



Vacuum mixing systems such as PALAMIX® reduce the release of monomer in the air

The monomer MMA is a highly flammable solution and the main ingredient in the liquid bone cement component. Its intense odour is a characteristic of MMA. The olfactory perception threshold is very low at 0.2 ppm (parts per million). Therefore, even at very low concentrations the odour is intense, however it is safe.

During mixing and application, MMA enters the air of the operating theatre. In high concentrations, MMA can cause irritations of the mucous membranes and airways. The concentrations that are released during the use of the bone cement are well below the workplace limits of 50 ppm (use over 8 hours per day for 40 hours per week) and are classified as clinically safe.

Depending on the mixing technique used, the quantities of MMA that are released into the atmosphere can be reduced. Some vacuum mixing systems like PALAMIX® contain charcoal filters. These absorb the MMA fumes and thus reduce its release into the air. **By mixing under vacuum the quantity of MMA fumes emitted can be reduced to 4 ppm.** When mixing in closed systems a small amount of MMA fumes is released mainly during the application phase. In the actual operating theatre the values are lowered further due to the higher rate of air exchange: **With the closed system PALACOS® R+G pro maximum values of 1.86 ppm are achieved.**



The charcoal filter of the vacuum mixing system binds monomer fumes

No soft contact lenses in the operating theatre

Soft contact lenses should not be worn, or only with caution, when mixing bone cement because the lenses may cloud as a result of the MMA fumes (in case of doubt, ask the contact lens manufacturer). The MMA fumes are not dangerous for the eyes themselves.

Flammability of the monomer liquid

Both the liquid itself and the fumes of MMA are highly flammable. It must therefore be protected from heat and kept away from hot surfaces. This applies in particular when working with surgical cauterisers immediately after placing the bone cement. When storing bone cement it must also be protected from heat and sunlight.

Important: no residue

For use in the operating theatre: always mix the entire quantity of powder with the entire volume of liquid to achieve complete crosslinking.

Literature

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