratio	Percent Diluent	Critical Charge (g TNT)	Critical Energy
7.52	71.48	1078.0699	4.87288E+6

Category:	critical energy	Fuel:	CH4
Sub-Category:	spherical, high explosive	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	N2
Initial Temperature:	K	Equivalence Ratio:	1

Table 358: at79a [80, Matsui (1979)]

Equivalence Ratio	Critical Energy (J)
0.6860	157.4020
0.9620	60.7512
1.2712	51.5746
1.6580	138.4710

Category:	critical energy	Fuel:	CH4
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.7-1.7

Table 359: at195c [92, Nicholls (1979)]

Equivalence Ratio	Critical Energy
1.0000	62.7944

Category:	critical energy	Fuel:	CH4
Sub-Category:	cylindrical, high explosive	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 360: at115 [128, Wolanski (1981)]

Equivalence Ratio	Critical Energy
0.8220	14208100.0
1.0000	9420700.0
1.1800	8974500.0
1.3000	9250200.0
1.4200	9419300.0
1.6100	14215500.0

Category:	critical energy	Fuel:	CH4
Sub-Category:	planar	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.8-1.4

3.3.3 C2H2 Fuel

Table 361: at108a [45, Freiwald (1962)]

Equivalence Ratio	Critical Charge (g tetryl)	Critical Energy (J)
7.8157e-001	9.94	44932
1.0871e+000	0.9584	4332
2.7421e+000	0.9584	4332
4.1000e+000	9.94	44932

Category:	critical energy	Fuel:	C2H2
Sub-Category:	high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.7-4.1

Table 362: at108b [60, Kogarko (1965)]

Equivalence Ratio	Critical Charge (g tetryl)	Critical Energy (J)
1.0	1.5	6780.0

Category:	critical energy	Fuel:	C2H2
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 363: at82c [68, Lee (1977)]

Initial Pressure (atm)	Initial Pressure (kPa)	Critical Energy (J)
0.039890	4.04185	0.76808
0.064718	6.55755	0.49423
0.090914	9.21186	0.38556
0.10571	10.7111	0.35883
0.12869	13.0395	0.29634

Category:	critical energy	Fuel:	C2H2
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	4.1-12.2 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 364: at82b [68, Lee (1977)]

Initial Pressure (atm)	Initial Pressure (kPa)	Critical Energy (J/cm)
0.065020	6.588	0.22233
0.13338	13.515	0.11133
0.19762	20.024	0.078252
0.26344	26.693	0.058275
0.38726	39.239	0.043498

Category:	critical energy	Fuel:	C2H2
Sub-Category:	cylindrical	Oxidizer:	O2
Initial Pressure:	6.1-40.5 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 365: at44a [80, Matsui (1979)]

Equivalence Ratio	Critical Energy (J)
6.2078e-001	1.7344e-002
1.0656e+000	1.5163e-003
1.6680e+000	3.3697e-004
2.4988e+000	4.6671e-004

Category:	critical energy	Fuel:	C2H2
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	kPa	Diluent:	
Initial Temperature:	K	Equivalence Ratio:	0.7 - 2.1

Table 366: at54a [121, Vasil'ev (1982)]

Initial Pressure (atm)	Initial Pressure (kPa)	Critical Energy (J/cm)
0.025255	2.55896	2.4821
0.052386	5.30901	0.96049

Category:	critical energy	Fuel:	C2H2
Sub-Category:	cylindrical	Oxidizer:	O2
Initial Pressure:	2.7-5.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 367: at105a [123, Vasil'ev (1980)]

Initial Pressure (atm)	Initial Pressure (kPa)	Critical Energy (J/cm)
0.20	20.18	1045.392
0.25	25.64	810.26
0.40	40.52	628.662
0.50	50.45	467.6714
0.73	74.13	370.2198
0.82	83.13	334.3758
1.00	101.34	264.4858

Category:	critical energy	Fuel:	C2H2
Sub-Category:	cylindrical, high explosive	Oxidizer:	Air
Initial Pressure:	30.4-101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

3.3.4 C2H4 Fuel

Table 368: at84a [14, Benedick (1986)]

Equivalence Ratio	Critical Charge (kg tetryl)	Critical Energy (J)
3.0285	1.1672	5275744
2.9217	0.7832	3540064
2.8153	0.4508	2037616
2.5841	0.174	786480
2.3472	0.0602	272104
2.2106	0.0369	166788
2.1154	0.0271	122492
2.014	0.0217	98084
1.9191	0.0149	67348
1.8118	0.0114	51528
1.7163	0.0093	42036
1.6688	0.0078	35256
1.6151	0.007	31640
1.5672	0.0066	29832
1.5012	0.0063	28476
1.4593	0.0061	27572
1.4112	0.0062	28024
1.3511	0.0062	28024
1.2907	0.0067	30284
1.2424	0.0072	32544
1.1878	0.0083	37516
1.1449	0.0108	48816
1.0844	0.0123	55596
1.0233	0.0167	75484
0.968	0.0241	108932
0.9187	0.0349	157748
0.8687	0.0629	284308
0.8061	0.1322	597544
0.7491	0.3236	1462672
0.7046	0.6655	3008060
0.697	1.101	4976520

Category:	critical energy	Fuel:	C2H4
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	.6-3.0

Table 369: at109a [23, Bull (1978)]

Equivalence Ratio	Critical Charge (g tetryl)	Critical Energy (J)
1.0	12.4	56048.0

Category:	critical energy	Fuel:	C2H4
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 370: at109b [21, Bull (1979)]

Equivalence Ratio	Critical Charge (g tetryl)	Critical Energy (J)
0.8098	50.2	226904.0

Category:	critical energy	Fuel:	C2H4
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.8

Table 371: at109c [50, Hikita (1975)]

Equivalence Ratio	Critical Charge (g tetryl)	Critical Energy (J)
1.2866	22.8	103056.0

Category:	critical energy	Fuel:	C2H4
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.2

Table 372: at79b [80, Matsui (1979)]

Equivalence Ratio	Critical Energy (J)
0.699055	4.60785E-1
0.951799	1.21320E-1
1.432788	7.20308E-2
1.956523	1.40705E-1
2.102848	2.35093E-1
2.373734	9.41911E-1

Category:	critical energy	Fuel:	C2H4
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1.33

Table 373: at32b [88, Murray (1981)]

Equivalence Ratio	Critical Charge (g tetryl)	Critical Energy (J)
0.9866	13.4	60568.0
0.9153	31.5	142380.0
0.7727	73.8	333576.0

Category:	critical energy	Fuel:	C2H4
Sub-Category:	high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

3.3.5 Miscellaneous Fuel

Table 374: at92 [22, Bull (1982)]

Equivalence Ratio	Critical Charge (kg tetryl)	Critical Energy (J)
0.78053	0.52172	2358174.0
0.82996	0.15619	705978.8
0.95341	0.049535	223898.2
0.98261	0.039874	180230.5
1.0799	0.029753	134483.6
1.0765	0.019942	90137.84
1.157	0.017117	77368.84
1.237	0.019867	89798.84
1.3414	0.029492	133303.8
1.3882	0.039639	179168.3
1.4393	0.04967	224508.4
1.602	0.15752	711990.4
1.7441	0.52082	2354106.0

Category:	critical energy	Fuel:	C2H6
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	1

Table 375: at32f [44, Elsworth (1984)]

Equivalence Ratio	Critical Charge (kg tetryl)	Critical Energy (J)
0.70466	6.5087	29419320.0
0.89687	0.32554	1471441.0
0.99308	0.062636	283114.7
1.124	0.047609	215192.7
1.2546	0.06107	276036.4
1.4144	0.16301	736805.2
1.633	1.1309	5111668.0
1.7867	4.1321	18677090.0
1.9519	22.947	103720400.0

Category:	critical energy	Fuel:	C3H8
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.7-1.75

Table 376: at32g [44, Elsworth (1984)]

Equivalence Ratio	Critical Charge (kg tetryl)	Critical Energy (J)
0.71066	5.9393	26845640.0
0.81941	0.43401	1961725.0
1.0169	0.061023	275824.0
1.13	0.043443	196362.4
1.2665	0.056462	255208.2
1.3555	0.080407	363439.6
1.462	0.15472	699334.4
1.6984	1.0876	4915952.0
2.0411	22.656	102405100.0

Category:	critical energy	Fuel:	C4H10
Sub-Category:	spherical, high explosive	Oxidizer:	Air
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.7-2

Table 377: at32e [54, Knystautas (1984)]

Equivalence Ratio	Critical Charge (kg tetryl)	Critical Energy (J)
0.69974	1.4269	6449588.0
0.80812	0.17828	805825.6
0.90392	0.063442	286757.8
1.0054	0.034314	155099.3
1.0947	0.026422	119427.4
1.1897	0.028965	130921.8
1.2965	0.039663	179276.8
1.3794	0.065226	294821.5
1.6992	0.35305	1595786.0
1.989	2.7562	12458020.0

Category:	critical energy	Fuel:	C2H6
Sub-Category:	spherical, high explosive	Oxidizer:	O2
Initial Pressure:	67.4 kPa	Diluent:	N2
Initial Temperature:	293 K	Equivalence Ratio:	0.5-2.2

Table 378: at44c [80, Matsui (1979)]

Equivalence Ratio	Critical Energy (J)
6.9199e-001	3.3724e+000
9.9736e-001	1.1044e+000
1.4387e+000	8.8871e-001
1.7842e+000	2.1990e+000

Category:	critical energy	Fuel:	C2H6
Sub-Category:	spherical	Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.67 - 1.58

3.4 Minimum Tube Diameter

Table 379: at26 [2, Agafonov (1994)]

Percent H2	Equivalence Ratio	Tube Diameter
15.0360	0.4210	25.8623
16.8016	0.4800	15.9155
20.4748	0.6127	9.9262
25.4118	0.8107	5.7886
52.3832	2.6180	5.8274
56.7796	3.1270	9.6964
58.9170	3.4133	15.8445
60.8867	3.7050	25.8693

Category:	minimum tube	Fuel:	H2
Sub-Category:	round, confined	Oxidizer:	Air
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	298 K	Equivalence Ratio:	.4-3.7

Table 380: at27a [2, Agafonov (1994)]

Equivalence Ratio	Tube Diameter
0.0970	25.9259
0.1139	15.9933
0.1218	10.0168
0.1485	6.0606
3.5720	6.2290
4.0290	10.1852
4.1168	16.2458
4.3030	26.2626

Category:	minimum tube	Fuel:	H2
Sub-Category:	round, confined	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	298 K	Equivalence Ratio:	.1-4.5

Table 381: at27b [2, Agafonov (1994)]

Equivalence Ratio	Tube Diameter
0.1170	26.0101
0.1298	15.9933
0.1416	10.1010
0.1702	5.9764
2.7916	6.1448
3.4370	10.2694
3.5720	16.2458
3.6425	26.2626

Category:	minimum tube	Fuel:	H2
Sub-Category:	round, confined	Oxidizer:	O2
Initial Pressure:	100 kPa	Diluent:	
Initial Temperature:	135 K	Equivalence Ratio:	.1-4.5

Table 382: at28a [2, Agafonov (1994)]

Tube Diameter	Percent Diluent
3.6178	81.4921
5.7452	85.0231
9.8726	87.8222
15.5869	89.6520

Category:	minimum tube	Fuel:	H_2
Sub-Category:	round, confined	Oxidizer:	O_2
Initial Pressure:	100 kPa	Diluent:	Ar
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 383: at28b [2, Agafonov (1994)]

Tube Diameter	Percent Diluent
3.8031	70.2266
5.8340	75.2412
9.8591	80.1618
15.7297	83.0648

Category:	minimum tube	Fuel:	H_2
Sub-Category:	round, confined	Oxidizer:	O_2
Initial Pressure:	100 kPa	Diluent:	He
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 384: at28c [2, Agafonov (1994)]

Tube Diameter	Percent Diluent
3.8610	54.6981
5.8417	65.2416
9.9073	74.8455
15.9402	78.1837

Category:	minimum tube	Fuel:	H_2
Sub-Category:	round, confined	Oxidizer:	O_2
Initial Pressure:	100 kPa	Diluent:	N_2
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 385: at28d [2, Agafonov (1994)]

Tube Diameter	Percent Diluent
20.0560	91.4076

Category:	minimum tube	Fuel:	H_2
Sub-Category:	round, confined	Oxidizer:	O_2
Initial Pressure:	100 kPa	Diluent:	Ar
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 386: at28e [2, Agafonov (1994)]

Tube Diameter	Percent Diluent
20.0019	88.2129

Category:	minimum tube	Fuel:	H_2
Sub-Category:	round, confined	Oxidizer:	O_2
Initial Pressure:	100 kPa	Diluent:	He
Initial Temperature:	298 K	Equivalence Ratio:	1

Table 387: at133 [100, Pusch (1962)]

Equivalence Ratio	Tube Diameter
0.3236	9.4977
0.3462	6.5216
0.3970	4.5380
0.6108	1.9896
1.1895	1.9657

1.3899	4.5038
1.4809	10.0011

Category:	minimum tube	Fuel:	CH4
Sub-Category:		Oxidizer:	O2
Initial Pressure:	101.3 kPa	Diluent:	
Initial Temperature:	293 K	Equivalence Ratio:	0.3 - 1.5

3.5 Miscellaneous

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