



5kg Fluoride Saturator

from ProMinent

with patented container loader



ProMinent's 5-250 sodium fluoride saturator was designed for small water supplies up to around 2 MI/day.

It can however be used for much larger plants than this.

Featuring patented container cutter, loader & water flushing device



ProMinent now supply sodium fluoride granules packaged in 5 kg screw-top, foil-sealed plastic containers.

To ensure easy and dust free loading of the 5 kg containers, ProMinent designed and patented a special loader to accept the containers, slice the seal, and allow the powder to dump into the saturator tank. The container can then be flushed, by the push of a button, with clean water to allow the jar to be easily disposed of in the normal plastic recycling.

Saturator Components

Solution tank with:

- Float valve
- Overflow and drain pipework.
- Isolation valve
- Inspection 'screw' lid

Metering pump with:

- Multifunction valve
- Injection valve
- Flow failure indication
- Pump display with total litres dosed
- 4-20 mA control

Bottle 5kg unloader c/w

- Flush assembly
- Container holder
- Seal cutter
- Push button valve
- Tubing
- Wall fitting with valves

Suction pipework consisting of:

- Suction spear
- Suction (non return) valve
- Calibration cylinder
- Isolation valves
- Strainer

Panel with

- Current sensing relay
- Terminal points

Injection Point

Requires ½" BSPF connection. Fitting by others)

Water softener

Filter media

Flow switch 2 off

For insertion into mains by others

Sodium fluoride has a reliable saturation solubility of 4%.

Excess sodium fluoride powder is placed in a dissolving tank and the constant 4 % solution of sodium fluoride produced is dosed into the water supply in proportion to the mains magflow meter milliamp signal.

The Delta metering pump is set to display the total amount dosed. This is to be compared daily against the total water flow to ensure correct dosing has taken place. The metering pump has a monitor to detect if the dosing has stopped and alarm accordingly.



Setting Saturator in Operation

Once the saturator is installed in the correct location

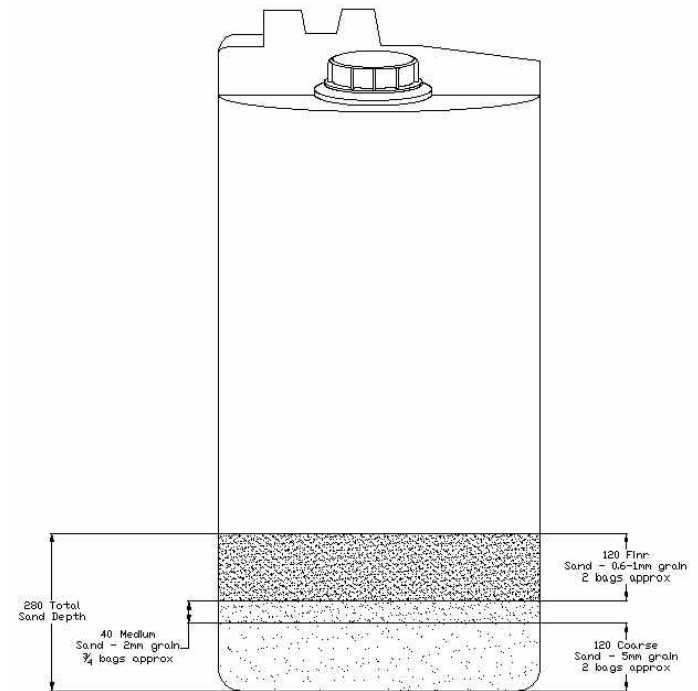
Fill the saturator tank with the filter media being careful not to damage the suction lance.

Add 2.5 bags of media fine sand

Add 1 bags of media medium sand

Add 2.5 bags of media course sand

(see media depth diagram)



Allow the saturator tank to fill with water by opening the isolation valve. Fill to a height allowing space for powder to be added when system is ready to set in operation.

Prime the dosing pump (as detailed in the enclosed pump manual).

Calibrate the dosing pump to the flow signal so as to give a dosing rate of 1 mg/litre when pump stroke is on 95%. Lock in this maximum pulse rate of the pump. (Variations to 1 mg/litre will apply in some hotter locations or where there is a higher than normal natural fluoride levels.

Due to the toxic nature of the fluoride solution, ProMinent recommends that the above steps be carried out without the presence of fluoride. Fluoride can be added when the system is calibrated, tested and ready to set into service.

Loading of the Powder

Firstly remove the screw top cap from the 5 kg fluoride container. Check the security of the container seal. Remove the delivery protection cap from the container unloader. Invert the 5 kg container and screw clockwise into the unloader until it seats.

Remove the black positioning plug stop. Holding the red handle, rotate the top of the loader with the container attached, in an anticlockwise direction.

As it rotates the container seal will be cut to allow the contents to fall into the saturator solution tank below. About 10% of the seal will remain intact to prevent it from also from falling into the tank.

Now that the container is empty, hold the water flush button. This opens a water flush line to wash the inside of the bottles. Slowly rotate the red handle backwards and forwards to flush clean the bottle. When the bottle is clean return the red handle to the start position.



Replace the black positioning stop to prevent holder rotating while unscrewing the bottle.

If no further containers are to be unloaded, either leave the flushed container in place until the next unloading of chemical is required or replace the attached cover.

To install more containers, remove the empty clean container for disposal with your plastic recycling. Load up a new container as described above.

When flushing the containers, if one flush was not sufficient to clean the insides of the container, repeat the flush cycle again while rotating the container.

While ever the minimum bed depth of 150 mm is maintained (requirement from NSW fluoride act) a 4% sodium fluoride solution will be available for dosing into the water supply in proportion to the mains 4-20 mA mag flow signal.





Suction pipework with filter, suction valve, calibration cylinder and isolation valve



Water flush button. Button is held in and the container is rotated backwards and forwards to completely flush the containers.

Safety Features

Some of the safety features built into the Saturator model 5-250 are:

- Regulated inlet water flow rate
- Easy to see levels in translucent PE saturator tank
- Flow monitor (alarms if fluoride is not being dosed)
- Filter in pump suction line
- Multifunction valve
 - To assist pump priming
 - Provide back pressure to dose against for metering accuracy
 - Help prevent siphoning

Fluoride Monitor



For the continuous monitoring of fluoride levels in water supplies, a ProMinent fluoride analyser is available with milliamp retransmit and alarms.

The analyser is normally supplied as backboard mounted with temperature, fluoride and reference electrodes.

A magnetic stirrer is also provided to assist with the single or two point calibration.

Standard unit measures free fluoride with an optional unit available for total.