

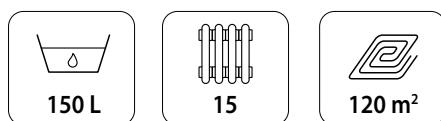
# Chemical additives

## 5709 series



01345/20 EN

replaces dp 01345/19 GB



### Function

Chemical additives are suited to new and existing installations, at low and high temperatures, for heating and cooling.

**C3 CLEANER / C3 FAST CLEANER**, available in a bottle or pressurised canister. It removes sludge, limescale, deposits and detritus from existing heating and air conditioning systems and is used in new installations for commissioning according to the required standards.

**C1 INHIBITOR / C1 FAST INHIBITOR**, available in a bottle or pressurised canister. Offers long-term protection against corrosion and limescale for high and low temperature heating and air conditioning systems.

It keeps the system efficient, making frequent bleeding of radiators unnecessary and prevents cold spots forming, as well as ensuring that pumps and boilers run quietly. Reduces maintenance costs and cuts gas bills.

**C7 BIOCID**, available in a bottle. It is a highly effective biocide used to prevent and control the microbial growth of a wide spectrum of bacteria and other micro-organisms found in heating and air conditioning waters.

**C4 LEAK SEALER**, available in a bottle. This is a liquid sealant that seals micro-cracks and joints that are not perfectly sealed, and is highly effective against inaccessible capillary leaks.



only for C3 CLEANER and C1 INHIBITOR



only for C1 INHIBITOR

### Product range

Code <b>570911</b>	C3 CLEANER	Removes sludge, limescale and detritus	500 ml bottle
Code <b>570912</b>	C1 INHIBITOR	Long-term protection from corrosion and limescale	500 ml bottle
Code <b>570913</b>	C7 BIOCID	Stops the build-up of bacteria and fungi	500 ml bottle
Code <b>570914</b>	C4 LEAK SEALER	Liquid sealant against minor leaks	500 ml bottle
Code <b>570915</b>	C3 FAST CLEANER	Removes sludge, limescale and detritus	400 ml canister
Code <b>570916</b>	C1 FAST INHIBITOR	Long-term protection from corrosion and limescale	400 ml canister

### Chemical-physical characteristics

#### C3 CLEANER / C3 FAST CLEANER

Fluid:	liquid
Colour:	pale brown
Odour:	mild
pH:	7-8
Relative density:	1,15
Solubility (in water):	soluble in hot and cold water

#### C7 BIOCID

Fluid:	liquid
Colour:	pale yellow
Odour:	mild
pH:	3-5
Relative density:	1,015
Solubility (in water):	soluble in hot and cold water

#### C1 INHIBITOR / C1 FAST INHIBITOR

Fluid:	liquid
Colour:	straw yellow
Odour:	mild-aromatic
pH:	8,2
Relative density:	1,1
Solubility (in water):	soluble in hot and cold water

#### C4 LEAK SEALER

Fluid:	emulsion
Colour:	dirty white
Odour:	mild
pH:	7-8
Relative density:	1,0
Solubility (in water):	soluble in hot and cold water

**Chemical additives (C3 CLEANER - C3 FAST CLEANER - C1 INHIBITOR - C1 FAST INHIBITOR - C7 BIOCID - C4 LEAK SEALER) are classified as category 3 as per EN 1717. Install a protective device to prevent backflow.**

## Compatibility

Chemical additives are developed for the cleaning and protection of new and existing heating and air conditioning systems working at both high and low temperatures.

All the products are compatible with iron, mild steel, stainless steel, brass, copper, aluminium; they are not aggressive for plastic or rubber, including plastic seals and piping. Suited for all components commonly used in heating installations.

Can also be used with all types of propylene glycol.

## Disposal

The container is recyclable. Dispose of the contents according to national regulations.



## Safety information

Keep out of the reach of children. For more details on safety, handling and storage, refer to the **safety data sheet available on the website [www.caleffi.com](http://www.caleffi.com)**.

## C3 CLEANER / C3 FAST CLEANER

In **existing installations** they remove sludge, limescale, detritus and deposits. In **new installations** they are used for commissioning according to the required standards.

Formulated for **high and low temperature systems**, radiators, fan coil units and radiant panels.

Suitable for use with on-board circulator (boiler circulator) and with specific washing machines.

Their formula disperses the impurities in the system to create a suspension, so that they can be captured in the filter or dirt separator and removed.

For C3 CLEANER in a bottle, we recommend application with DIRTMAG® dirt separators, for C3 FAST CLEANER in a canister we recommend application with the XS® dirt separator filter, so as to capture and eliminate the trapped impurities. This treatment does not necessarily require emptying of the system.

Suitable for use with the C1 INHIBITOR or C1 FAST INHIBITOR system protection products and with other system treatment products in the Caleffi catalogue.



## Properties

Their neutral, non-aggressive formula contains no toxic substances; they can therefore be handled easily as they are classified as “non-hazardous”. The products have been designed specifically as non-foam forming during use. They are buffered solutions that do not harm any of the materials or components in the system.

## Dosage

The entire contents of a bottle or a canister is enough **to treat 150 litres** of water in the system (approximately 15 radiators or 120 m<sup>2</sup> of radiant panels). No problems have been recorded in the event of overdosage.

The water temperature affects the duration of treatment.

Circulate for:

- min. **1 hour** with high temperature water ( $T > 50\text{ }^{\circ}\text{C}$ )
- min. **4 hours** with low temperature water ( $30\text{ }^{\circ}\text{C} < T < 40\text{ }^{\circ}\text{C}$ )
- up to **1 week** with cold water

## C1 INHIBITOR / C1 FAST INHIBITOR

They protect **new and existing installations** from corrosion and limescale.

Formulated for **high and low temperature systems**. In low temperature systems, it is advisable to use it in combination with a biocide.

Clean the system with C3 CLEANER or C3 FAST CLEANER before using this product.

Compliant with UNI8065 (Italian guidelines) and VDI 2035 (German guidelines) for chemical inhibitors.

## Properties

Their neutral, non-aggressive formula contains no toxic substances; they can therefore be handled easily as they are classified as “non-hazardous”.

**DOES NOT** contain phosphates (which could block the wet bearings in the circulator), borate (carcinogenic), nitrate and EDTA (environmental pollutants).

## Dosage

The entire contents of a bottle or a canister is enough **to treat 150 litres** of water in the system (approximately 15 radiators or 120 m<sup>2</sup> of radiant panels). **Use a double dose for systems filled with sweetened water.**

No problems have been recorded in the event of overdosage. It is nevertheless preferable to overdose rather than underdose, given that in the event of underdosing the treatment is no longer effective.



## C7 - BIOCIDES

This is a highly effective biocide, formulated specifically to control microbial growth in a broad specifically of bacteria and micro-organisms, found particularly in low temperature water heating systems. It can be used to prevent bacterial growth or for system washing and sanitising.



### Properties

Its formula contains BRONOPOL, an organic compound used for protection against microbes. It is compatible with all materials commonly used in heating and air conditioning systems. The product has a low risk in normal conditions of use, however as it is an irritant for the skin and eyes, it should be handled with care using gloves and goggles. Does not contain any substances classified as PBT (Persistent, Bioaccumulative and Toxic).

### Dosage

The entire contents of a bottle or a canister is enough to treat **150 litres** of water in the system (approximately 15 radiators or 120 m<sup>2</sup> of radiant panels). No problems have been recorded in the event of overdosage. It is nevertheless preferable to overdose rather than underdose, given that in the event of underdosing the treatment is no longer effective.

For protective usage, leave the product in the system together with C1 INHIBITOR or C1 FAST INHIBITOR.

For washing or sanitising usage, leave the product in the system together with C3 CLEANER or C3 FAST CLEANER.

**Repeat the application once a year.**

## C4 - LEAK SEALER

This is a liquid sealant that seals micro-cracks and joints that are not perfectly sealed, and is highly effective against inaccessible capillary leaks. It acts by forming an elastic protective film within around 24 hours after entering the system. It can be used as a preventive measure or as an emergency measure in the event of minor leaks.



### Properties







Its formula has been designed specifically to prevent its sealing power from blocking pumps, valves or air vents. It is compatible with all materials commonly used in heating systems. It can be used in combination with all other Caleffi chemical additives.

### Dosage

The entire contents of a bottle or a canister is enough to treat **150 litres** of water in the system (approximately 15 radiators or 120 m<sup>2</sup> of radiant panels). No problems have been recorded in the event of overdosage. It is nevertheless preferable to overdose rather than underdose, given that in the event of underdosing the treatment is no longer effective.

Shake before use; use the whole contents. Use preferably in combination with C1 INHIBITOR or C1 FAST INHIBITOR.

### Treatment summary

		System cleaning	Washing and sanitising	Protection against corrosion and limescale	Protection against bacterial growth	Protection against minor leaks
	C3 CLEANER	●				
	C3 FAST CLEANER	●				
	C1 INHIBITOR			●		
	C1 FAST INHIBITOR			●		
	C7 BIOCIDES		●		●	
	C4 LEAK SEALER					●

*Cleaning and washing treatments: pour into the system and leave to circulate for the required time. Then drain the system to eliminate the impurities collected in the dirt separator.*

*Protective treatments: use in the system and check once a year.*

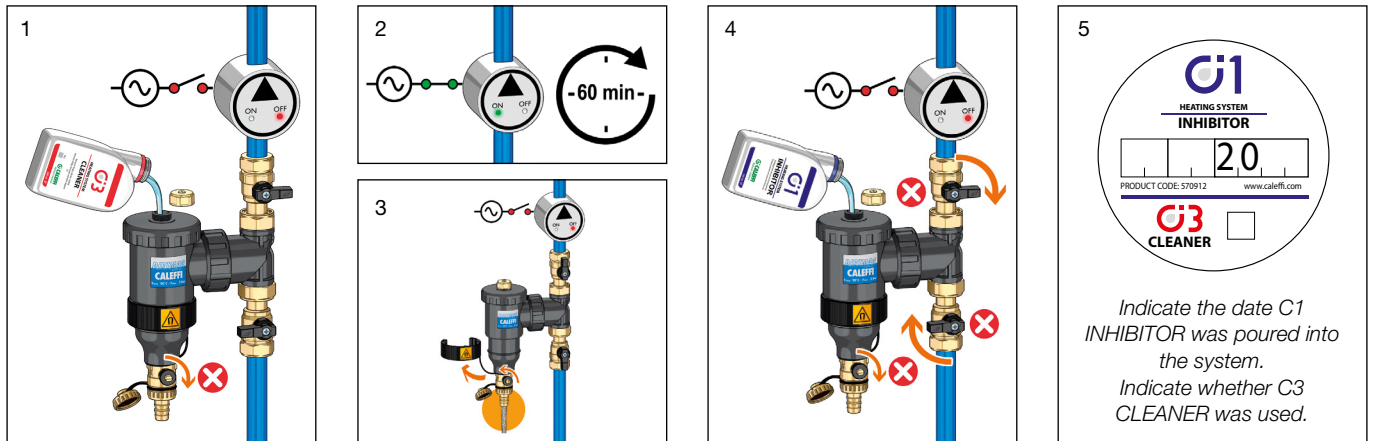
*Treatment "as needed" for minor leaks. Leave in the system.*

**Usage method for bottled chemical additives**

**New and existing systems**

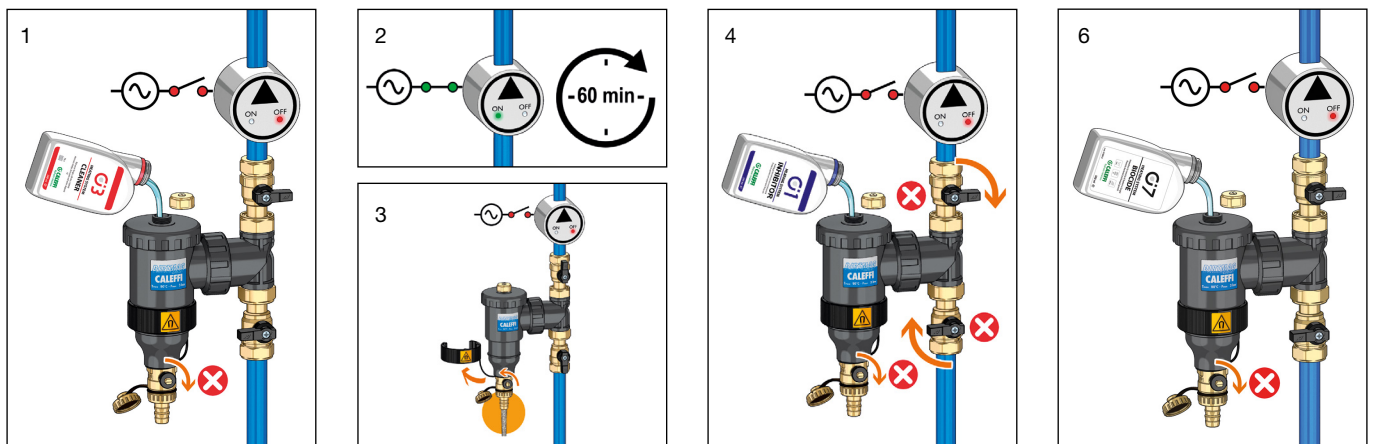
1. Close the shut-off ball valves and drain the water out of the dirt separator. Pour **C3 CLEANER** into the system via a DIRTMAG® series 5453 dirt separator.
2. **Circulate the water** according to the times indicated in the paragraph “dosage”. For very dirty systems, extend the cleaning time to up to 1 week.
3. Drain the impurities through the dirt separator until the water runs clean. *Drain and dispose of the waste according to the regulations in force.*
4. Pour **C1 INHIBITOR** into the system using the same method described for C3 CLEANER.
5. Fill out the label on the bottle cap and stick it on the boiler.

*C1 INHIBITOR can also be used without C3 CLEANER, although this is always recommended for both new and existing installations.*



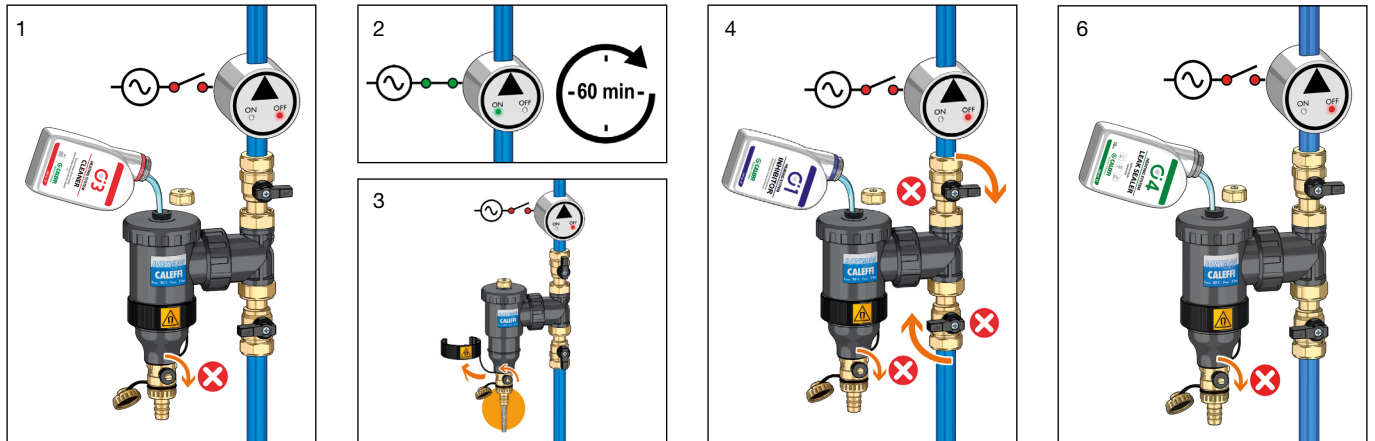
**Low temperature systems**

1. Close the shut-off ball valves and drain the water out of the dirt separator. Pour **C3 CLEANER** into the system via a DIRTMAG® series 5453 dirt separator.
2. **Circulate the water** according to the times indicated in the paragraph “dosage”. For very dirty systems, extend the cleaning time to up to 1 week.
3. Drain the impurities through the dirt separator until the water runs clean. *Drain and dispose of the waste according to the regulations in force.*
4. Pour **C1 INHIBITOR** into the system using the same method described for C3 CLEANER.
5. Open the shut-off valves and circulate the water to mix the product poured in. Close the shut-off valves and drain out the contents of the dirt separator.
6. Pour **C7 BIOCIDE** into the system using the same method described for C3 CLEANER.



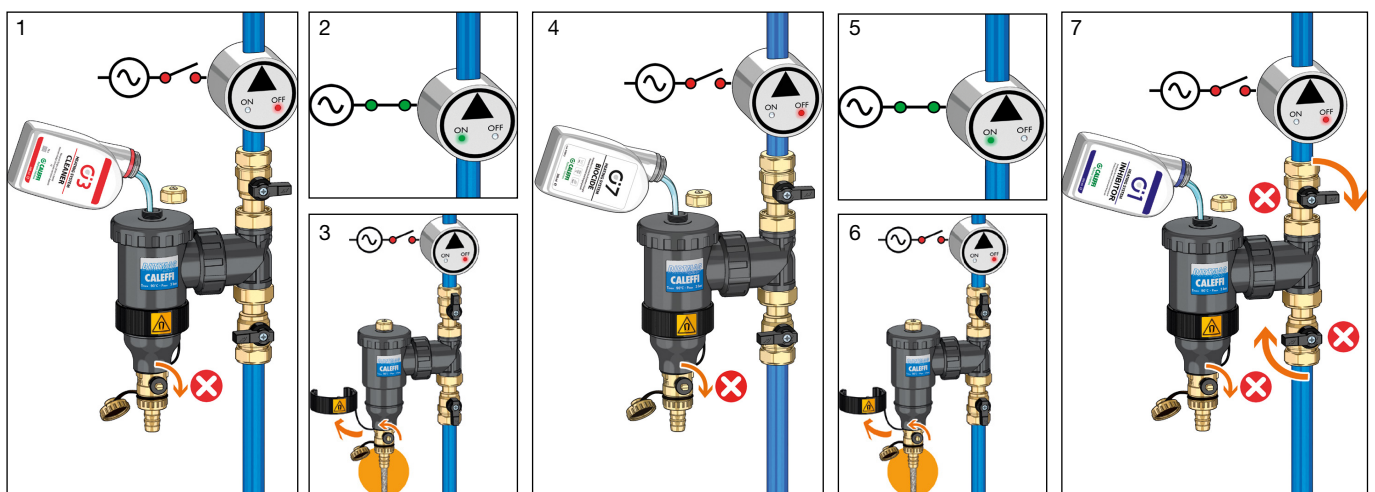
**Systems with minor leaks and micro-cracks**

1. Close the shut-off ball valves and drain the water out of the dirt separator. Pour **C3 CLEANER** into the system via a DIRTMAG® series 5453 dirt separator.
2. **Circulate the water** according to the times indicated in the paragraph “dosage”. For very dirty systems, extend the cleaning time to up to 1 week.
3. Drain the impurities through the dirt separator until the water runs clean. *Drain and dispose of the waste according to the regulations in force.*
4. Pour **C1 INHIBITOR** into the system using the same method described for C3 CLEANER.
5. Open the shut-off valves and circulate the water to mix the product poured in. Close the shut-off valves and drain out the contents of the dirt separator.
6. Pour **C4 LEAK SEALER** into the system using the same method described for C3 CLEANER.



**Existing systems with bacterial and microbiological growth**

1. Close the shut-off ball valves and drain the water out of the dirt separator. Pour **C3 CLEANER** into the system via a DIRTMAG® series 5453 dirt separator.
2. Open the shut-off valves and circulate the water to mix the product poured in.
3. Close the shut-off valves and drain out the contents of the dirt separator.
4. Pour **C7 BIOCIDES** into the system using the same method described for C3 CLEANER. In this way the product fights existing bacterial and microbiological growth.
5. **Circulate the water** according to the times indicated in the paragraph “dosage”. For very dirty systems, extend the cleaning time to up to 1 week.
6. Drain the impurities through the dirt separator until the water runs clean. *Drain and dispose of the waste according to the regulations in force.*
7. Pour **C1 INHIBITOR and then C7 BIOCIDES** into the system using the same methods described for C3 CLEANER.
8. Fill out the label on the bottle cap and stick it on the boiler.





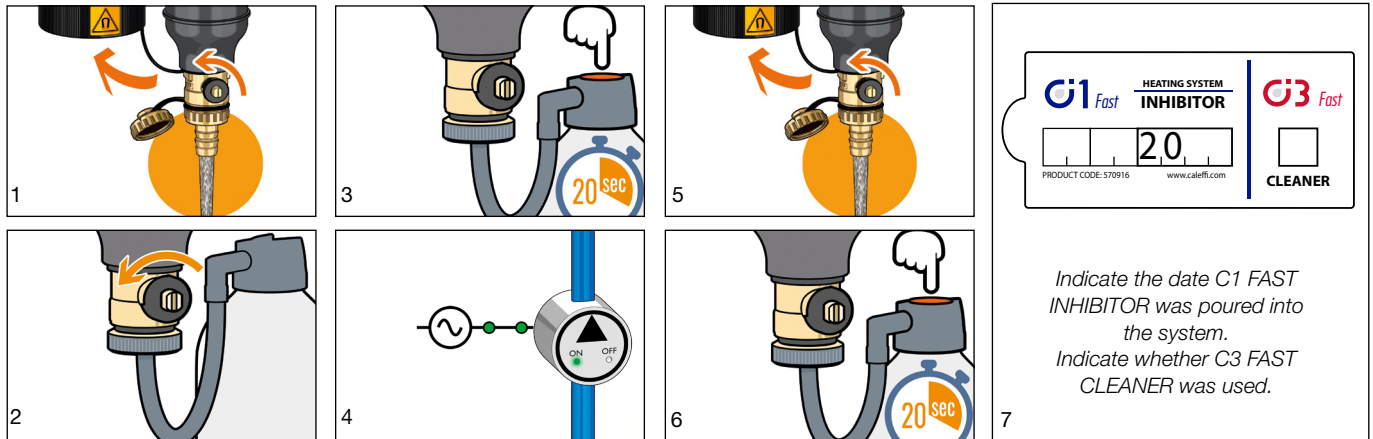
## Usage method for chemical additives in canisters

### New and existing systems

The quick adapter with the canister means **C3 FAST CLEANER** can be added to the system using a DIRTMAG® dirt separator or a 5459 series XS® dirt separator filter.

For application using the DIRTMAG® dirt separator, proceed as follows:

1. Drain the water from the dirt separator to eliminate any deposits from the inside.
2. Unscrew the dirt separator hose connection and screw on the canister using the quick adapter. Reopen the dirt separator drain valve.
3. Apply the **C3 FAST CLEANER** by pressing the relevant button. The entire contents of the canister will be emptied in approximately twenty seconds.
4. **Circulate the water** according to the times indicated in the paragraph "dosage". For very dirty systems, extend the cleaning time to up to 1 week.
5. Drain the impurities through the dirt separator until the water runs clean. *Drain and dispose of the waste according to the regulations in force.*
6. Pour **C1 FAST INHIBITOR** into the system using the same method described for C3 FAST CLEANER.
7. Fill out the label on the canister and stick it on the boiler.



For application using XS® dirt separator filter, proceed as follows:

1. Switch off the system.
2. Close the ball valve and unscrew the magnet holder cap.
3. Remove the filter container, draining the water inside.
4. Screw on the relevant adapter in yellow brass and connect the **C3 FAST CLEANER** canister. Reopen the dirt separator filter ball valve.
5. Apply the **C3 FAST CLEANER** by pressing the relevant button. The entire contents of the canister will be emptied in approximately twenty seconds.
6. Close the ball valve again, replace the filter container, screw the magnet holder cap back on and reopen the ball valve.
7. **Circulate the water** according to the times indicated in the paragraph "dosage". For very dirty systems, extend the cleaning time to up to 1 week.
8. Remove impurities using the dirt separator filter. *Drain and dispose of the waste according to the regulations in force.*
9. Pour **C1 FAST INHIBITOR** into the system using the same method described for C3 FAST CLEANER.
10. Fill out the label on the canister and stick it on the boiler.





## 5709 C3 CLEANER tech. broch. 01345

Removes dirt, limescale and debris.  
Dosage:  
**0.5 litres of product every 150 litres of water in the system.**

Code  
**570911** 0.5 litres



## 5709 C3 FAST CLEANER tech. broch. 01351

Removes dirt, limescale and debris.  
Dosage:  
**0.4 litres of product for every 150 litres of water in the system.**

Code  
**570915** 0.4 litres



## 5709 C1 INHIBITOR tech. broch. 01345

Protects against corrosion and limescale deposits.  
Dosage:  
**0.5 litres of product every 150 litres of water in the system.**

Code  
**570912** 0.5 litres



## 5709 C1 FAST INHIBITOR tech. broch. 01351

Protects against corrosion and limescale deposits.  
Dosage:  
**0.4 litres of product for every 150 litres of water in the system.**

Code  
**570916** 0.4 litres



## 5709 C7 BIOCIDES tech. broch. 01345

Prevents the growth of bacteria and fungi.  
Dosage:  
**0.5 litres of product every 150 litres of water in the system.**

Code  
**570913** 0.5 litres



## 5709 C4 LEAK SEALER tech. broch. 01345

Liquid sealant.  
Dosage:  
**0.5 litres of product every 150 litres of water in the system.**

Code  
**570914** 0.5 litres



### Protection kits

Complete with:  
- dirt separator with shut-off valves **and magnet**;  
- C3 CLEANER;  
- C1 INHIBITOR.



Code  
**KIT545345** with 3/4" dirt separator  
**KIT545346** with dirt separator 1"



### Protection kits

Complete with:  
- XS under-boiler magnetic filter;  
- C3 FAST CLEANER;  
- C1 FAST INHIBITOR.



Code  
**KI545900**

## SPECIFICATION SUMMARY

### Code 570911

C3 CLEANER. Bottled product for removing sludge, limescale and detritus from new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 500 ml for 150 litres of system capacity.

### Code 570912

C1 INHIBITOR. Bottled product for protection from corrosions and limescale in new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 500 ml for 150 litres of system capacity.

### Code 570913

C7 BIOCID. Bottled product used to stop the microbial growth of a broad spectrum of bacteria and other micro-organisms. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Does not contain PBT. Irritant, handle with care. Dosage: 500 ml for 150 litres of system capacity.

### Code 570914

C4 LEAK SEALER. Bottled product used to seal micro-cracks and joints that are not perfectly sealed; highly effective against inaccessible capillary leaks in new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 500 ml for 150 litres of system capacity.

### Code 570915

C3 FAST CLEANER. Product in a canister for removing sludge, limescale and detritus from new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 400 ml for 150 litres of system capacity.

### Code 570916

C1 FAST INHIBITOR. Product in a canister for protection from corrosions and limescale in new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 400 ml for 150 litres of system capacity.

### Code KIT545345 - KIT545346

Protection kits. Complete with:

- dirt separator with shut-off valves and magnet. Technopolymer body. Female threaded connections: 3/4" (KIT575345), 1" (KIT545346). Adjustable for horizontal or vertical installations. Max. working pressure: 3 bar. Working temperature range: 0–90 °C. PATENT PENDING.
- C3 FAST CLEANER, product in a canister for removing sludge, limescale and detritus from new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 400 ml for 150 litres of system capacity.
- C1 FAST INHIBITOR, product in a canister for protection from corrosions and limescale in new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 400 ml for 150 litres of system capacity.

### Code KIT545900

Protection kits. Complete with:

- XS under-boiler magnetic filter. Brass body. Chrome plated. Connections: 3/4" M x 3/4" F. Max. working pressure: 3 bar. Working temperature range: 0–90 °C. PATENT PENDING.
- C3 FAST CLEANER, product in a canister for removing sludge, limescale and detritus from new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 400 ml for 150 litres of system capacity.
- C1 FAST INHIBITOR, product in a canister for protection from corrosions and limescale in new and existing heating systems. Suited for high and low temperature systems. Compatible with all materials commonly used in heating systems. Non-aggressive, neutral formula. Dosage: 400 ml for 150 litres of system capacity.

*We reserve the right to make changes and improvements to the products and related data in this publication, at any time and without prior notice.*