solventum

3M Health Care
is now Solventum

Tested for safety – trusted for performance

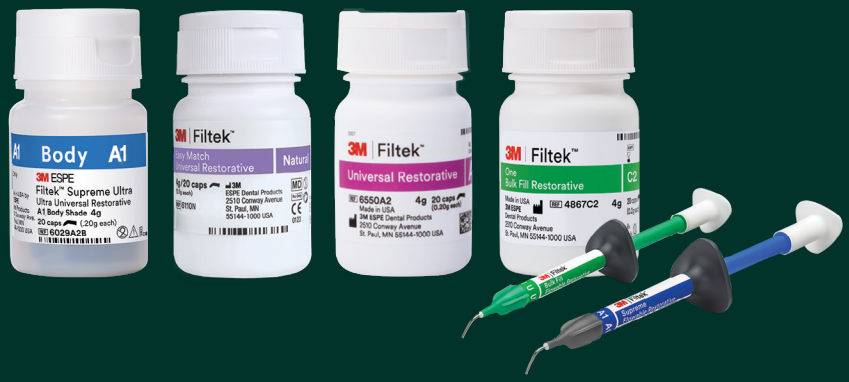
1 The science of composite warming

We know how important patient safety is to your practice. That's why we've conducted rigorous testing to ensure 3M™ Filtek™ Dental Restoratives are safe to warm, without compromising composite physical properties. So, you can warm with confidence:

- All recommended products **toxicology tested**
- **Minimal heat transfer to the pulp**[1,2]
- **Biocompatible** according to ISO-10993-1:2018[3]
- 1st dental composite **cleared by the FDA** for warming[4]

Filtek Dental Restoratives that are safe to warm [5,6]

- 3M™ Filtek™ Supreme Ultra Universal Restorative
- 3M™ Filtek™ Easy Match Universal Restorative
- 3M™ Filtek™ Universal Restorative
- 3M™ Filtek™ One Bulk Fill Restorative
- 3M™ Filtek™ Bulk Fill Flowable Restorative
- 3M™ Filtek™ Supreme Flowable Restorative



Only use approved warming devices with select Filtek Dental Restoratives.

[1] Daronch M, Rueggeberg FA, De Goes MF, Giudici R. Polymerization kinetics of pre-heated composite. J Dent Res. 2006 Jan;85(1):38-43 6
[2] Internal Data
[3] Based on a review by a board-certified toxicologist
[4] 3M™ Filtek™ Universal Restorative
[5] Warm capsules to up to 70°C (158°F) for up to 1 hour.
[6] Warm flowable syringes to up to 70°C (158°F) for up to 1 hour, up to 25 times

2 Unchanged physical properties

Not only does composite warming offer many benefits, including **better flow, improved adaptation***, and **reduced extrusion force****, but evidence has also demonstrated that prewarming has no adverse effect on:

- Degree of conversion[1]
- Microhardness[1,2]
- Fracture toughness[2]
- Surface roughness[2]
- Flexural strength[3]
- and other properties tested by Solventum.

Prewarmed restorations exhibited 100% acceptable esthetic, functional and biological properties[4]

35 patients in a randomized clinical trial received two Class I restorations, one unheated and one preheated.

* Based on a 3M sponsored in vitro study. 11 dentists placed 88 Class II MOD restorations. Teeth were microscopically exampled for flaws, defects and voids. Comparisons made between techniques and operators.

** Internal Data

*** World Dental Federation

[1] Gebril M, Grüll MP, Brillant MS, Sullivan B, Price RB. Effect of repeated heating and cooling cycles on the degree of conversion and microhardness of four resin composites. J Esthet Restor Dent. 2021 Dec;33(8):1201-1209. doi: 10.1111/jerd.12815. Epub 2021 Aug 23. PMID: 34424606.

[2] Elkaffass AA, Eltoukhy RI, Elnegoly SA, Mahmoud SH. Influence of preheating on mechanical and surface properties of nanofilled resin composites. J Clin Exp Dent. 2020 May 1;12(5):e494-e500. doi: 10.4317/jced.56469. PMID: 32509233; PMCID: PMC7263773.

[3] D'Amario M, Pacioni S, Capogreco M, Gatto R, Baldi M. Effect of repeated preheating cycles on flexural strength of resin composites. Oper Dent. 2013 Jan-Feb;38(1):33-8. doi: 10.2341/11-476-L. Epub 2012 Jul 7. PMID: 22770484.

[4] Elkaffas AA, Eltoukhy RI, Elnegoly SA, Mahmoud SH. 36-Month Randomized Clinical Trial Evaluation of Preheated and Room Temperature Resin Composite. Oper Dent. 2022 Jan 1;47(1):11-19. doi: 10.2341/20-301-C. PMID: 35226749.

Tips for success

	To temp	Time	Frequency
Heat capsules	70°C (158°F)	up to 1 hour	once
Heat flowable syringes	70°C (158°F)	up to 1 hour	up to 25 times

Remember: Remove your composite from the warmer if it won't be used immediately.

solventum

Solventum Dental Solutions
1-888-363-3685
solventum.com

Solventum.com