Questions & Answers
For Dentists

Ultaire™ AKP
High-Performance Polymer
Removable Partial Dentures
ULTAIRE™ AKP

Q What is Ultaire™ AKP high-performance polymer?
A Ultaire™ AKP is a new high-performance aryl ketone (AKP) polymer from Solvay Dental 360™. This high-performance polymer is specifically formulated to meet critical performance requirements for dental applications including removable partial denture frames.

Q What are the benefits of RPDs made from Ultaire™ AKP?
A Removable partial denture frames made from Ultaire™ AKP are bone-like and tooth-supported, lightweight, biocompatible, leave no metal taste in the mouth, and offer unparalleled aesthetics.¹

Q How is Ultaire™ AKP different from Valplast™ or other soft acrylics?
A Ultaire™ AKP is not a flexible material but rather it is a rigid product, indicated as a metal replacement, and provided in a disc form (known as Dentivera™ milling disc) suitable for utilization in CAD/CAM digital workflow.

Q How strong is Ultaire™ AKP?
A Strength characteristics for Ultaire™ AKP are well above acrylics that are on the market today. The flexural strength of any material used for RPDs needs to be high enough to withstand loading and not break. At 148 MPa, Ultaire™ AKP has flexural properties that are well above minimum requirements for denture base materials.

Q How stable is the material?
A The properties of Ultaire™ AKP are not expected to change over time under normal conditions if the device is used appropriately and instructions for use are followed.

Q Is Ultaire™ AKP made in the U.S.A.?
A Dentivera™ milling discs made from Ultaire™ AKP are made in the United States of America under strict FDA and ISO guidelines.

Q Can Ultaire™ AKP be used for any endentulism case?
A Ultaire™ AKP RPD frames have been successfully made for Kennedy Classes I, II, and III.

Q Can I use this material for other dental indications?
A The Dentivera™ milling disc is currently FDA cleared for use as base material for removable partial dentures only.

Q How is this material different than PEEK?
A This material is made from PAEK which is slightly different than PEEK in terms of its molecular composition and typically a higher ductility is observed.
REMOVABLE PARTIAL DENTURE FRAMES MADE FROM ULTAIRE™ AKP

Q Many patients have metal sensitivities. Will this be an issue for RPD frames made from Ultaire™ AKP?
A Ultaire™ AKP is similar to other high-performance polymers that are currently used in spine and hip implants. This biocompatible material is monomer free and because of that there is a reduced occurrence of sensitivity issues, making Ultaire™ AKP an excellent choice for patients with metal sensitivities.¹

Q How is an Ultaire™ AKP RPD different from an RPD made of metal?
A An RPD made of Ultaire™ AKP is lighter in weight, more comfortable, and more aesthetically pleasing as it is tooth-colored. It is non-corrosive, non-irritating and leaves no metallic taste in the mouth.

Q How much does an RPD frame made from Ultaire™ AKP weigh?
A A complete post-processed frame milled from Ultaire™ AKP is about one-third the weight of a similarly designed metal frame.

Q How thick is the Ultaire™ AKP frame as compared to metal?
A The Ultaire™ AKP frame is slightly thicker as compared to metal. This is to ensure that the RPD has proper rigidity, which is required for this application. Patient testing has indicated that the slightly thicker frame has not affected comfort of the frame, nor any functionality such as speaking or eating.
AESTHETICS AND COMFORT OF ULTAIRE™ AKP RPDS

Q Why are Ultaire™ AKP RPD frames more aesthetically pleasing than metal frames?
A Ultaire™ AKP is similar in appearance to the most common tooth color, specifically designed to match color A1 of Yamahachi Dental Shade Guide II. Because Ultaire™ AKP has tooth-like coloring, it eliminates aesthetic issues surrounding the visibility of metal.

Q Does Ultaire™ AKP offer multiple color options?
A At this time, only one color is available.

Q Can the material be painted/colored?
A Painting, coloring, and staining techniques of an Ultaire™ AKP frame have not been explored. Normal polishing techniques are possible.

Q Will there be discoloration of the material over time?
A Under proper use conditions, discoloration is not expected for Ultaire™ AKP. However, it is recommended that Ultaire™ AKP material be kept from direct sunlight exposure to avoid slight changes in color. Exposure to typical staining agents such as coffee may affect the color of the final product over long periods of time.

Q How sensitive is the material to temperature?
A This product is made from a high temperature resin, which can withstand temperatures up to 300°C. No changes in properties are expected from exposure to hot or cold food/drinks.
**CARE AND REPAIR OF ULTAIRE™ AKP RPDS**

**Q** Is the frame adjustable?

**A** Frames made from Ultaire™ AKP may be adjusted with existing dental tools. Avoid using excessive force when adjusting the frame.

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**Q** Can the clasps be modified?

**A** No, they should not be modified. They are designed to move slightly during insertion/removal but modification with the use of tools may lead to breakage. Clasp design for a frame made from Ultaire™ AKP high-performance polymer was specifically designed for optimal use.

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**Q** Will an Ultaire™ AKP RPD frame break?

**A** A frame made from Ultaire™ AKP is strong enough to withstand normal forces; however, the frame could break if extreme forces are applied to it.

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**Q** Can I repair an Ultaire™ AKP RPD frame if it breaks?

**A** At this time, we have not identified an optimal procedure for repairing the polymer-based frame but options are currently being explored. Contact your lab representative or Solvay for more information if breakage occurs.

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**Q** How resistant is the material to scratches?

**A** Lab and clinical trials have shown that Ultaire™ AKP has a very high resistance to scratches; however, use of sharp tools or scraping of the surface should be avoided.

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**Q** Will the material melt?

**A** Ultaire™ AKP will withstand temperatures up to 300°C.

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**Q** Does Ultaire™ AKP withstand bacteria?

**A** Solvay Dental 360™ is currently investigating the behavior of Ultaire™ AKP and it responds to the growth of bacteria commonly found in the oral environment.

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**Q** How are frames made from Ultaire™ AKP sterilized?

**A** Dentivera™ milling discs are non-sterile and the Ultaire™ AKP removable partial denture frames milled from them are not intended to be sterilized.
**CAD DESIGN**

**Q** Why are clasps designed shorter?

**A** The Ultaire™ AKP Clasp should be made shorter and thicker than typical metal clasps, while encircling the tooth at least 200 degrees. This allows for better retention by increasing the rigidity of the clasp arm. It has been suggested that thermoplastic clasps that are 5 mm shorter in length and have a larger cross-sectional diameter can be equivalent in stiffness to cobalt chrome clasps that are 15 mm long and 1 mm in diameter. The clasp width and thickness can be adjusted, but should remain between 1 and 3 mm.

**ABOUT SOLVAY DENTAL 360™**

**Q** What should I know about Solvay Dental 360™?

**A** Solvay Dental 360™ is built upon Solvay’s world leading high-performance polymer portfolio which includes more than 30 chemistries available in over 1,500 formulations for use in demanding applications around the world. This extensive portfolio of formulations allows Solvay to provide the market with the right polymer for the right application. Our products are specifically engineered to address the challenges companies face every day to meet critical performance requirements.

As an industry leader in high-performance polymers, Solvay Dental 360™ is committed to leading and revolutionizing the dentistry market by providing dental labs with solutions with substance – a complete, end-to-end removable partial denture frame manufacturing workflow and unparalleled expertise in operations, technical support and education. The revolutionary products available from Solvay Dental 360™ will help improve operational efficiency, patient satisfaction, and offer profitable growth for both dental labs and dentists alike.

**LEARN MORE**

**Q** How can I learn more about Solvay Dental 360™ and its Dentivera™ milling discs made from Ultaire™ AKP?

**A** To learn more visit www.solvaydental360.com.

**REFERENCES**

Caution: Federal law restricts this device to sale by or on the order of a dentist.