



QUESTIONNAIRE FOR GRÜNBECK'S HOMEPAGE

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HEATING WATER

Dosing solutions thermaliQ safe und thermaliQ clean

1) Why is water treatment and a treatment by means of conditioning of the heating water required?

Modern materials, more efficient pumps and valves with – in some cases – very small gap dimensions cause problems in heating systems which can frequently be attributed to corrosion processes. At present, current standards and technical guidelines do not adequately reflect these developments, however. The German research project „EQM:Hydraulik“ (http://tga-kongress.de/wp-content/uploads/2016/04/10_Zargari.pdf) examined corrosion processes in hydraulic systems and recommend, above all, an appropriate treatment of the filling water to prevent corrosion. For the user, this means – simply put - filling the system with fully demineralised water and conditioning it for a stable pH value.

With the 2-component system, Grünbeck provides the optimum solution to this issue. Quick and easy filling of fully demineralised water by means of the desaliQ:MA. Protecting the heating system with thermaliQ safe which stabilises the pH value in a range that is ideal for all materials. Apart from that, thermaliQ safe's low conductivity value and the formation of a protective layer against corrosion are two additional mechanisms that effectively prevent corrosion in the heating system.

→ Link to the presentation of the German research project „EQM:Hydraulik“

http://tga-kongress.de/wp-content/uploads/2016/04/10_Zargari.pdf

2) How does thermaliQ safe work?

The organic substances form a protective layer on the surfaces that effectively protects against corrosion. Furthermore, thermaliQ safe contains components that have a buffering effect and therefore stabilise the pH value in the optimum range. Furthermore, thermaliQ safe only slightly increases the conductivity value of the water, so that the low-salt operation as per VDI 2035 can be maintained.

3) How does thermaliQ clean work?

thermaliQ clean has a dispersing effect on scale deposits, corrosion products and silt. Thus, the incrustations and impurities in the heating system are detached and dissolved and can then be washed out or filtered off.

In addition, thermaliQ clean has an inhibitor component that makes sure that even during a rehabilitation process, the sound metal will not be damaged by corrosion.

4) What is the impact of thermaliQ safe and thermaliQ clean on the heating system?

Thanks to thermaliQ clean, impurities and deposits can be detached and dissolved. At the same time, thermaliQ clean ensures the protection against corrosion during the cleaning. During the cleaning, a circulation filtration (no demineralisation via the mixed bed) via the deep-bed filter element of the GENO-VARIO mini (also available for rent) should be carried out in order to immediately remove the dissolved impurities. In case of small systems where the water is discarded after the cleaning, filtration generally is not required.

Following the cleaning, we recommend filling the system with fully demineralised water (alternatively demineralisation in the circulation by means of GENO-VARIO mini, in order to get the conductivity back into the limit range for “low-salt operation” as per VDI 2035).

Afterwards, thermaliQ safe should be dosed to ensure corrosion protection and pH value.

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5) What are the application concentrations of the thermaliQ products?

thermaliQ safe: 0.5 percent by volume (1 litre of thermaliQ safe per 200 litres of heating water)

thermaliQ clean: 0.2 up to 0.4 percent by volume subject to the system's degree of pollution (1 litre of thermaliQ clean per 500 to 250 litres of heating water). If the degree of pollution cannot be assessed, the maximum dosage (0.4 percent by volume) should be chosen for safe cleaning.

6) How can the thermaliQ products be introduced into the system?

There is a matching thermaliQ filling pump available (order no. 150 110) that can directly be screwed onto the canister. Thus, the thermaliQ products can be dosed easily and quickly.

7) Can the thermaliQ safe concentration in the heating system be measured/checked?

Yes, for this purpose our product portfolio includes a thermaliQ safe test kit (order no. 170 504), by which the concentration can be determined quite easily and quickly.

Prior to measuring the concentration, make sure that thorough mixing took place in the system (switching on the circulation pump).

8) Can thermaliQ products be used in combination with anti-freezing agents?

The parallel use of anti-freezing agents and thermaliQ products is not a problem.

9) Can thermaliQ safe be used in systems that have already been conditioned with GENO-safe A?

Yes, parallel use of thermaliQ safe and GENO-safe A is possible. It is important, however, that thermaliQ safe is dosed at the full target concentration of 0.5 percent by volume (1 litre of thermaliQ safe per 200 litres of heating water) for the total volume of the heating system. When refilling the system, thermaliQ safe must be added accordingly, too. Then, the heating protection by thermaliQ safe is being maintained and the residual concentration of GENO-safe A can be ignored.

10) How does the inhibitor react in case of old systems that are open to diffusion and in case of high oxygen concentrations? Can thermaliQ safe bind oxygen?

The inhibitor does not bind oxygen. It forms a protective layer on the metal components and thus prevents corrosion in the heating system. The introduction of oxygen is not decreased, however.

11) How does the inhibitor react to demineralisation and filtration? Does it remain in the system or is it removed by means of these treatment methods?

thermaliQ clean and thermaliQ safe are removed from the system by the mixed bed resin. In case of circulation treatment (rehabilitation), it makes sense to filter first and demineralise the circuit afterwards. Following the demineralisation, corrosion protection must be established by dosing thermaliQ safe. Especially in case of systems for stationary water treatment it must be ensured that the heating water conditioned with thermaliQ safe is not run via a mixed bed resin as the thermaliQ safe would be absorbed by it and the protective effect would be reduced. This means that only the required make-up water has to be demineralised and then, a corresponding amount of thermaliQ safe has to be added as well. Circulation filtration of the heating water conditioned with thermaliQ safe via mechanical filters (fine filters, dirt separators) is possible.

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12) Can the use of thermalIQ clean result in secondary damage, for instance due to flaking corrosion products?

The inhibitor cannot plug holes, but it does not corrode the supporting material (metal) either.

13) Do built-in parts that must not come into contact with thermalIQ clean have to be dismantled?

We are not aware of any material incompatibilities in heating circuits.

14) How are highly polluted pipes or systems cleaned? Can thermalIQ clean also be combined with a flushing compressor?

Cleaning can be controlled via the dwell time. If necessary, thermalIQ clean must be applied for a duration of 6 months. In order to obtain clear water afterwards, however, the water needs to be replaced as by then, the dispersion will have progressed so far that it would no longer be possible to remove all the dissolved particles by means of filtration.

In case of highly silted pipes, using a flushing compressor makes sense.

15) In case of low temperatures, degassing is not possible - can thermalIQ safe do that?

By way of pH stabilisation, thermalIQ safe binds the free carbon dioxide and adjusts the pH value to approx. 8.5. Thus, the problem of the "pH value being too low" due to lacking self-alkalisation (due to non-degassing carbon dioxide) is solved.

16) Why can the check of the pH value after 8 to 12 weeks be omitted when using thermalIQ safe?

Proper application provided, thermalIQ safe stabilises the pH value. Therefore, a check in the course of annual maintenance is sufficient.

Mixed bed cartridge desaliQ:MA

17) How does the desaliQ:MA work?

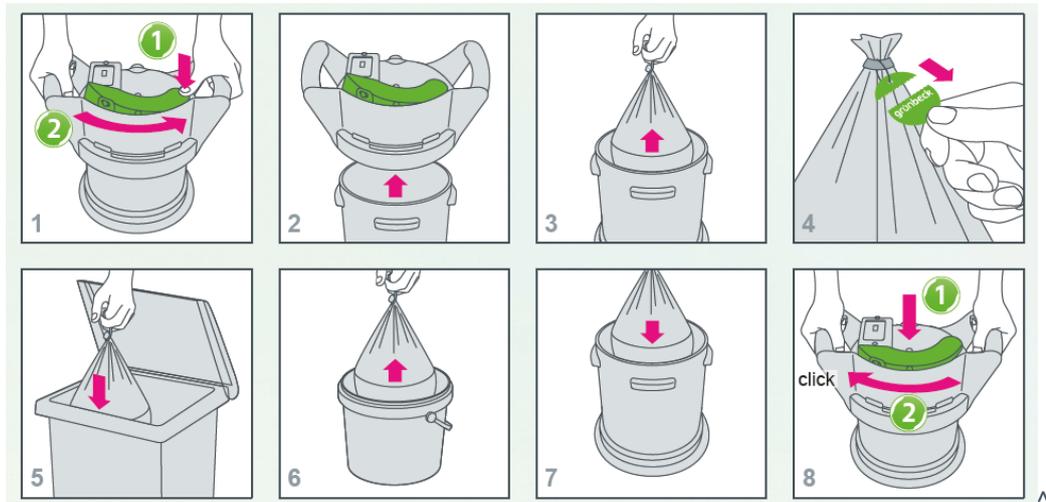
Thanks to a mixed bed resin, the desaliQ:MA can generate fully demineralised water. The advantage compared to other systems is in the easy-to-handle bag system. The desaliQ:MA resin can be replaced easily and quickly as it comes pre-portioned in closed bags.

18) What are the technical specifications of the desaliQ:MA?

	desaliQ:MA9	desaliQ:MA13
Order number:	707 430	707 440
Nominal pressure	PN 6	PN 6
Capacity [l]	320	800
Nominal flow [m ³ /h]	0.9	1.3

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19) How to replace the resin in the desaliQ:MA?



Thanks to the simple resin bag principle, the resin can be replaced within less than a minute! Furthermore, the annoying process of transferring loose resin is no longer required and in addition, the risk of slipping on loose resin beads lying on the floor is eliminated.

20) How to dispose of the resin bags?

The resin bags can easily and without problems be disposed of with the household waste. No time-consuming and costly logistics required.

21) How to procure the resin bags?

The desaliQ:MA resin bags are supplied in an air-tight bucket to best protect the resin quality. There are buckets available with two (order no. 707 435) or four (order no. 707 445) resin bags. As the wholesalers carry the resin bags in stock, the otherwise very complex resin logistics is no longer necessary. If required, new special mixed bed resin by Grünbeck can easily be purchased at the wholesalers' pick-up stores. No time-consuming and costly storage by the installer required.

22) Is the desaliQ:MA compatible with the GENO-therm filling devices?

Yes, the filling devices (filling group, fitting, connection block, filling case) are compatible with the cartridges and can be connected by way of the 3/4" connection threads. In case no filling devices are available on site, we recommend using the filling case.

23) Can the desaliQ:MA be used for circulation treatment?

In case of a circulation temperature of less than 30 °C and compliance with all other technical limits, the desaliQ:MA can be used for demineralisation directly in the circulation as well. Operation in warm water, however, must definitely be avoided!