Serolo Pty Ltd ABN 99 002 763 519
Trading as Fresh by Design

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ZeoFresh High Capacity Zeolite

ZeoFresh 1-2mm Granule

- 1-2mm granular Zeolite
- CEC of 150meq/100gms
- Ammonia absorption in freshwater and **saltwater,** something very few zeolites can achieve
- Used primarily as a replacement for sand in solids filters
- Can also be used in filter bags and in media filters such as sand filters, for ammonia removal
- Easily backwashed, lighter than sand

ZeoFresh is a superior, hard zeolite, capable of incredibly high CEC, and is very stable in water.

The CEC capability of ZeoFresh depends on other exchangeable ions present, although ZeoFresh does show an affinity for ammonia as its primary Ion to uptake. Larger sizes of zeolite will take longer to reach this absorption capacity due to surface area : volume ratio.

CEC (cation Exchange Capability) for all sizes of ZeoFresh is 150meq/100gms, which is equivalent to 2.7gms per 100gms of zeolite, or 27gms per kilo. This unique zeolite will remove ammonia in marine environments, to approximately the same removal rates as freshwater (detailed above) but will do so slower.

Sand Filters/Solids Filters

Particle removal efficiencies in sand filters in particular, are far superior with ZeoFresh than with sand. The angular nature and hard composition of the zeolite results in a far denser matrix for solids removal, and it slightly lighter than sand, resulting in a more vigorous and effective backwash.

ZeoFresh, when used at the 1-2.2mm size for sand replacement in sand filters, is far superior to sand in both the particle size ZeoFresh will filter remove, as well as the percentage of those particles removed per pass, resulting in cleaner, clearer water, faster.

It is more resistant to channelling in solids loading applications, because of its angular nature and ability to distribute flow evenly and resist bio-fouling when compared to sand. ZeoFresh backwashes easier and more effectively than other medias meaning a faster clean, and higher removal of solids, resulting in a cleaner media bed after backwashing.

Rechargeing:

Zeolite can be recharged it ammonia polishing using a brine solution of 100ppt (100gms per litre) NaCl, or leave it and use it only as a mechanical filtration media.

Ammonia will not release from the zeolite until the above concentration of salt is reached, meaning that even in saltwater, it will not release its bound ammonia.

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For enhanced regeneration, an additional 50ppt (50 gms per litre) of potassium hydroxide to the 100ppt NaCl solution is recommended.

ZeoFresh 1-2mm will also absorb dissolved organics, and a range of different ions, but shows an affinity for ammonia. Some other ions may be difficult to remove by recharging and as such, if being used to control ammonia, it should be replaced after 5-10 recharges, to ensure ammonia sequestration is kept at maximum.



ZeoFresh 1-2mm		
Particle Size	**% Removed Per Pass @ 20/m3/hr/m2**	**% Removed Per Pass @ 36/m3/hr/m2**
0.75	29	-
1.25	22	23
1.75	19	17
3	30	25
5	47	35
6.5	60	42
7.5	68	41
8.5	74	44
9.5	83	59
10.5	91	72
11.5	94	81
12.5	96	83
13.5	96	85
14.5	96	85
15.5	97	86
16.5	97	86
17.5	97	87
18.5	97	87
19.5	98	88
20.5	98	88
21.5	98	86
23	97	90
25.5	98	92
28.5	98	94
31.5	99	97
34.5	94	97
38	100	95
40	96	94