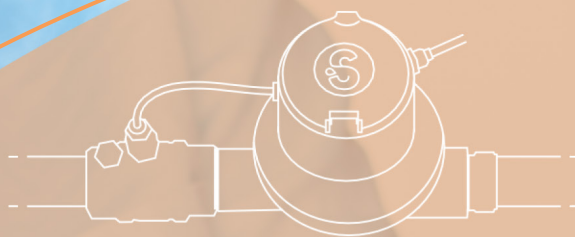


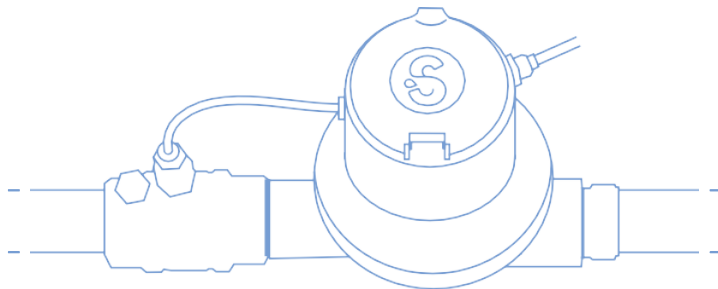


SOLUCALC
CO₂ SOFTENERS

**TECHNICAL
DOCUMENTATION**
.....



THE ONLY EFFICIENT ALTERNATIVE TO SALT SOFTENERS



Benefits for private users



EASY

No salt bags,
no maintenance.



HEALTHY

Keep your water drinkable,
with no change in taste.



ECOLOGICAL

No pollution or
waste of water.



ECONOMICAL

Only 5 € of CO₂
per year per person.

Benefits for professional users



INSTALLED IN 1 TO 2 HOURS



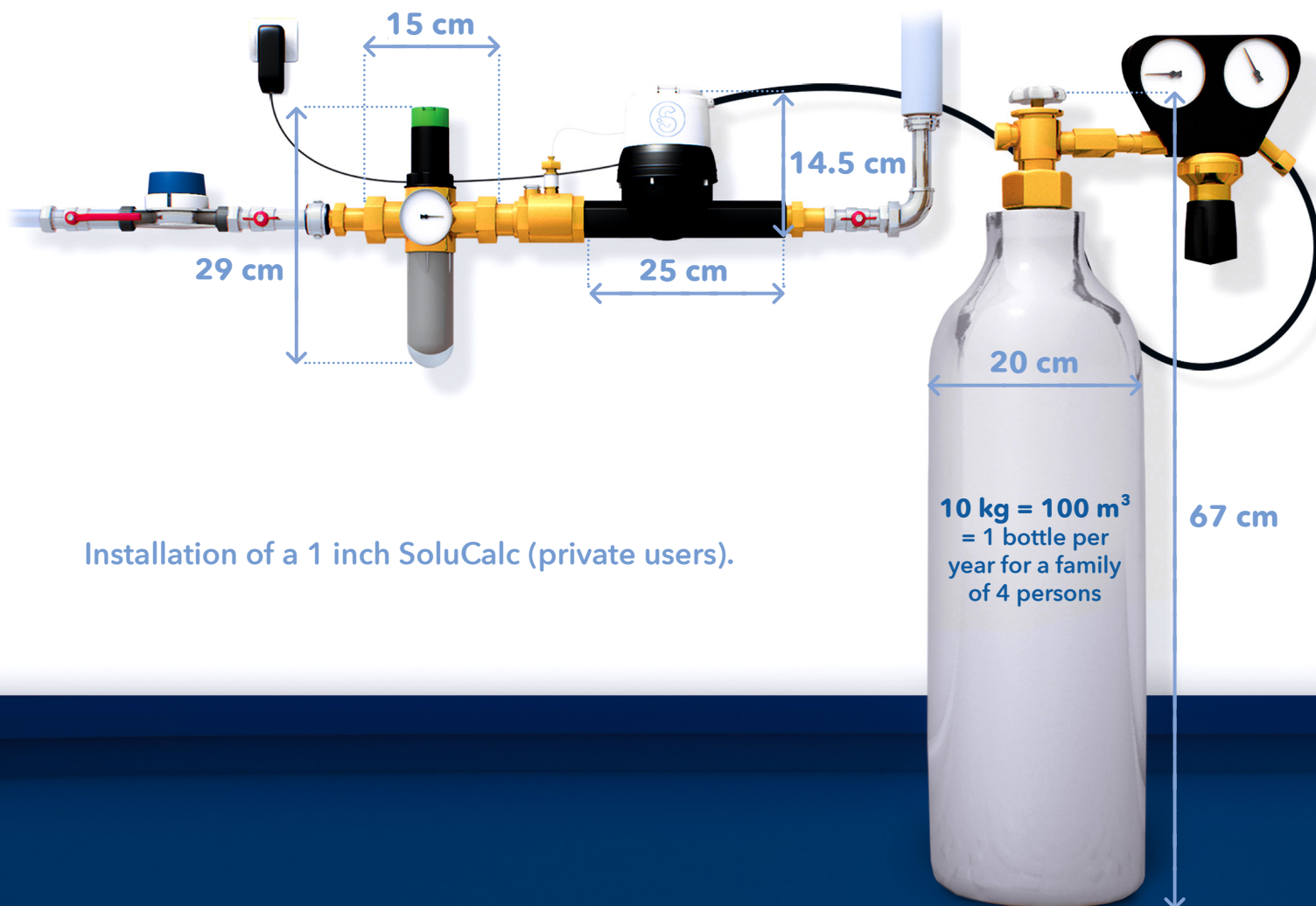
NO REGENERATION



COMPACT



NO DISCHARGE



Installation of a 1 inch SoluCalc (private users).

Who is using it?

Over 20,000 SoluCalc have already been installed in private homes and companies such as Ikea, Décathlon and Kinepolis.



SoluCalc is 10 times less expensive to use than a salt softener

Calculation based on 100 m³ per year (4 persons)

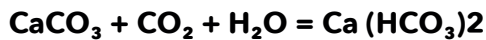
Salt softener		SoluCalc	
Regeneration (5 m ³)	€ 30	No regeneration	€ 0
Maintenance	€ 125	No maintenance	€ 0
100 kg of salt	€ 45	10 kg of CO ₂	€ 25
Annual cost	€ 200	Annual cost	€ 25
Cost over 10 years	€ 2000	Cost over 10 years	€ 250

A family of 4 can save 1750 € compared to a salt softener, while keeping refreshing drinkable water with no added taste, and respecting the planet.

How does it work?

By injecting food grade CO₂ in the water, limescale is dissolved in the water and is therefore evacuated with the flow of water. From a chemical point of view, calcium carbonate (limestone) is transformed into calcium bicarbonate following the injection of CO₂.

This is the formula:



Why is this interesting?

Because the benefit of calcium bicarbonate is twofold:

- **it is soluble:** it therefore dissolves in water and is evacuated with the flow of water
- **it is non-encrusting:** it is no longer capable of attaching to resistors, pipes, even in hot water ...

What about hot water?

The reaction is stable at domestic temperatures (boiler, water heater, etc.) and up to 95 degrees Celsius.

What about boiling water in a pan? No problem since calcium bicarbonate remains dissolved in the water.

How do you install it?

The SoluCalc is installed just after the water meter. Before the SoluCalc comes a pressure regulator with filter (available as an option) which protects the SoluCalc from any impurities in the city water.

Please note that a 220V outlet must be available about one meter from the SoluCalc.

A tested and certified product

The SoluCalc has ACS certification (Eurofins): Certificate of Sanitary Conformity.

It has been tested by a recognized independent body, the BBRI, which says:

"Among devices tested, the CO₂ injection device is particularly efficient, offering a result quite close to the salt softener set at 15°F."

Source: BBRI publication - CSTC-Contact n°56 (4-2017) - article available on request.

Result of the test carried out by Test Achats: *"Efficiency: very good"*

Extract from the article in Test Achats 639 - March 2019.



How do you adjust settings?

The SoluCalc requires settings to be carried out once manually upon start-up: a pressure difference of 0.2 bar between the CO₂ pressure and dynamic water pressure.

Settings procedure: available in video and in the user manual.

Since adjusting settings is a manual procedure, the water pressure must be stabilized at X bars in order to adjust the SoluCalc at X + 0.2 bar. An efficient pressure regulator is therefore essential to guarantee the correct functioning of the SoluCalc. This is the only setting which has to be adjusted, as the SoluCalc is designed to adjust CO₂ injection levels depending on the instantaneous water flow.

Will SoluCalc cleanse my whole installation?

By keeping the initial settings, the SoluCalc will be able to clean your installation very gently and slowly. The limescale encrusted in your installation will be slowly dissolved in the water and evacuated with the water flow.

How long does installation take?

It takes about 2 hours to complete installation, including assembly making the necessary adjustments.

What about maintenance?

The SoluCalc does not require any maintenance.

And warranty?

The SoluCalc has a 5 year warranty.



Why is water hardness not affected?

Water hardness is a measure of the amount of calcium in a liter of water. Unlike salt softeners which remove calcium from the water, SoluCalc has no effect on water hardness, since it transforms calcium carbonate into calcium bicarbonate. Calcium level measurements are therefore identical before and after the SoluCalc, water hardness is the same. SoluCalc does not remove calcium from your water, it gets rid of problems caused by limescale. However, it is possible to check the effectiveness of your SoluCalc by measuring the pH.

What are the limits?

When water evaporates, calcium bicarbonate still present in the water remains as a white powder that does not stick. This residue is very easy to clean since it is no longer limescale; a simple wipe with a damp cloth is enough. In cases where there is complete evaporation on a heat source (evaporative steam oven, professional dishwasher), calcium bicarbonate tends to anneal on the resistance since it cannot evaporate.

Cases of evaporation without a heat source are no problem since calcium bicarbonate can be removed with a simple wipe of a dry cloth. There will always be a white layer left in your kettle, this is calcium bicarbonate that has annealed on the resistance. On the other hand, your coffee machine, boiler, water heater, and all your heating equipment are protected.

Have you heard about corrosion?

It is true that injecting large amounts of CO₂ in water tends to acidify the water. Water with a too low pH (<6) has a tendency to corrode pipes.

This is why the SoluCalc has been designed with elements tested and approved for more than 10 years to guarantee micro-dosing of CO₂, in order to inject exact minimal quantity necessary to treat the water, therefore avoiding any corrosion problem. You can easily check the pH of your water with a simple pH meter.

What about after-sales service?

The majority of after-sales service concerns settings that have been modified: if the CO₂ pressure is lower than that of water, the SoluCalc cannot inject CO₂ due to physical constraints.

The first thing to do is to carry out the settings procedure again (30 seconds procedure, very easy to perform - available in video and in the user manual). If the problem is not fixed after a few days, feel free to contact us directly by email or by phone, we will happily carry out the diagnostic procedure with you. If your device is found defective, you will be able to exchange it under warranty.

What is the CO₂ consumption?

SoluCalc uses food grade CO₂, it is the same gas used in beer pumps in cafes and restaurants. It is widely available.

A 10 kg bottle can treat 100 m³ of water on average, which is the average annual consumption for a family of 4 people.

Does CO₂ present a risk?

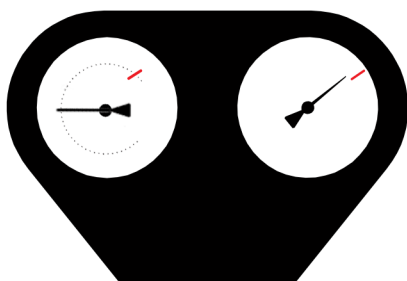
CO₂ does not explode, it is also used in many fire extinguishers. In addition, the SoluCalc uses food grade CO₂ which is the same as in SodaStream appliances, in beer pumps,... You just have to know that it is a suffocating gas which is heavier than air.

In the event of a leak, it therefore tends to fill a room from below. You must therefore be careful for installations that require large amounts of CO₂ in a room without ventilation. For risk calculations, note that 10 kg of CO₂ represent approximately 4.5 m³ of gas. This should therefore be calculated according to the room in which cylinders will be installed.

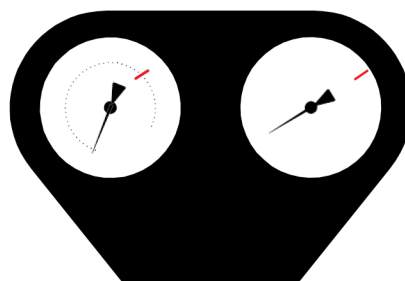
How do I know if the bottle is empty?

When the CO₂ bottle is empty, the pressure indicated on the left pressure regulator pressure gauge drops to 0. It's not like a car's fuel gauge that goes down as you use it.

The CO₂ manometer indicates 0 when there is no more gas in the cylinder. Customers usually notice it because limescale returns to their installation.



Full cylinder



Empty cylinder

Option: LED control box



Which model for which use?

For private individuals



1 inch SoluCalc Kit

Max flow 5 m³ per hour

Dimensions: 10 x 25 x 14 cm

For communities



2 inch SoluCalc Kit

Max flow 20 m³ per hour

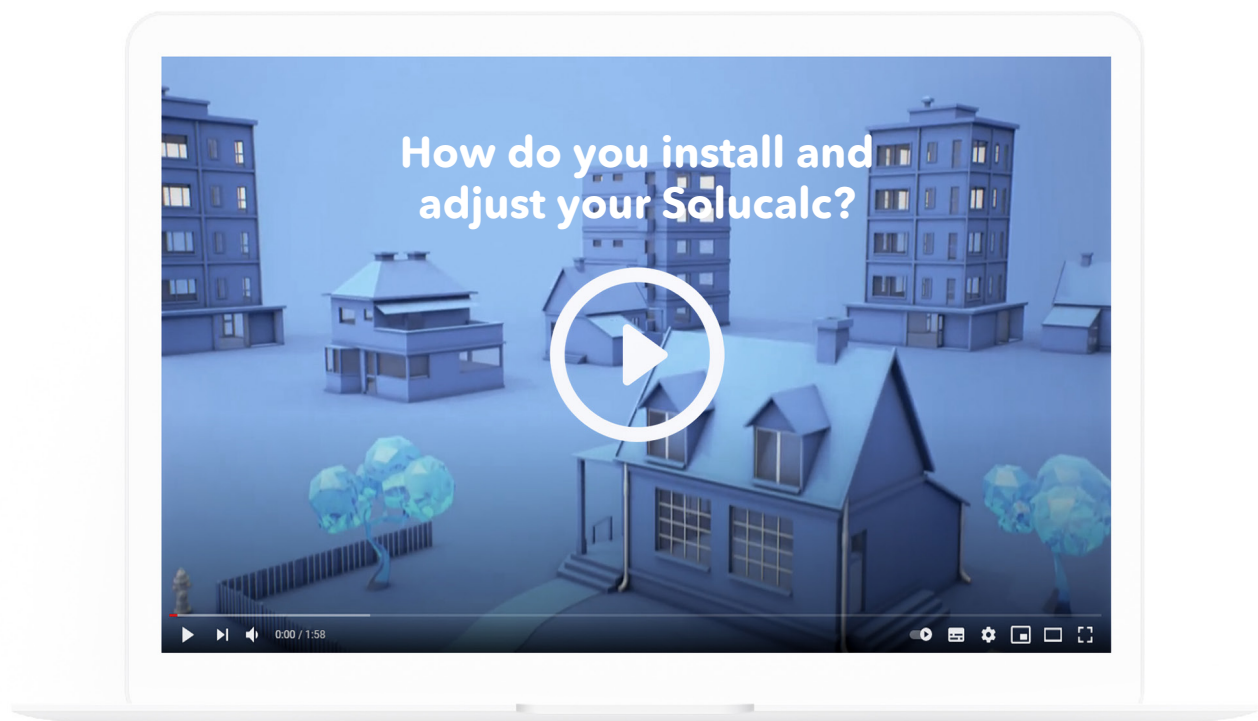
Dimensions: 40 x 20 x 16 cm

- 1 1 inch SoluCalc basic kit.
- 2 1 inch pressure regulator + valve (optional).
- 3 CO₂ cylinder (optional).

Any questions?

Our team is available Monday to Friday from **8 a.m. to 5 p.m.** on **+32 2 888 70 80** or by email to this address: **info@solucalc.com**

Also discover our **videos** available on Youtube:



Discover our videos online by following the QR codes below



Limescale can cost you
up to 500 euros per year



A salt softener?
Yes, but...



How to install and adjust
your Solucalc, and how
to check the pH



Your SoluCalc approved installer:

A large, empty rectangular box with a thin blue border, intended for the user to write the name of their SoluCalc approved installer.

Hydro Bio SPRL - Manufacturer of the SoluCalc
info@solucalc.com - **www.solucalc.com**