





## The Complete Chemical Collection

to protect your home





See pages 4 -5 for details.

for use with any of our chemical products.

# Calmag Welcome to water treatment excellence

At Calmag, our water treatment experts are specialists in the development and manufacture of the most diverse range of water treatment solutions.

Founded in 2002, Calmag is the only independently owned UK manufacturer to produce a complete range of products and services to meet the needs of both domestic and commercial customers. Our continuous investment in stringent design, production and testing programmes are your assurance of great quality, **reliable** performance and best value, all backed by long Calmag quarantees, technical support and after sales care.

Calmag domestic products offer the widest choice of home water solutions to deliver the quality of water you want, with the added benefits of reduced energy usage and significant savings on household bills and maintenance costs. Calmag Commercial specialists design products to exacting project specifications, resulting in the most **effective and efficient solutions** to meet heavy industrial demands.

Our work with industry partners and trade associations reflects our total commitment to supporting best practice and the continual development of water treatment excellence. Professional installers have confidence in Calmaa, with products that give optimum performance combined with ease of installation. Our many customers include some of the world's largest plumbers' merchant chains, UK independent merchants, and public sector organisations.

#### Tried, tested and approved

Our **professional range of chemicals** and **powerflushing** products can help desludge systems, minimising corrosion and preventing black iron oxide formation which results in cold spots on radiators, component failure and efficiency loss.

Calmags product range also includes scale inhibitors, water softeners, water filters, ultra violet disinfection, reverse osmosis, pH correction, nitrate removal, iron removal, water chillers, calcium treatment, chemical inhibitors and cleaners.

#### We're always here to help

If you have any queries or require advice on any of our products, please give our Helpline a call on: **01535 210320** or visit **www.calmaaltd.com**. You can always rely on us for **technical support** and after-sales care.





#### Water treatment can help to:

- Minimise the corrosion of metals within the system
- Inhibit the formation of corrosion
- Inhibit the formation of scale and sludge
- Inhibit the growth of microbiological organisms
- Maintain or restore the energy efficiency of the system
- Neutralise and dispose acidic waste safely with out damaging the environment.

## The importance of water treatment

There are an estimated 17 million gas boilers in the UK, with around 1.5 million new boilers installed each year.

Following the Government's decision to require virtually all new boilers to be SEDBUK A rated boilers following the changes to Part L of the Building Regulations, rise has been given to areas of water treatment that need to be addressed which followed with the Domestic Heating Compliance Guide.

Water treatment fulfils a number of rolls within domestic central heating systems and can be summarised to minimise the corrosion of metals within the system, to inhibit the formation of the scale and sludge, to inhibit the growth of microbiological organisms and to maintain or restore the energy efficiency of the system.

Boiler noise, pump failure and cold spots are problems that can be rectified by correct treatment and cleaning. Dirty central heating systems can **increase fuel bills by up to 35%** something that homeowners will be keen to remedy.

Powerflushing is the most efficient way to pre-commission a new installation or clean an existing system. By flushing with mains water alone, around 10% of the debris in a system is removed. This can be **increased by up to 30%** by adding a powerflushing unit to the process.

To increase this figure even further, you can combine powerflushing with the use of chemicals such as cleansers, sludge, flux, silt and descaling chemicals, which will **remove** up to 80% of the contaminants present.

The Building Regulations state that during the final filling of the system, a chemical water treatment formulation should be added to the primary circuit to control corrosion and the formation of scale and sludge.

Added to this, boiler manufacturers are increasingly reluctant to honour warranty repairs where they suspect that the problem has been caused or exacerbated by debris or sludge in the system.

Independent research carried out by GasTec has confirmed that sludge build up in radiators on a normal domestic heating system can reduce their overall effectiveness by as much as **15%**. In addition, it says that proper cleansing of a system using a chemical additive to "break up" sludge deposits combined with a powerflush of the system will result in a greater uniformity of radiator temperature and result in a reduced risk of system imbalance.

#### Extract taken from the Domestic Building Services Compliance Guide

#### 4.0

#### System Preparation and water treatment

**New Systems** 

#### a. Central heating systems should be thoroughly cleaned and flushed out before installing a new boiler.

- **b.** During final filling of the system, a chemical water treatment inhibitor meeting the manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.
- **c.** Installers should also refer to the boiler manufacturer's installation instructions for appropriate treatment products and special requirements for individual boiler models.
- d. Where the mains total water hardness exceeds 200 parts per million, and if required by the manufacturer, provision should be made to treat the feed water to water heaters and the hot water circuit of combination boilers to reduce the rate of accumulation of limescale.

#### Supplementary info

Inhibitors should as a minimum be BuildCert approved.

Limescale can be controlled by the use of chemical limescale inhibitors, combined corrosion and limescale inhibitors, polyphosphate dosing, electrolytic scale reducers or water softeners.





## Introducing the Universal Doser System

Our unique & fast squeezable applicator!

Introducing our patented Universal Doser System designed and developed exclusively by Calmag for use with any chemical to quickly dose a central heating system.

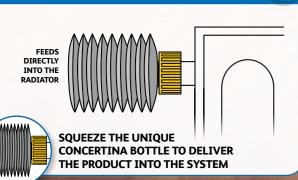
Any chemical from our comprehensive brochure can be poured into the universal doser and then squeezed into a central heating system using the concertina bottle via the various adaptors that fit the top of the bottle. This makes the application of

chemicals into a heating system incredibly easy, fast and mess free. On average it can take as little as 5 minutes to dose an entire system with the Universal Doser System. This product comes with all the adaptors you need to guickly and efficiently dose most central heating systems.

CHARLES WYSOCKI - CALMAG



#### Installation through a bleed screw



Adaptor for radiator bleed screw (included with the

Universal Doser System)

#### **Installation through a radiator** (including bleed screw)

- 1 Turn central heating off
- 2 Isolate one radiator in which the product is to be injected
- 3 Drain approximately half litre of water from the isolated radiator
- 4 Remove one ½" BSP fitting or bleed screw from the top of the isolated radiator
- 6 Screw doser directly to the radiator or screw in using the bleed screw adaptor. Do not squeeze bottle during this operation

#### Installation through a radiator

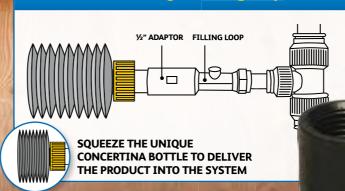
SQUEEZE THE UNIQUE **CONCERTINA BOTTLE TO DELIVER** THE PRODUCT INTO THE SYSTEM



- 7 Squeeze contents into the radiator
- 8 Remove bottle when empty
- 9 Replace ½" BSP fitting or bleed screw to radiator and bleed the system
- **10** Refill and bleed the system until the recommended pressure is achieved
- 11 Check for leaks
- **12** System is now ready for use

Note: Cloth may be used to wipe away/contain any excess chemical.

#### Installation through a filling loop



Adaptor for filling loop (included with the

niversal Doser System)

#### Installation through a filling loop valve

- 1 Turn central heating off
- **2** De-pressurise system by opening a bleed screw on any one radiator until the pressure reading on the radiator shows zero bar
- 3 Close bleed screw on the radiator
- 4 The product needs to be injected on the filling loop one-way valve and **NOT** on the braided hose end
- Remove top cap
- **6** Screw on the barrel adaptor to the top of the Doser ½" top. Do not squeeze bottle
- 7 Screw bottle with barrel into the filling loop valve

**PRODUCT** 

8 Squeeze contents into central heating system being careful of any spillages

CHEM-UNI-DOSE

- 9 Unscrew bottle when empty
- **10** Refill central heating system to recommended pressure
- **12** System is now ready for use

Note: Cloth may be used to wipe away/contain any excess chemical.



## CalShot Inhibitor

## **Inhibits corrosion**, scale, boiler noise and hydrogen gassing

CalShot Inhibitor has a special reagent formula which works on reaction to sludge, limescale, flux and other debris through its combination of chemicals.

This fast reacting liquid is water-soluble, non-flammable, and non-acidic, and can, therefore, be used for all types of systems, including copper and aluminium and in addition is environmentally friendly. The main benefit of this product is how it is added to a system. This **unique new product** is an approved concentrate of 330ml which will cope with a standard 100 litre system (the equivalent of a standard four bedroom house).

#### **Key Benefits:**

- The squeeze action concertina bottle doses a system quickly & easily within 5 minutes the job is done saving installers time and money
- It doesn't need any other fittings to dose into a radiator, filling loop or header tank. Adaptors included
- 330ml concentrate formula which will dose a standard system of 10 - 12 rads or 100 litres
- No sprays, no aerosols and is environmentally friendly
- **Energy Saving Trust recommended**
- BuildCert approved product



TO SEE HOW IT WORKS AND FOR INSTRUCTIONS ON INSTALLATION TURN TO **PAGES 4 & 5 >>** 

**PRODUCT** 

**CHEM-CALSHOT** OR CHEM-CALSHOT-BC

#### **How it works**

- ◆ The CalShot is a 330ml

   The CalShot special concentrate inside.
- ightharpoonup It has a ½" BSP male neck on the bottle concertina bottle that has our **L**that fits directly into a standard radiator. Also includes a bleed screw adaptor that fits directly into the radiator.
- Thus, it has a 1/2" BSP female barrel fitting **3** which will fit directly into α filling loop, or alternatively it can be squeezed directly into a header tank

# energysavingtrust.org.u



## CalShot Cleanser

## Cleans and neutralises contaminants in the system

Pre-commissioning cleanser for new and old systems for flushing sludge, flux and installation debris. Suitable for use with all components and will not harm aluminium or other metals. **Requires no neutralisation** and can also remove light rust whilst helping to descale and soften water.

Cleans and neutralises sludge, flux, scale, silt, light rust, debris, oils and grease from new and old systems, as well as flocculating magnetite sludges and particulate residues to facilitate their easy removal with a Powerflush machine. Use at 1% dilution and note that overdoing the system does not present a problem. CalCleanser can be **left in the system for up to 2 weeks** without causing any detrimental effect.

#### **Key Benefits:**

- The squeeze action concertina bottle doses a system quickly & easily within 5 minutes the job is done saving installers time and money
- It doesn't need any other fittings to dose into a radiator, filling loop or header tank. Adaptors included
- 330ml concentrate formula which will dose a standard system of 10 - 12 rads or 100 litres
- Non-toxic. Removes flux, sludge and scale
- Used for new and old systems
- Suitable to use on all metals and requires no neutralisation

TO SEE HOW IT WORKS AND FOR INSTRUCTIONS ON INSTALLATION URN TO **PAGES 4 & 5 >>** 

#### **PRODUCT**

CHEM-CALSHOT-CL

#### **How it works**

◆ The CalShot is a 330ml

■ The CalShot concertina bottle that has our special concentrate inside.

- → It has a ½" BSP male neck on the bottle Lathat fits directly into a standard radiator. Also includes a bleed screw adaptor that fits directly into the radiator.
- ¬ Plus, it has a ½" BSP female barrel **5** fitting which will fit directly into a filling loop, or alternatively it can be squeezed directly into a header tank.





## CalShot Leak Sealer

## Seals any inaccessible leaks and weeping joints within 24 hours

**CalShot Leak Sealer** does not block pumps, valves or air-vents and reduces pressure loss in sealed systems by forming a soft seal within **a short time**. Remains in the system with no need to flush, treating up to 10 radiators.

#### **Key Benefits:** The squeeze action concertina bottle doses a system quickly & easily within 5 minutes the job is done saving installers time and money It doesn't need any other fittings to dose into a radiator, filling loop or header tank. Adaptors included 330ml concentrate formula which will dose a standard system of 10 - 12 rads or 100 litres Repairs small leaks UNIQUE **Curers within 1-24 hours** Maintains pressure in sealed systems Special formula ensures no blockages in pumps, valves or air vents TO SEE HOW IT WORKS AND FOR INSTRUCTIONS ON INSTALLATION TURN TO PAGES 4 & 5 >> **PRODUCT CHEM-CALSHOT-LS** or best results use in

Plus, it has a ½" BSP female barrel

Ifitting which will fit directly into a

filling loop, or alternatively it can be

squeezed directly into a header tank

## Chemical Range

## Protect, preserve, clean and seal with our traditional chemical range

Our professional range of chemicals are just **as effective as competitor products** (see page 15 for comparison chart) but offer even greater value for money. Plus they can now be used with our **Universal Doser System** (see page 4 for details).

#### **Inhibitor** - Protect and Preserve for less Proven triple blend corrosion inhibitor suitable for all metals Manufactured to the recommendations of DIN 51360 and BSI BS2486:1997. **CalProtector** complies with the new including aluminium. **CalProtector** is a very effective triple blend of corrosion inhibitors and is specifically works well Classification, Labelling and Packaging (CLP) Regulation, with steels, aluminium, copper and their alloys, and most which is aligned with the Globally Harmonised System materials found in a heating system. (GHS). Safety Data Sheets (SDS) require to be updated by December 2012 to the new REACH Annex II which Flush the system prior to introducing **CalProtector** and sets out the scope for SDS and CalProtector dose the system at 1 % . Simply pour into the system $\cdot$ conforms to this regulation. **CalProtector** must be left in the system. СНЕМ-СМ100 CHEM-PROTECTOR-1L CHEM-CMAG-CON-CI

#### **Cleanser** - Clean and Preserve for less

Pre-commissioning cleanser for new and old systems for flushing sludge, flux and installation debris. Suitable for use with all components and will not harm aluminium or other metals. Require no neutralisation and can also remove light rust whilst helping to descale and soften water.

Cleans and neutralises sludge, flux, scale, silt, light rust, debris, oils and grease from new and old systems, as well as flocculating magnetite sludges and particulate residues to facilitate their easy removal with a Powerflush machine. Use at 1 % dilution and note that overdoing the system does not present a problem. **CalCleanser** can be left in the system for up to 2 weeks without causing any detrimental effect.



8 THE COMPLETE CHEMICAL COLLECTION

**How it works** 

◆ The CalShot is a 330ml

■ The CalShot

oniunction with **CalShot** 

Tt has a ½" BSP male neck on the bottle

Lathat fits directly into a standard radiator.

fits directly into the radiator.

Also includes a bleed screw adaptor that

hibitor. See Page 6

concertina bottle that has our

special concentrate inside.

# Chemical Range Protect, preserve, clean and seal with our traditional chemical range

#### **Descaler** - Clean and Preserve

1 litre powerful descaler which quickly dissolves limescale and corrosion deposits. CalDescaler loosens and dissolves limescale, corrosion deposits and iron oxides typically found in heating systems with circulation and heat transfer problems. Calmag recommends using the **CalDescaler** for the boiler heat exchange only. Research has shown that limescale only forms above 72°C in a sealed system and is therefore not required in the radiators or pipework. Dose the system with 0.5 litre per 100 litres of system water using a Powerflush machine. **CalDescaler** can be water neutralised and is usually left in the system for a maximum of 30 minutes for badly scaled heat exchangers.



#### Leak Sealer

Leak Sealer which seals inaccessible leaks and weeping joints within 1-24 hours. Does not block pumps, valves or air-vents and reduces pressure loss in sealed systems by forming a soft seal within a short time period. CalSealer remains in the system and there is no need to flush and will treat up to 10 radiators. For best results use in conjunction with **CalProtector**. All products comply with the new Classification, Labelling and Packaging (CLP) Regulation, which is aligned with the Globally Harmonised System (GHS). Our products conform to the new regulations which will be compulsory by June 2015. Safety Data Sheets (SDS) need to be updated by December 2012 to the new REACH Annex II which sets out the scope for SDS and our products conform to this regulation. 1litre, 5litre and 25litre containers are available.





CHEM-CMAG-CON-LS

#### **Silencer** - Clean and Preserve for less

Suitable for new and old systems to shift particles of silt, sludge, sand, iron oxide, and more, and it's suitable to use on all metals, including aluminium. CalSilencer is a flocculent blend that is typically used to shift deposits of silt, mud and sand from open drains and gives the silt particles buoyancy in water by putting a small electrical charge on each particle, causing them to repel each other. Material treated with **CalSilencer** is unlikely to form a solid mass again and this enables the silt and sludge content of a heating system to be removed quickly and effectively. CalSilencer can be left in the system for up to 2 weeks without causing and detrimental effect.



## Powerflush Pack

#### Chemicals to use with either CalFlush or CalFlush Max





Independent research has shown that 80% of central heating systems don't have any form of treatment the other 20% use products as the CalFlush Powerflush Pack - The professional choice!

#### Sludge & Flux Remover

Sludge and Flux Remover cleans and neutralises flux residues debris. oil and grease from new and old systems as well as flocculating magnetite sludges and particulate residues, to facilitate their easy removal with a Powerflush machine. Sludge and Flux Remover is suitable for use with all components. It will not harm aluminium and requires no neutralisation. This product can remove light rust and helps descale and soften water.

#### **Silt Free**

Silt Free is a flocculent blend that is typically used to shift deposits of silt. mud and sand etc. from open drains. Silt Free gives the silt particles buoyancy in water and by putting a small electrical charge on each particle, causes them to repel each other. Material treated with Silt Free will not form as old mass again. This enables the silt and sludge (etc.) content of heating systems to be more easily removed with Powerflushing.

#### Descaler

Powerflush Descaler loosens and dissolves corrosion deposits, limescale and iron oxides typically found in heating systems with circulation and heat transfer problems. Note: All these products are water neutralised' but if time is an issue, use an acid neutraliser on the Powerflush Descaler for faster results. **The contents** of the Powerflush pack are sufficient to Powerflush 2 average domestic heating systems.

Based on 10 radiators per system).



#### The Powerflush Pack includes:

2x Sludge & Flux Remover

1x Silt Free

1x PowerflushDescaler

#### Sludge

used in conjunction with a Powerflush machine



**CHEM-PFP** 

## CalChem 3-in-1

### Calmag's all-in-one chemical inhibitor

Independent research has shown that 80% of central heating systems don't have any form of treatment, CalChem 3-in-1 Chemical Treatment provides an **effective total system protection system**.



**CalChem** has a special reagent formula which works on reaction to sludge, limescale, flux and other debris through its combination of chemicals.

This fast reacting liquid is water-soluble, non-flammable, and non-acidic, and can, therefore, be used for all types of systems, including copper and aluminium. In addition, **CalChem** is environmentally friendly.

The chemical should be added to the system via the filling loop or radiator and then left to circulate. This will then flocculate silt, lubricate valves and pumps, suppress bacterial growth and eliminate the production of gases. It also has an added anti-freeze to cope with cold weather conditions.

The product breaks down any sludge, scale, debris, etc to such a minute amount that it will increase the efficiency of the central heating system together with adding in a corrosion inhibitor to protect against further problems. This is especially beneficial if powerflushing has not taken place and is unique as the only product in the market that offers these benefits. On a system with 10-15 radiators, 1 litre should be sufficient although over-dosing is not detrimental to the system performance.

The system will require a top-up if the water supply has been interrupted for any reason, or new radiators have been added.

A further 1 litre should be added every year to prolong the efficiency of the system and to ensure that any further sludge, scale and silt build-up is re-circulated within the system and

#### Simple & easy to use

CalChem has been formulated to ensure that all you need to do is pour the contents into the central heating system either via a filling loop or a header tank - then leave alone. The product will then break down any sludge, scale, debris, etc to such a minute amount that it will increase the efficiency of your central heating system together with adding in a corrosion inhibitor to protect against further problems.





This product analogy is based on the principle of placing a sugar cube (contaminants) in a glass of water and stirring - the sugar cube is always present but it is in a dissolved state.





Note: Suitable for all types of systems, including copper and aluminium. This fast reacting liquid helps with the flocculation of silt, lubricates valves and pumps, suppresses bacterial and algae growth, eliminates the production of gases which can cause "bumping" and has an antifreeze added within the system to cope with cold weather.

1 LITRE BOTTLE

## Antifreeze

Calmag's combined anti-freeze & inhibitor

With the increase in renewable technology Calmag have launched a combined anti-freeze and corrosion inhibitor which is suitable for central heating and chilled water systems.

The main ingredient of **Mono Propylene Glycol fluid** with added heat transfer system cleaning biocide and corrosion inhibitor fluid gives protection for solar systems and is much less toxic than Mono Ethylene Glycol. Also less harmful to the environment in the event of any spillages.

#### **Key Benefits:**

- Compatible with all metals present in heating and cooling systems
- Antifreeze gives protection to -11°C at a 25% solution and -24°C at a 40% solution
- Anti-bacterial helps prevent any bacterial contamination
- Acts as a heat transfer fluid by keeping any sludges that are in the system, moving
- **Corrosion Inhibitor prevents the** formation of any limescale or corrosion build-up
- The low toxicity formula is adapted for use in solar, central heating and chilled water systems
- Recommended for all solar systems (unless stated otherwise by manufacturer)
- **Maintains efficiency** so extending system life

**PRODUCT** 

5 LITRE JERRY CAN CHEM-ANTIFREEZE-5L 10 LITRE JERRY CAN CHEM-ANTIFREEZE-10L 25 LITRE JERRY CAN CHEM-ANTIFREEZE-25L



# See for yourself Chemical comparisons guide

To be used as a reference guide, not a performance guide.

COMPANY	PRODUCT	CALMAG EQUIVALENT	SEE PAGE
Sentinel	X100	CalProtector / CM100 / CalShot	SEE PAGE 6 & 9
	X200	CalDescaler	SEE PAGE 10
	X300	CalCleanser / CalShot Cleanser	SEE PAGE 7 & 9
	X400	CalSilencer	SEE PAGE 10
	X800	CalSilencer	SEE PAGE 10
	X90	CalSilencer	SEE PAGE 10
	Leak sealer	Sealer concentrate / CalShot Leak Sealer	SEE PAGE 8 & 10
	X500	Not applicable	-
	X700	Not applicable	-
	Deposit remover	Not applicable	-
Fernox	F1	CalProtector / CM 100 / Cal Shot	SEE PAGE 6 & 9
	F2	CalDescaler or CalSilencer	SEE PAGE 10
	F3	CalSilencer	SEE PAGE 10
	F4	Sealer concentrate / CalShot Leak Sealer	SEE PAGE 8 & 10
	F5	CalSilencer	SEE PAGE 10
	MBI	CalProtector / CM100 / CalShot	SEE PAGE 6 & 9
	DS-3	CalDescaler	SEE PAGE 10
	Aphi II	Not applicable	-
	Neutraliser	Not applicable	-
	0540	Not applicable	-
Scalemaster	SM1	CalProtector / CM100 / CalShot	SEE PAGE 6 & 9
	5M2	CalDescaler	SEE PAGE 10
	5M3	CalCleanser / CalShot Cleanser	SEE PAGE 7 & 9
	SM4	CalSilencer	SEE PAGE 10
Kamco	Systemsafe-DM	CalProtector / CM 100 / CalShot	SEE PAGE 6 & 9
	System Pre-Clean	CalCleanser / CalShot Cleanser	SEE PAGE 7 & 9
	System-Hush	CalSilencer	SEE PAGE 10
	Hyper-Flush	CalDescaler	SEE PAGE 10
	Powerflush FX2	Not applicable	-
All-In-One Product NOT AVAILABLE FROM OTHER MAIN BRANDS		CalChem	SEE PAGES 12-13

\*Please note other products are available and the above information was correct at the time of publication and is taken from the public domain.



## Guaranteed confidence in water quality

Calmag's **fresh**, **innovative approach** to water quality has led to the development of the most extensive and effective range of water treatment solutions within the UK water treatment industry – our products are designed with the **needs of our customers** in mind – the merchant, installer and consumer. Calmag's philosophy is based on providing products and services to meet the real needs of all our customers – we don't simply produce what we think you should buy - Calmag have the **unique design** and production capabilities to produce what you want - when you want it!

#### **Beware of imitations!**

There have been a number of instances when customers have been under the impression that they have bought a Calmag product but, in reality, have been supplied with an alternative and inferior product that fails to match the industry leading performance and aesthetic appeal of ours. So we strongly advise customers to **ask for our product by name**. Other products may seem to offer similar qualities, but if it isn't Calmag, it simply won't perform to our standards.

There are **two key ways to check** that you've purchased a genuine Calmag product: they carry the **WRAS approval** on scale inhibitors, and **BuildCert** and **ESTr** approvals on a range of chemical inhibitors.

#### Calmag is a member of and in partnership with:

















For more information or advice call our helpline on **01535 210320** or visit **www.calmagltd.com** 

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