

# Amalgam to be phased out completely by 2025.

an interview with **Bart Dopheide**, GC Europe.



**Bart Dopheide graduated** as a dentist from the University of Groningen (the Netherlands) in 1987. He has worked in management roles in the dental industry in Europe and internationally for more than 30 years. The focus of his activities were the marketing and development of a broad range of materials for dentists and technicians. He held leading positions in cross-functional teams that introduced the MI concept, high-viscosity glass ionomers, composites and glass hybrids in Europe. Currently, he is general manager, responsible for the scientific services activities of GC in Europe

This Thursday, negotiators from the Parliament and Council reached a provisional political agreement on the Commission's proposal to address the remaining uses of mercury in products in the EU in line with its Zero Pollution Ambition. Last year, the European Council had made an official proposal to ban the use of amalgam for any dental treatment in its member states as of the 1<sup>st</sup> of January, 2025. The use of dental amalgam for children and pregnant or breastfeeding women, had already been banned in the EU since 2018, apart from a few strict exceptions.

Now, this agreement has to be adopted by Parliament and Council, after which the new law will be published in the EU Official Journal and enter into force 20 days later. With this new legislation in sight, the need for alternative solutions is once again highlighted. Mr. Bart Dopheide, General Manager Scientific Services at GC Europe, glimpses into a future where amalgam is gone for good.

## ***The EU Commission wants to ban dental amalgam by 2025. Why is this happening?***

The reason for the phase out of amalgam is the mercury that is inside. Once an amalgam restoration is set and bound within the alloy, the release of mercury is negligible. However, even though mercury naturally occurs in the environment, in its free and

unbound form, it is toxic and a severe hazard for the environment. An important example occurred amid the 20th century, when mercury-tainted industrial wastewater poisoned thousands of people in Minamata in Japan, leading to severe health damage. The global agreement on the phase out of mercury, the Minamata Convention, was named after this tragedy.

Dental amalgam is the largest remaining intentional use of mercury in Europe, estimated at around 40 tons. The consequential environmental impact does not only manifest in waste – even though amalgam separators prevent the mercury dump in the wastewater. Mercury pollution may occur during any stage from the production of amalgam capsules, their preparation, placement, and removal, to amalgam fillings in the deceased, especially when the remains are cremated.

**40 tons, that is a huge number. Thus, we can assume that still many dentists are using amalgam. What will this mean for dentistry?**

Some countries have already banned amalgam completely; Nordic countries have played a pioneering role here. Nevertheless, in some countries, amalgam remains important, mainly because of the health insurance coverage policies, where it's still considered an affordable and durable material. Recently, some countries started to remove it from the national reimbursement programs. However, in many countries, amalgam is still widely advocated, even though it's acknowledged that a phase-down is necessary for the environment, and they focus on thorough and sensible waste management. These EU countries



Dental amalgam has been used successfully to restore teeth for more than a century. Nowadays, several, viable and less invasive options are available.

that have not yet adjusted their reimbursement system to cover alternatives, may postpone the phase-out up until 30 June 2026, to avoid negative repercussions for low-income EU citizens who might otherwise not be able to afford adequate dental treatment in these countries. The phase-out in countries that already prohibited amalgam, has taught us that a policy change is feasible. Especially because several alternatives exist nowadays. Interestingly, even before the phase down, other direct restoratives gained importance, not for environmental reasons, but mainly because of their increased aesthetic appeal and minimally invasive potential.

**So, you think dentists are ready to completely abandon amalgam? Are current alternatives sufficient to cover all needs?**

Currently, there are several viable, mercury-free alternatives on the markets, but of course, we need to ensure that all requirements are met, also from the patient's perspective. This is something GC has anticipated since many years. Prof. Dr Falk Schwendicke, the current Director of the Polyclinic for Dental Conservation and Periodontology at the LMU Clinic in Munich, has conducted a series of cost-effectiveness studies with his team. In these studies, he conducted direct comparisons between EQUIA Forte glass hybrid restorations and composite restorations. Composite is considered the 'gold standard' for direct restorations nowadays.

Although this is an excellent alternative, in some cases, the higher technique sensitivity and costs could be a drawback. In this research, both initial and retreatment were taken into account. The conclusion was that

glass hybrids had more potential in terms of cost-effectiveness. Such studies are very important considering the transition to alternatives to be covered by social security systems and private healthcare, to make oral healthcare affordable for everyone. The conclusions from the World Health Organisation correspond to these findings; composites as well as glass ionomers and their hybrids are being considered essential medicines.

Either way, amalgam won't be replaced by just one material, but several materials.

**So, what determines which material should be selected in which case?**

This is always a multifactorial decision. Three years ago, the management board of Foundation Nakao initiated the "Restorative options decision tree" to support the amalgam phase-down by providing dentists with clear alternative options. It comprises a consensus of experts to guide the selection of restorative materials. All key aspects are considered, from mechanical and clinical properties to patient comfort, expectations, and financial consequences. Such a tool facilitates and objectifies decision making, without losing sight on all important factors, whether physical, practical, or economical.

Tremendous advances in materials science have been made. Nowadays, we even have very strong direct options for large restorations, such as fibre-reinforced composites. The everX series of composites exists in two viscosity levels, both adding strength and fracture toughness. In large cavities, such as after endodontic treatment, these types of composites are recommended.

Another important evolution are the newest low-viscosity composites such as G-ænial Universal Injectable. This composite is as least as strong or even stronger than contemporary paste composites. This has opened many new ways of working, all contributing

to the ease of placement. All these advances have it made possible to imagine a world without dental amalgam, so I am very confident that prospects in dentistry and our future smiles are looking bright.

In case of interest in GC's alternative options, more information can be found on the dedicated webpage: <https://campaigns-gceurope.com/amalgam-alternative/>



Left: EQUIA Forte HT has shown to be a cost-effective alternative that has become a popular amalgam alternative. Right: MO restoration on a first molar with EQUIA Forte HT. Courtesy of Dr. Zeynep Bilge Kütük, Türkiye

## References

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