



HARBAUER
— KENYA —

HAPaqua

Removal of fluoride: HAPaqua – high performance adsorbent

Worldwide, people in many regions are struggling with high concentration of fluoride in ground- and surface water released from the soil as geogenic contamination. One well-known affected region is the Rift Valley in north-east Africa.

Due to high proportions of fluoride containing rocks, the dissolved concentration in ground- and surface water is far above WHO recommendations for safe drinking water.

Consumption of water with high fluoride concentration for a long term leads to serious damage to health by dental and skeletal fluorosis, which severely affects the lives of the local population in Kenya, and many other countries in the Rift Valley.

HAPaqua from Harbauer Ltd. is an affordable and highly efficient adsorbent material to remove fluoride from fresh water and to supply people with clean and safe drinking water.

HAPaqua is a white, pure apatite granulate which is synthesized from high quality raw materials. It's extremely high adsorption capacity of up to $10 \text{ g}_F/\text{kg}_{\text{HAP}}$ enables compact filter systems to treat the polluted water. After saturation of the granular, HAPaqua can be regenerated and reused in the same application, whereby waste can be avoided, and costs saved.

SPECIFICATIONS

Chemical composition	CaO, P ₂ O ₅ , H ₂ O Hydroxyapatite > 95 %
Physical constants	Apparent weight 500 – 750 kg/m ³ Particle size >90 % 0,5 – 2 mm Filter flow rate 3 – 6 m/h Residence time 10 – 20 min
Regeneration	Desorption of fluoride using 1 % NaOH solution Neutralisation (e. g. using gaseous CO ₂) Total duration approx. 3 h

GENERAL INFORMATION

HAPaqua for public water supply

Defluoridation filter systems for flow rates according to client's specification including integrated and automatic regeneration of HAPaqua filters.

Decentralized water kiosks

Water filters for communities, hospitals, schools and other institutions operated with electrical power from solar panels. HAP filter granular is changed and regenerated using a deposit system.

Household filters

Small filters for individual households. One unit produces up to 18,000 liters of clean drinking water.