

ProMinent Fluid Controls Pty Ltd

ProMinent®

Fluoridation of drinking water remains the most significant dental health program in Australia.

The advantage of water fluoridation is that the entire community benefits from the preventative measure, regardless of age, socioeconomic level, educational achievement, individual motivation, or the availability of dentists.

ProMinent have many years of experience with sodium silicofluoride dry feed packages, sodium fluoride saturator packages, and acid plants. We are a market leader when it comes to providing powdered fluoride preparation and dosing systems.

Fluoride packages and installations have to meet strict guide lines and ProMinent® packages exceed the requirements of the Codes of Practice for the fluoridation of public water supplies in Australia.

Types of fluoride

Fluoride is available commercially in 3 different forms, 2 are powders the other a liquid. Each display different concentrations of available fluoride ions & solubility.

Powders

Sodium fluoride (NaF) - 44% by weight available fluoride ion, solubility is 4.0%.

Sodium Silicofluoride (Na₂SiF₆) - 60% by weight available fluoride ion, solubility is 0.4%, nominal solution strength 0.2%.

Liquid

Hydrofluosilicic acid (H₂SiF₆) - liquid - 24% by weight available fluoride ion.



ProMinent® Sodium Silicofluoride
1000 kg bag vacuum load package



ProMinent® fluoride monitor

For the continuous monitoring of fluoride levels in water supplies, a ProMinent® fluoride analyser is available with milliamp retransmit, alarms and without the need for costly buffers.

The analyser is normally supplied as backboard mounted with temperature, fluoride and reference electrodes. A magnetic stirrer is provided to assist with the single or two point calibration.

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

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Sodium fluoride saturators.

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 flow meter.

ProMinent's 5-250 sodium fluoride saturator was designed for small water supplies.

Sodium fluoride granules are available in 5 kg screw-top, foil-sealed plastic 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 to ensure easy and dust free loading of the 5 kg containers. 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.



Featuring patented container cutter, loader and water flushing device



ProMinent's vacuum loader saturator comes skid mounted for ease of installation complete with overflow, drain, calibration cylinder, isolation valves, metering pump(s) and water softener.

The vacuum loader is especially designed for transfer of sodium fluoride granules from 25kg bags to the solution tank, is mounted on the saturator and comes complete with dust extractor, suction wand and a flexible hose.

For both the above saturators the ProMinent® metering pump displays the total amount dosed. This can be compared daily against the total water flow on the control panel. The metering pump(s) has a monitor to detect if the dosing has stopped and alarm accordingly.

Saturators can be installed in client's building or supplied pre-installed in a portable building.



Sodium silicofluoride

Sodium silicofluoride packages can be supplied with a vacuum loader for 25 kg bags or with 1000 kg bulky bag unloaders, either vacuum transfer or conveyor feed.

A typical sodium silicofluoride package consists of:

- Hopper that has at least 72 hours capacity.
- Hopper support frame and base.
- Vacuum loader to easily unload 25 kg bags or 1000 kg bulk bags.
- Powder feeder flow paced from mA signal.
- Solution tank (or tanks) for continuous or batch in PE or Stainless steel.
- Stirrer.
- Transfer pump(s), DULCOflex® tube or Spectra® progressive cavity pump.
- Bulky Bag System, screw transfer or vacuum transfer.



Vacuum load Sodium Silicofluoride package for 25 kg bags

Fluoride solution can be gravity fed or transferred to the injection point via a positive displacement ProMinent® Spectra® progressive cavity pump(s) or a DULCOflex® tube pump(s).

In all cases we ensure a 10 minute retention mixing time in the solution tank.

Loading with Vacuum Bulk Bag Unloader

Firstly we offer a vacuum unloader to transfer from the top of the bulk bag. It has a continuous vacuum seal at the bag outlet to eliminate any dust escape and an in-built dust collector. Package comes with bag trolley and pneumatic lift to assist with complete emptying of the bag.

Loading with Crane & Hoist Bag Unloader

Secondly we offer an unloader with electrically operated crane and hoist controlled via a hand held push button pendant, for lifting the bags and placing them in position. A double wall dust tight sealed clamp connection, secures the bulk bag bottom outlet. A 'power closer' is included to allow bag closure during the emptying process if required.

At the base of the loader is an intermediate hopper from where the powder is conveyed to the day hopper, via a motor driven spiral conveyor of capacity up to 5,000 l/h. As an alternate to the electric hoist we can supply a unit where the bags are lifted into position using a fork lift.

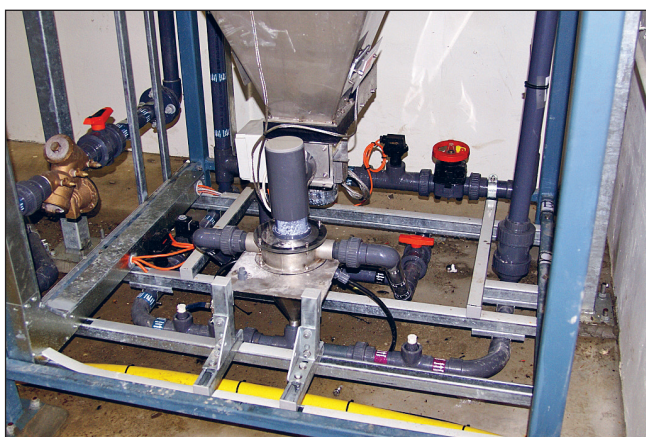
Exhaust from either dust collector is piped outside to a water trap tank.





On water supplies with rapid flow rate changes, a 2 tank batch make up system can be supplied. Tank 1 makes up a constant known solution strength and is sized to retain the solution for at least 10 minutes.

The two tank system is also suitable for dosing multiple injection points using the one makeup package.



Height restrictions

When height poses a problem, we offer a specially designed eductor and wetting cone arrangement for mixing the fluoride and transferring into the solution tank. This lowers the hopper considerably and reduces the building height requirement.

Fluoride transfer can be handled by a Spectra® progressive cavity pump, a DULCOflex® tube pump or a ProMinent® diaphragm metering pump



Package sizes

The powder usage rate will influence the type of package required for your water supply. For a flow of 50 MI/d or above we would suggest a bulk bag loader. From 10 to 50 MI/d a vacuum loader dry feed system and for flows below this a sodium fluoride saturator package either vacuum load or 5kg jar cutter package for very small water supplies.

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