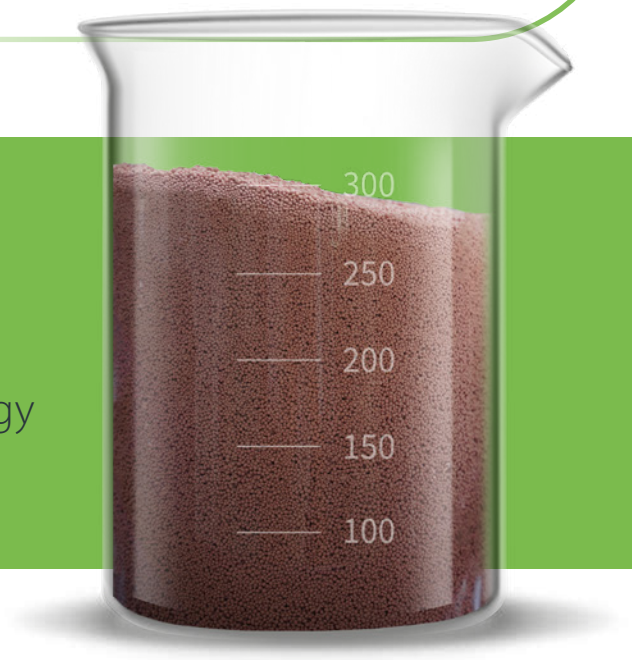
PURASET
WATER & METAL SOLUTIONS

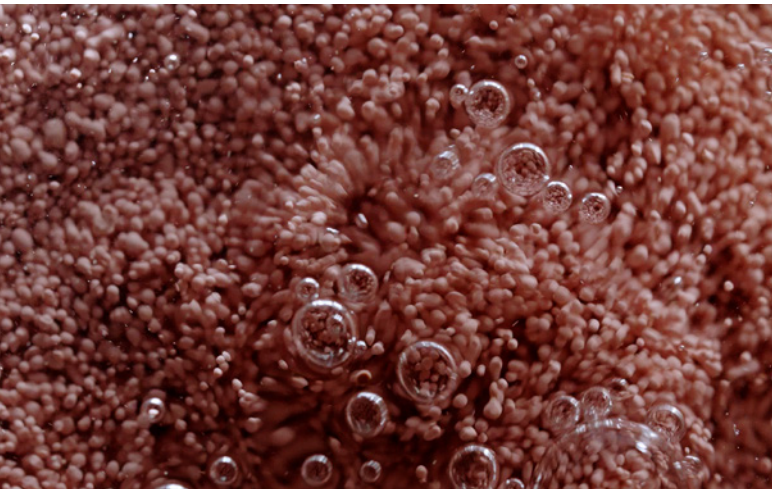
FluMET

Fluoride removal adsorbent technology



The FluMET is a cerium based regenerable adsorber that can be used to remove Fluoride contamination from drinking and industrial water (steel, aluminium, fertilizer, semiconductor, coal fired power plants, glass production, manufacture of fluorplastics, etc.).

- environmentally friendly and cost-effective solution
- best choice for semiconductor producers to treat wastewater



ABOUT FLUORIDE

- Fluoride can accumulate in living organisms and cause dental and skeletal fluorosis. Intake from drinking water is limited to below 0.8 mg/l.
- Discharge to surface waters is severely limited from industry to 15 mg/l discharge limit and no dilution with fluoride free water is allowed.

BEST USE OF FLUMET TECHNOLOGY IS WHEN

- fluoride discharge levels are required to be below 10 mg/l with FluMET will have fluoride output close to 0 mg/l
- floor space for fluoride removal is limited with FluMET technology there is no need to install a second precipitation tank
- sludge disposal and control is problematic but with FluMET technology the sludge cake for total fluoride removal is 35% smaller

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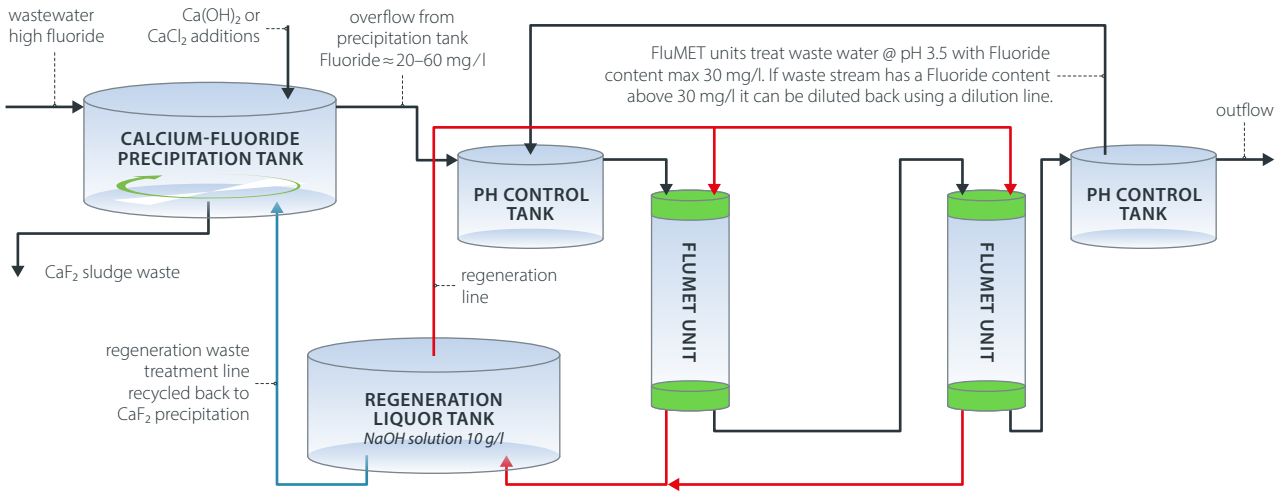
FLUMET

- cerium based adsorber resin – flexible use for volume ranges
- pH and Redox substances need controlling with pre-treatment, pH is optimal between 3 and 3.5
- adsorbs Fluoride ions under the level 1 mg/l
- annual replacement 10% of volume.
- adsorbed Fluoride can be removed from filter by regeneration allowing for smaller filter and cheaper running cost
- adsorbent life is 7–10 years

BASIC PROTOCOL FOR TREATMENT WITH FLUMET

- First level of treatment of waste with CaF_2 precipitation.
- Removal of carried over oxidants and reducing agents and dissolved phosphate ions.
- Removal of SS with rapid sand filtration.
- ph control at FluMET input at 3.5.
- Control fluoride concentration at FluMET inlet <30 mg/l, if over dilute back with filtered fluoride free water.

FLUORID REMOVAL PROCESS



TECHNICAL DATA

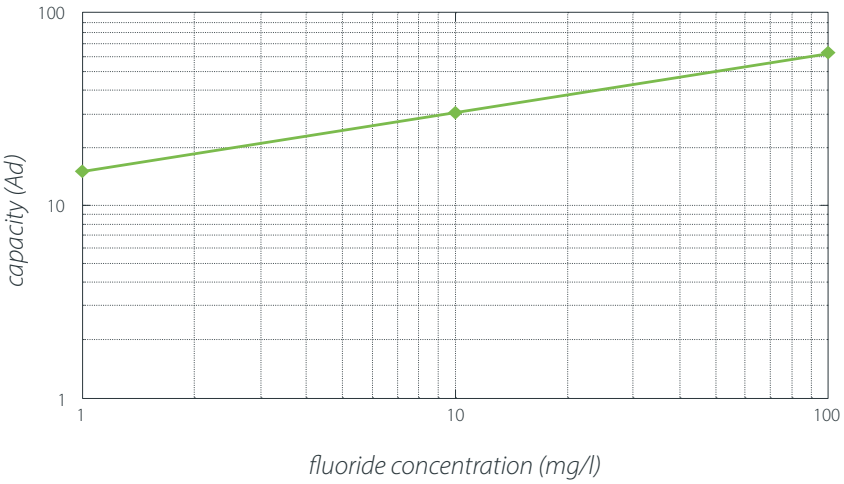
Equilibrium capacity

- maximum amount of Fluoride adsorbed in a liter of resin dependent on the Fluoride concentration and the pH of the input water
- maximal fluoride concentration is 30 mg/liter
- pH is optimal between 3 and 3.5

Saturation

- the measured fluoride content of the filtered water follows a saturation curve
- for several days depending on the actual capacity the output fluoride level will be close to 0 mg/l

Adsorption capacity:



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