LIMESCALE REMOVER DS-3

- **Restores efficiency to all types of water heater**
- **Powerful acid limescale remover, dissolves up to 50% of its own weight of limescale**
- **Corrosion inhibited**
- **Colour change indicated when exhausted**
- **Safe to apply and easy to use**

Product Uses

Fernox DS-3 is used for removing limescale from any type of water heater to restore its efficiency. It is safe to use with steel, stainless steel, cast iron, copper, brass, PVC, ABS rubber polythene and most plastic pipework.

Limitations: It should not be used with thin gauge or badly corroded aluminium, zinc, galvanised steel, acrylic (e.g. plastic kettles and baths) chromium plated or enamelled surfaces (e.g. baths), concrete and asbestos. When in doubt check with the appliance manufacturer.

Physical Properties

Fernox DS-3 contains Sulphamic acid with inhibitors, indicators and non-foaming surfactants.

Colour:	Yellow
Odour:	Faint
Form:	Crystals
pH:	2 at 1% w/w in water
S.G:	N/A

Application and Dosage

Fernox DS-3 should first be dissolved in hot water, at the maximum concentration of 1 kg per 10 litres of water and a minimum concentration of 250 g per 10 litres of water (10% - 2.5%). Hot water will accelerate de-scaling but do not exceed 80°C. The de-scaling process will release carbon dioxide gas (CO_2), which can cause foaming. Hence, space should be allowed for this before commencing work. A colour change from yellow, through green, to blue indicates the de-scaling power is exhausted. However, the major part of the solution's effort is expended when green is reached and if cold the final change to blue can take a long time. When de-scaling is complete, drain and rinse several times until no traces or odours remain.

DS-3 can be neutralised with Fernox System Neutraliser.

Note: In the case of de-scaling an entire hot water system please see overleaf.

Packaging, Handling and Storage

Fernox DS-3 is supplied in 2 kg and 30 kg containers.

Fernox DS-3 contains Sulphamic acid and is classified as irritant. Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Keep out of reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Avoid release into the environment.

Descaling an entire hot water system

Instructions for use:

De-scaling a domestic hot water system including the storage cylinder, immersion heater, pipework and taps:

1) Turn off boiler and/or the immersion heater.
2) Tie up the ball valve or isolate mains water supply to the cold water storage tank.
3) Open all hot water taps and drain the entire system. Close taps.
4) Fernox DS-3 should first be dissolved in warm water, at the maximum concentration of 1 kg per 10 litres of water, (minimum concentration is 250 g per 10 litres of water).
5) i) Connect a funnel to a suitable length of rubber or plastic tubing. The tubing should fit into (or onto) the cylinder feed connection on the inside of the cold water storage tank and the strong acid solution then introduced via the funnel, or:-
   ii) Where the cold water storage tank serves the hot water cylinder only and no other appliance or outlet, the DS-3 solution can be introduced directly into the tank.
6) Refill the water system until the water level in the cold water storage tank is just covering the cylinder feed connection. This is to prevent over dilution of the acid solution of minimising the total amount of the water in the system.
7) Turn on the boiler and/or immersion heater and heat the acid solution in the hot water cylinder to a moderate temperature (50-60°C / 120-140°F) and keep at this temperature for a minimum of 4 hours (max 12 hours).
8) Open all hot water taps briefly every 10-15 minutes, allowing ½ - 1 pint of acid solution to run into a plastic container. This is because the acid solution will be neutralised by lime deposits within the pipework and slowly drawing off a small amount of solution will replace spent de-scaler within the pipes. Avoid contact with enamel baths and sinks etc.
9) Finally, turn off the boiler and immersion heater, and drain the hot water system completely. BALE OUT any residual water from the cold water storage tank as this may contain some DS-3 below the feedpipe connection.
10) When disposing of spent DS-3 solution it is best neutralised with Fernox Superconcentrate System Neutraliser.
11) Release the ball valve of the cold water storage tank and thoroughly rinse the entire hot water supply system, opening all hot water taps - Also rinse the cold water system (where applicable) as some acid may have entered via the cold water storage tank.

Fernox DS-3 does not leave any harmful deposits, and provided the system is properly rinsed, it may once again be used as normal. The application time and DS-3 concentration may be increased or repeated in the case of heavily scaled direct hot water boilers, immersion heaters, hot water cylinders and taps.