

Ultaire™ AKP specification sheet

Ultaire™ AKP, an innovative high-performance polymer specifically formulated for dental applications. Ultaire™ AKP bridges the gap between metal removable partial dentures (RPDs) and those made with polymers that merely meet minimum requirements. Based on clinical data and material properties, Ultaire™ AKP is an exciting new material for RPDs. **Discover why.**

Trait	Why is it Important?	Ultaire™ AKP
Aesthetics How does it look, taste, and feel?	Patients care a lot about appearance and aesthetics.	Can be stained to better match surrounding teeth or gingiva, is lightweight, no metallic taste
Flexural Strength, MPa At what point does the material yield or break?	The flexural strength needs to be high enough to withstand loading and not break – and to avoid permanent deformation during mastication.	148 MPa*
Elastic Modulus, MPa How resistant is the material to deformation? How stiff is the material?	An RPD needs an appropriately high elastic modulus to ensure that stresses encountered during biting and mastication don't cause permanent RPD deformation – without being too high (or stiff) that it becomes difficult to insert or remove the denture.	3500 MPa*
Impact Strength, kJ/m² How strong or resilient is the material?	When an RPD is dropped, it can lead to fracture. An RPD that is strong or resilient enough to withstand impact is preferred.	Notched charpy impact dry and conditioned in water at 37° C for 7 days:* As molded: 9 kJ/m ² Post-conditioning: 10.2 kJ/m ²
Biocompatibility Is it safe to put in the body?	Only safe, biocompatible materials can be used within the body.	Biocompatible, no delayed dermal contact sensitization, nonirritant, nonmutagenic to multiple strains of Salmonella and E. Coli, nonmutagenic in mouse lymphoma forward gene mutation assay, does not induce micronuclei, no cell lysis or systemic toxicity, nonpyrogenic, and does not leach in water, ethanol, or hexane ^{1*}

*Testing methodologies for Ultaire™ AKP

- Flexural strength and elastic modulus: followed ASTM D790 and D638 standards.
- Charpy impact strength: ISO 179 machined from ISO bars with and without conditioning (after 1 week of distilled water storage at 37°C). Notch the specimens before conditioning.
- Biocompatibility testing was completed per ISO 10993 standards.

Ready to prescribe Ultaire™ AKP?

Use our Lab Finder to connect with a qualified Ultaire™ AKP lab.

[SolvayDental360.com/LabFinder](https://www.SolvayDental360.com/LabFinder)

References

1. Solvay data on file.



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