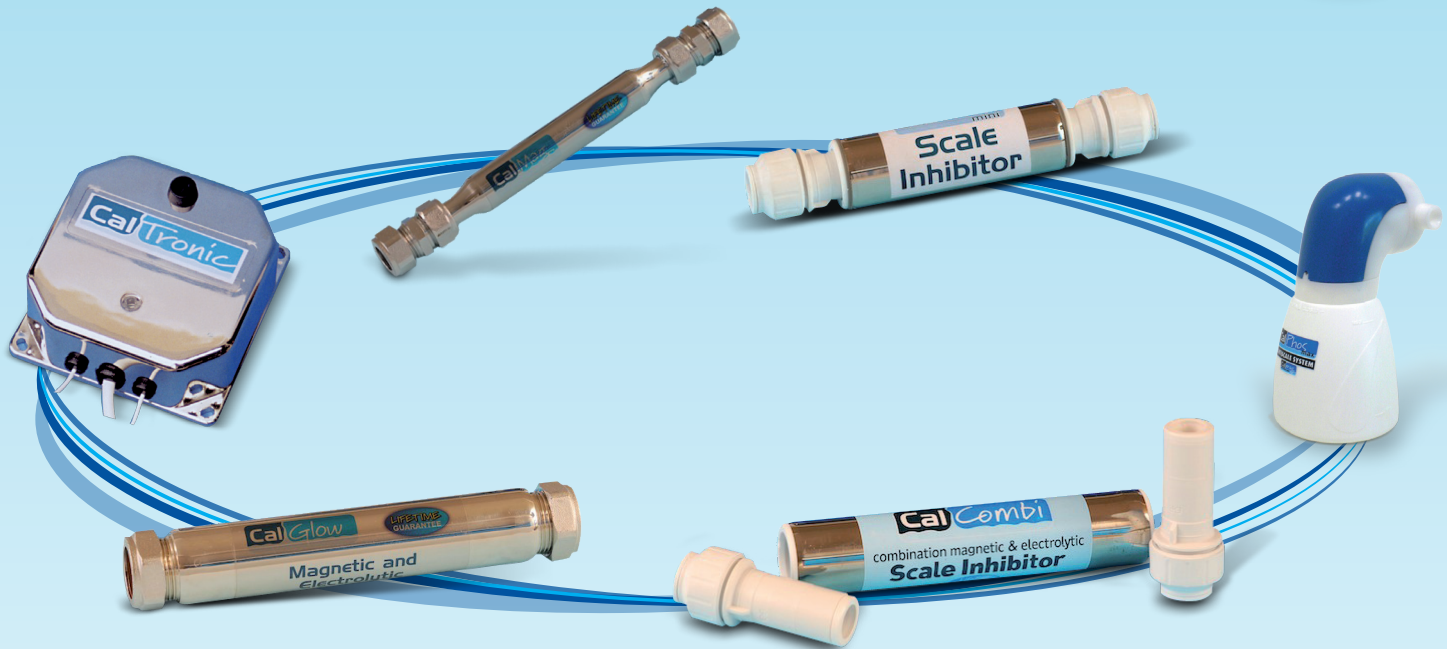




The complete range of...



**CalCombi** **CalMag** **CalGlow** **CalLytic** **CalTronic** **CalPhos**

Limescale prevention for boilers, cylinders, showers, washing machines, dishwashers and all other heating appliances.

**ESSENTIAL FOR ENERGY SAVINGS**



**BEWARE OF IMITATIONS**

**LIFETIME GUARANTEE**

...Scale Inhibitors for your home



Scale wastes both energy and financial resources. Just one eighth of an inch of limescale **reduces heating efficiency by 25%\***.



Scale inhibitor average cost £50 **Potential annual saving £200\***.

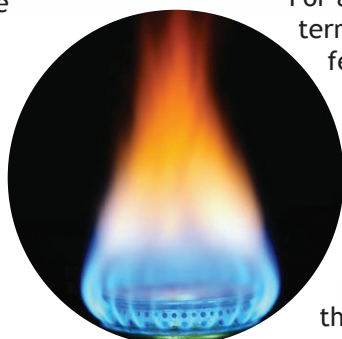
## Limescale prevention essential for energy savings

### Problems caused by Hard Water

Calcite, the main cause of scale, is the most common form of calcium carbonate and occurs naturally as a natural ingredient of chalk, limestone and marble. Water passing over and permeating through such rocks dissolves calcite when this water subsequently flows through a water system the calcite participates out to form a very hard scale on surfaces.

When hard water is heated, or evaporation takes place, the problems are exacerbated. Calcite forms ever growing layers of rock-like deposits until eventually pipes, jets, and equipment become totally blocked.

The problem increases as the water gets hotter. Water containing 145ppm of calcite, flowing at 3,5 litres per minute, produces in one year 4.8 kilograms of scale at 60°C. At 80°C this rises dramatically to a massive 29.9 kilograms!



Scale wastes both energy and financial resources just one eighth of an inch of limescale reduces heating efficiency by 25%. It is also very expensive to remove, descaling pipes and boilers alone costs British industry over £800m each year.



It has been shown that a heat exchanger surface with 1mm limescale deposit requires approximately 8% more energy to achieve the same output. Consequently, the energy saving benefits of a scale-free boiler are such that it makes sense to err on the side of caution.

For a modest outlay, the householder will see long term benefits in terms of reduced energy bills and fewer boiler breakdowns. Research indicates that modern high efficiency boilers work at higher temperatures than standard boilers efficiency boilers, temperatures fluctuate more, waterways tend to be narrower and heat exchangers thinner so that limescale build up has a more serious effect on performance sooner than would otherwise be the case.



Since 2003 electricity bills have risen by £141 to **£383\*** and gas prices by £141 to **£630\***.



**9 grams** of scale reduces boiler efficiency by **5.6%**. Fuel consumption and CO<sub>2</sub> emissions increase by that amount\*.



Limescale occurs in: Heat exchangers  
Hot water cylinders  
Central heating pipe work. We can help you to...

# Helping your customer

## Find out what the problem is

It is important to ascertain from your customer the problems they are experiencing with water hardness. This information will enable you to advise them on the correct product.

## Tell tale signs

If you live in a hard water area, 60% of the UK does, you will know the tell tale signs - furring of appliances, scale deposits in a heating system, noisy radiators and reduced flow and efficiency.

It is important to know the level of water hardness and putting the correct solution in place can save money.

### Water Hardness Chart

DEGREE'S CLARK	PPM (milligram per ltr.)	SOFT HARD LEVEL
0	0	SOFT
1	14	
2	29	
3	43	MODERATELY SOFT
4	57	
5	71	
6	86	SLIGHTLY HARD
7	100	
8	114	
9	129	
10	143	MODERATELY HARD
11	157	
12	171	
13	186	HARD
14	200	
15	214	
16	229	
17	243	
18	257	
19	271	
20	286	VERY HARD
21	300	
25	357	
29	414	EXTREME
30	429	
40	571	
50	714	

## Water hardness

There are two types of hardness. Temporary hardness, which comes out of the water when it is heated and permanent hardness which is unaffected by heating. Measuring the extent of water hardness and the effect on appliance efficiency is the key to providing the appropriate solution.

USE THESE CHARTS IN CONJUNCTION WITH CALTEST RESULTS TO RECOMMEND FOR CORRECT CALMAGI PRODUCT...

\*Information taken from British Water Authority

SCALE THICKNESS (mm)	AVERAGE EFFICIENCY LOSS
0.4	4 %
0.8	9 %
1.6	11%
3.2	25%
4.8	30 %
6.4	40 %
9.5	55 %
12.7	70 %

### SCALE POTENTIAL

100 ppm will give 1lb/0.5 kg scale potential per 1,000 gallons/4546 litres of water.

#### EXAMPLE

Hardness level = 300 ppm  
Water used = 2,000 gallons/9092 litres

#### TOTAL SCALE POTENTIAL

3lb x 2 = 6lb scale per day  
1.5kg x 2 = 3 kg scale per day

# Scale Inhibitors

## Benefits include:

- Lifetime guarantee
- No maintenance
- Environmentally friendly
- No chemicals
- Models to suit all applications
- Combination products
- Whole house protection
- Durable nickel plating
- Speedfit fittings - quick installation
- WRAS approved
- Compression fittings

Calmag Limited combine the best magnetic, electrolytic, electronic & polyphosphate technology to offer the optimum choice in scale inhibitors.

- Non intrusive
- Existing scale removed
- Proportional dosing
- 15mm or 22mm installations

## Magnetic and Electrolytic Units



CalCombi with Fittings



CalGlow 22



CalGlow 15



CalCombi Mini

Product	Connection type	Connection size	Max Temperature (°C)	Max Pressure (bar)	Single appliance or whole house protection
CalCombi	John Guest Speedfit	15mm & 22mm	40	12	Whole house
CalCombi Mini	John Guest Speedfit	15mm & 22mm	40	12	Whole house
CalGlow 15mm	Compression	15mm	80	12	Whole house
CalGlow 22mm	Compression	22mm	80	12	Whole house

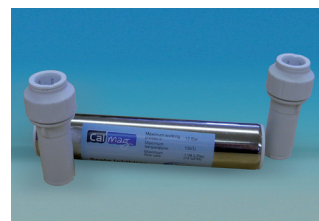
## Magnetic Units



CalMag 15



CalMag 22



CalMag PF

Product	Connection type	Connection size	Max Temperature (°C)	Max Pressure (bar)	Single appliance or whole house protection
CalMag 15	Compression	15mm	80	12	Whole house
CalMag 22	Compression	22mm	80	12	Whole house
CalMag PF	John Guest Speedfit	15mm & 22mm	40	12	Whole house



## Electrolytic Units



CalLytic Mini



CalLytic 15



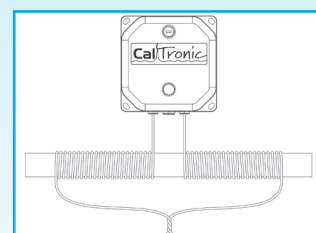
CalLytic 22

Product	Connection type	Connection size	Max Temperature (°C)	Max Pressure (bar)	Single appliance or whole house protection
CalLytic Mini	John Guest Speedfit	15mm & 22mm	40	12	Whole house
CalLytic 15	Compression	15mm	80	12	Whole house
CalLytic 22	Compression	22mm	80	12	Whole house

## Electronic Units



CalTronic



Line drawing installation

Product	Connection type	Connection size	Max Temperature (°C)	Max Pressure (bar)	Single appliance or whole house protection
CalTronic	Wrap around	15mm & 42mm	Not Applicable	Not Applicable	Whole house

## Polyphosphate Units



CalPhos 15



CalPhos Max

Product	Connection type	Connection size	Max Temperature (°C)	Max Pressure (bar)	Single appliance or whole house protection
CalPhos Max	Compression	15mm	40	7	Whole house
CalPhos 15	Compression	15mm	40	7	Single appliance

Replacements	Life of Replacements	Product
CalPhos Max R for CalPhos Max	6-12 months	Polyphosphate liquid
CalPhos R for CalPhos 15 (8 per pack)	3-6 months each	Polyphosphate powder block

# Scale Inhibitors

## What they are...

Scale inhibitors are installed to reduce, prevent or remove the formation of hard (lime) scale in domestic hot and cold water systems or for scale and corrosion inhibition in central heating systems in areas which are supplied with hard water. It is acknowledged that the assessment of some aspects of water quality can be very subjective and personal, and so any other changes in water quality should be regarded as extra benefits rather than being part of the reason for installing a scale inhibitor.

**The main reason for the installation of a scale inhibitor is for scale reduction and/or scale removal.**

## What they are not...

Scale inhibitors do not remove the hardness minerals and so they will not provide softened water. This is why they are called inhibitors. This is one of the factors which differentiate them from water softeners which change the chemical composition by replacing the calcium and magnesium with sodium from a salt (brine) solution.

## Quick Guide

	Whole house protection	Maintenance free	Lifetime guarantee	15mm installation	22mm installation	Space constraints	Compression unit	Pushfit unit	No plumbing	Magnetic & Electrolytic	Magnetic	Electrolytic	Electronic	Polyphosphate
CalCombi	✓	✓	✓	✓	✓			✓		✓				
CalCombi Mini	✓	✓	✓	✓	✓	✓		✓		✓				
CalGlow 15	✓	✓	✓	✓			✓			✓				
CalGlow 22	✓	✓	✓		✓		✓			✓				
CalMag 15	✓	✓	✓	✓			✓				✓			
CalMag 22	✓	✓	✓		✓		✓				✓			
CalMag PF	✓	✓	✓	✓	✓			✓			✓			
CalLytic Mini	✓	✓		✓	✓	✓		✓				✓		
CalLytic 15	✓	✓		✓		✓	✓					✓		
CalLytic 22	✓	✓			✓	✓	✓					✓		
CalTronic	✓	✓	✓	✓	✓	✓			✓				✓	
CalPhos Max	✓			✓	✓		✓							✓
CalPhos 15				✓		✓	✓							✓

# WRAS<sup>®</sup>

Water Regulations Advisory Scheme

*This certifies that*

**CALMAG YORKSHIRE LTD.**

*has had the undermentioned product examined, tested and found, when correctly installed, to comply with the requirements of the United Kingdom Water Supply (Water Fittings) Regulations/Scottish Water Byelaws.*

**CAL COMBI, CAL COMBI MINI, CAL MAG, CAL GLOW & CAL LYTIC IN-LINE SCALE INHIBITORS**

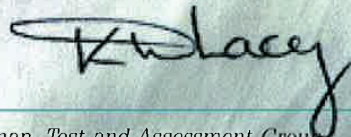
*This certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current status of an approval must be obtained from the WRAS Directory ([www.wras.co.uk/directory](http://www.wras.co.uk/directory))*

*The product so mentioned will be listed in the Water Fittings and Materials Directory for a period until:*

**31 MAY 2017**

**1205043**

*Certificate No.*



*Chairman, Test and Assessment Group*



*Secretary*

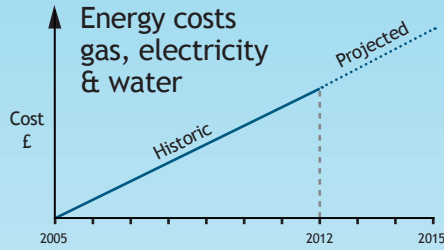
**WRAS**  
**APPROVED  
PRODUCT**



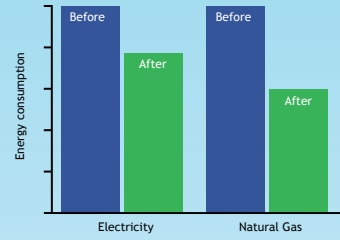
**FACT**



The rising cost of bills\*



Energy savings after water treatment\*



**Products available:**

Scale inhibitors  
Water softening  
Water filtration

UV disinfection  
Reverse osmosis  
Commercial products



- Certified ISO 9001 QMS company
- Products are 100% wet tested
- Long term guarantees
- Members of the UKWTA and DWTA
- Dedicated Technical Support Team



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