



Issue 3 - Year 1 - November 2021
Editorial booklet by RetroMagazine World

SPECIAL

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SPECIAL ISSUE CHIMICAWARE



**23 programs for ZX Spectrum
+
28 programs for Windows**

**Compilation of
EXCLUSIVE
SOFTWARE for
Spectrum and PC**

**INSIDE: MANY UTILITIES
FOR ZX SPECTRUM AND PC**

RetroMagazine World
future days are back

**SPECIAL EDUCATIONAL
ISSUE**



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Renew successful software!

In the mid-80s of the 20th century, among the freshmen engineering students at the University of Florence who were taking chemistry courses, copies of a cassette containing ChimicaWare, a set of educational programs to practice the concepts learned during the lessons, were circulating. The software ran on the Sinclair ZX Spectrum and could be used with profit even by high school students. This software, recovered by our Alberto Apostolo, was made available to all readers of RMW, registering an immediate success.

In 2021, Alberto, combining business with pleasure, wanted to pay tribute to this software and its author, by rewriting entirely in Python all BASIC programs that compose the suite Chimicaware for ZX Spectrum.

It was not a simple conversion of instructions from one language to another. There have also been made some changes and fixed some small errors (hoping not to have introduced new ones :-P). The rewriting of this software, in addition to being a clear tribute to the work of Prof. Cardellini, was an opportunity to learn a new language (Python), deepen the knowledge of another (Basic) and at the same time an opportunity to build a bridge between the two worlds across over 35 years. An exercise to which we at RMW invite all readers to apply. It's a good method to acquire skill, learning by osmosis! :-)

If you have created games and/or programs and would like to see them published in this insert, do not hesitate any longer and contact us at our email address:

retromagazine.redazione@gmail.com

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Text and pictures: Alberto Apostolo and Francesco Fiorentini

Texts proofreading: David La Monaca



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ChimicaWare original version



The package was released in Ancona in 1985 by Liberato Cardellini, currently Professor of Chemistry at the Faculty of Engineering of the Polytechnic University of Marche.

Following is the list of programs for ZX Spectrum:

- 1) PREIST (presentation of ChimicaWare)
- 2) CONFEL (electronic configuration of each element)
- 3) SIMVAL (exercises with symbols and valences)
- 4) NAME (exercises of nomenclature of oxides and anhydrides)
- 5) PREFOR (presentation of the FORMULA program)
- 6) FORMULA (exercises with formulas of compounds)
- 7) CALCFOR (calculation of percentages and minimum formula)
- 8) SINCOM (balancing of elementary chemical reactions)
- 9) BALANCE (balancing of metathesis and redox reactions)
- 10) REDOX (balancing redox reactions)
- 11) METATHEXIS (double exchange reaction, can occur or not)
- 12) REALIM (calculation of limiting reagent)
- 13) GAS1 (simulation of ideal gas laws)
- 14) WAALS (exercises on Van der Waals formulas)
- 15) EQUGAS (exercises on gas equilibria)
- 16) KINETICS (kinetics of consecutive/opposite reactions)
- 17) PREION (presentation of programs on ionic equilibria)
- 18) ZERO (strong acids and bases)
- 19) ONE (weak monoprotic acids)
- 20) TWO (biprotic weak acids)
- 21) THREE (triprotic weak acids)
- 22) KPS123 (solubility products)
- 23) TITLE (titration between strong acid HCl and strong base NaOH)

Emulator(s): [Speccy](#)

Author: Prof. Liberato Cardellini

Format: Snapshot

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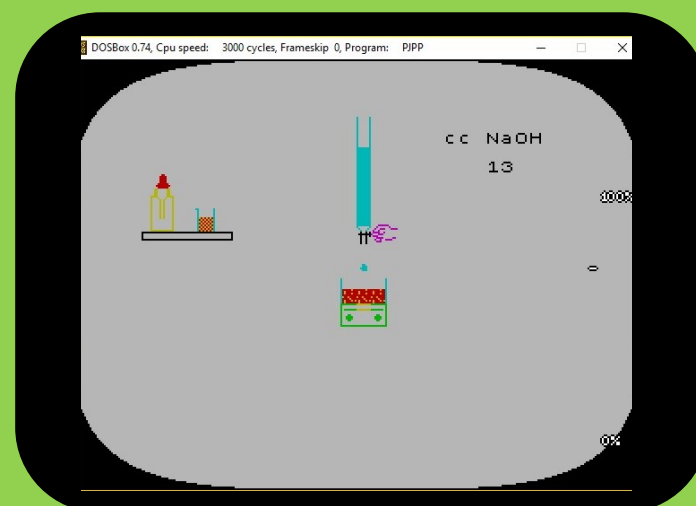
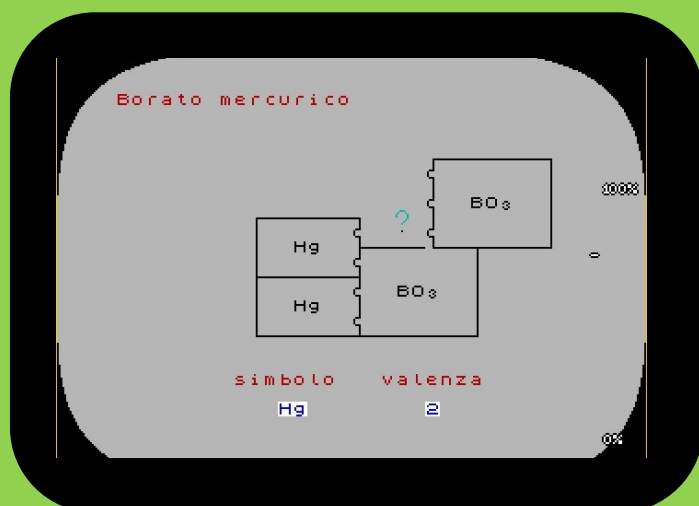


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ChimicaWare original version



All software was self-produced by Prof. Cardellini between 1984 and 1985, the result of nights and weekends in front of the computer (only for the program NAME there was the participation of Prof. Jean-Paul LeBlanc of the University of Moncton, Canada).

The choice to use a ZX Spectrum was dictated by the economy and the graphic and calculation possibilities provided. Some years ago, the programs for ZX Spectrum were stored in .sna files usable by emulators for ZX Spectrum and collected in a zipped file.

Emulator(s): [Speccy](#)

Author: [Prof. Liberato Cardellini](#)

Format: [Snapshot](#)

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ChimicaWare 2.0



The study of Python is due to personal and professional reasons. In order to learn with the right motivation I thought it was appropriate to combine business with pleasure rewriting (in Python) the BASIC programs of Chimicaware for ZX Spectrum. It was not only a simple conversion of instructions from one language to another, some changes were also made and some minor errors were fixed.

For example, EQUGAS and UNO have been divided for coding simplicity in three parts each and the software can be used in Italian and English. A new program for balancing a chemical reaction (CALCOEF) has also been created.

Tkinter was chosen as the GUI because it is a standard Python interface. No databases and other strange libraries were used because I wanted to write programs that were editable by anyone with a basic Python configuration (in the Chimicaware 2.0 package you can find the source programs). For some of them are also provided suggestions for possible changes.

The presence of bugs does not diminish the respect and admiration for the great work of Prof. Cardellini.

I'm just at the beginning of my Python learning path and I apologize if my programs are not properly "pyhtonic", if sound effects are missing and if my knowledge of Chemistry is very superficial.

Installing Chimicaware 2.0 is easy; just download the zip file and copy the CW20 folder on your Desktop (or other location).

Warning - I realized there may be differences in rendering of windows and graphics using different windows configurations.

Warning - Windows 10 security may block exe files from running, showing a message where the user can choose to run that program anyway by clicking on the small "More Info" link.

Configuration required: Windows 10 64-bit

Author: Alberto Apostolo

Notes: Python sources in the archive

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ChimicaWare 2.0



The list of programs is as follows:

- 1) PREIST (ChimicaWare presentation).
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- 7) CALCFOR (calculation of percentages and minimum formula)
- 8) SINCOM (balancing of elementary chemical reactions)
- 9) BALANCE (balancing of metathesis and redox reactions)
- 10) REDOX (balancing redox reactions)
- 11) METATHEXIS (double exchange reaction, may/may not occur)
- 12) CALCOEF (chemical reactions balancing, NEW!!!)
- 13) REALIM (calculation of limiting reagent)
- 14) GAS1 (simulation of ideal gas laws)
- 15) WAALS (exercises on Van der Waals formulas)
- 16) EQUGAS-A (exercises on gaseous equilibria, part 1)
- 17) EQUGAS-B (exercises on gaseous equilibria, part 2)
- 18) EQUGAS-C (Exercises on gaseous equilibria, part 3)
- 19) KINETICS (kinetics of consecutive/opposite reactions)
- 20) PREION (presentation of programs on ionic equilibria)
- 21) ZERO (strong acids and bases)
- 22) UNO-A (weak monoprotic acids, part 1)
- 23) UNO-B (weak monoprotic acids, part 2)
- 24) ONE-C (Weak monoprotic acids, part 3)
- 25) TWO (biprotic weak acids)
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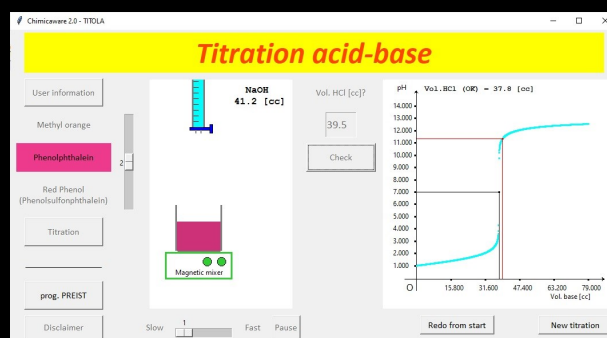
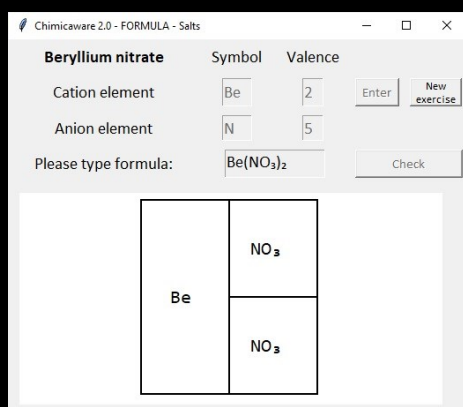
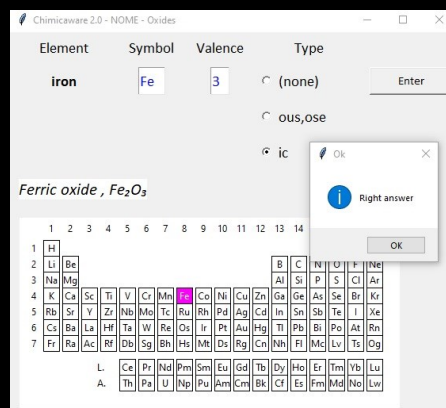


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ChimicaWare 2.0



Installing ChimicaWare 2.0 is easy.

Download the zip file and copy the CW20 folder to the Desktop or to any other location. The main menu is the PREIST program but each executable can be launched independently (loading takes 1-2 seconds). All executables use a small text file called cwconfig.txt. The executable programs were generated using pyinstaller and run on 64-bit Windows systems.

In the Manual sub-folder you will find the user manual (in English and Italian). In the Source sub-folder you will find the source programs for your convenience.

Configuration required: Windows 10 64-bit

Author: Alberto Apostolo

Notes: Python sources in the archive

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In loving memory of Sir Clive Sinclair

30 Jun 1940 - 16 Sep 2021