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Assessment of aqueous cleaning of acrylic paints using innovative cryogels

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HIGHLIGHTS

- The overall results showed that cryogels are able to clean in a more efficient and safer way than the selected traditional method.
- The mechanical action that can be applied by using cotton swabs without significantly harming the treated paint surface is not enough to completely remove the soil. Nonetheless, even the sole gentle rolling of swabs on the paint surface induces morphological changes, which are detectable via AFM, and represent an unacceptable damage of the paint layer.
- Possible presence of gel residues after the cleaning with novel cryogels and Velvesil Plus[®] was investigated by means of FTIR measurements. The results clearly showed that siloxane residues are found in the area treated with Velvesil Plus[®], while the cleaning with cryogels is residue-free.
- This means that, even if the PVA-based cryogels are also physical gels, their intra-network cohesion forces are strong enough to grant that no polymer macromolecules are detectable on the treated surfaces after the application.

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