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The Dent-Liner ™

A Bulletin Dealing With Issues For Dental Health Professionals

Pattern Resins: Are there differences ?

Over many years Dental Health Professionals have been using various types of pattern or modelling resins clinically and in the dental laboratory. Most recently increased popularity of implants and precision super structures has made pattern resins more valuable in producing restorations to more precise tolerances than were achievable in the past. Primary indications of usage are; to produce an exact pattern that will be "burned out" and replicated in an alloy of choice and during clinical try-ins pattern resins can secure segmented units and ensure an accurate position. Pattern or modelling resins have not recorded any significant changes since initial development and although there are a number of problems associated with them, users have had to deal with them. Most evident is the shrinkage problem upon setting which distorts dimensional proportions of the pattern. Also when trimming these patterns, chipping often occurs and heat from the cutting bur can distort some resins. Finally there are "burn out" failures because of inconsistent casting results. These unpredictable results associated with traditional pattern resins were isolated and investigated at Bredent's research and development department. The result was a development of a new generation, high precision pattern resin with a shrinkage value of 0.36%.
Pi-Ku-Plast HP36 is the new pattern resin from Bredent which surpasses the most common short comings inherent in pattern resins on the market today. The primary value of Pi-Ku-Plast HP36 is that it has the lowest shrinkage of any pattern resin in the market. The finest modelling waxes shrink from 1 to 2 % on average.

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Special Interest Articles:

Individual Highlights:

Locking Pin Snap System

The bar type over denture is fast becoming one of the most common treatment modalities prescribed to date. Although these bars improve retention, they unfortunately are vulnerable to "Lift Off" in side to side or anterior to posterior movements. The best solution so far is a locking pin system which engages the bar through a hole in the bar or through the cantilevered extention. **The Locking Pin E** from Bredent will prevent lift off even a class 3 occlusion and also prevent lateral movements which often creates sore spots. The Locking Pin E can also be utilized in an existing implant bar and also in removable partial dentures, such as bilateral cases. The Bredent **Locking Pin E** (made of titanium) can be set in to acrylic, where as the **Locking Pin A** (a gold alloy) can be glued to metal. The soft resin supported guidance sleeve results in a soft snap of the locking pin when the locking pin is in the closed position. Also upon opening, the snap indicates to the patient that the lock is completely open and the denture can be removed. In a typical case we used the Locking Pin A on a maxillary with four implants placed in areas 13,23 and 15 and 25. Plastic UCLA castable cylinders were fitted to **Bredent wax bars** (1x6x8mm) to create a one piece bar. The bar was cast and fitted to the model. The areas between 13 & 15 plus 23 & 25 were selected for pin placement. The position of the locking pin is determined with the **Bredent HM centre drill,** with it a small depression is prepared. Then the **Bredent Multi-Drill 1.5mm** is used to drill completely through utilizing the **Bredent milling & drilling oil** to reduce heat and the drill bit from jamming. The modelling pin is inserted into the drilled hole up the stop. This pin contains the locking housing which is integrated in the over bar chrome casting using **Bredent Pi-Ku-Plast modeling resin.** Once set the rest of the chrome casting superstructure is waxed. After completion of the pattern the modeling pin is removed by turning slightly with a pair of pliers leaving the housing integrated into the pattern. Once cast, the chrome cobalt framework and locking pin housing are sandblasted with 100 micron Al.Ox2. **Bredent FGP Insulating liquid** is applied, 2 to 3 mm around the pin hole, the contact area of the locking pin on the superstructure, the locking pin stud and pin sleeve and contact areas where the adhesive may flow. The over denture bar and chrome casting are then assembled.

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Pattern Resins: Are they differences ? Cont'd

Pi-Ku-Plast Assortment Kit. Available in 5 different colours

Segmented units can be secured for soldering without distortion.

Where as Pi-Ku-Plast HP36 exhibits a shrinkage value of 0.36% after 20 minutes, with a working setting time of four minutes. Workability is another benefit, when applying with a brush, Pi-Ku-Plast HP36 can be dosed out from the smallest amounts to much larger volumes. It can be built up like wax or it can be made more fluid. The Pi-Ku-Plast HP36 has seven different particle sizes which ensures molecular density and that provides the stable qualities which sets it apart from the others resins. This property also means that it does not generate heat when setting, making it safe to use in combination with waxes. Dimensional stability is assured during grinding as it produces very fine shavings not like some other resins which heat up, stick to the burs and produce rough surfaces. Worse it may even distort the restoration and require a remake. There is a stability of the pattern resin during the burn out procedure. Since Pi-Ku-Plast HP36 does not expand during burn out , the risk of investment fracture resulting in a miscast is greatly reduced. This means more predictability and consistency during the fabrication procedures. Recently tests at the University in Osaka Japan of Pi-Ku-Plast HP36 show that the material exhibits superior properties for positioning, trimming, incineration and final casting results. Bredent has kept the polymer free and clear of titanium oxides which provides the colour in all resins. Instead the colouring agent is in the liquid monomer which ensures an accurate casting every time. Other pattern resins have their colouring agent in the polymer. At 300 degrees, coloured polymers form an acid which etches the surface of the investment, resulting in rough castings. This makes Pi-Ku-Plast HP36 ideal for pressing where a "no residue" burnout is critical such as in the pressible ceramic systems. There is also a long list of recommended applications such as telescopic crowns, inlays, attachments, lingual bars, connectors, Maryland bridges and construction of implant superstructures. Clinical uses are temporary splints for soldering or post and core build up. The assortment kit comes with an ergonomic clinical white tray and presents well in the surgery or laboratory. The stable design eliminates spillage while the covered glass jars provide fresh material for each procedure, ensuring the resin's properties are maintained. There is also a brush cleaner which will remove residue and ensure there is no contamination of the resin material.

Source: Peter T. Pontsa, RDT

For further information, contact Dent-Line at 1-800-250-5111 or e-mail us at info@dent-line.com

Featured Product : Bredent's Breformance

Breformance for long term temporary restorations

Breformance from Bredent is a cold curing crown and bridge material ideal for temporary crowns and bridges. The material has been matched to the requirements of dentists dental laboratories and even denturists. It is a self curing filter free acrylate based resin. The processing is simple, with superior mouldability and high resistance to fracture because of its elasticity. Breformance is available in six colours stable vita shades. Indications are for long and short term restorations, which include extra oral repairs. It can be used for fixation of ground acrylic denture teeth on cast partials or for covering attachments in combination cases.

For further particulars, contact Dent-Line at 1-800-250-5111

Featured Product : Bredent's Dentasil

Teeth are protected from high pressure and plaster adhering

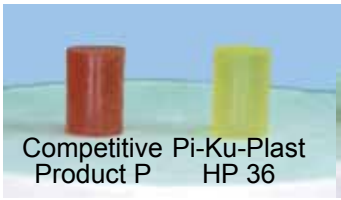
Dentasil is a new product from Bredent. It has been formulated to protect teeth and acrylic during the investing and curing period of denture construction. It also prevents plaster from adhering to the necks of the teeth and waxed contours of the denture. The special silicone formula with its 1:1 ratio, results in a low viscosity, non-runny consistency which is easy to apply. The material requires no retention crystals and won't bleach or discolour the teeth. The silicone material is supplied in a cartridge and gun application system which allows for convenient and bubble free dispensing of the entire contents without waste.

For further information, contact Dent-line at 1-800-250-5111 or e-mail us at info@dent-line.com

University Tests in Osaka, Japan on Bredent Piku-Plast

TO EXHIBIT SUPERIOR PROPERTIES FOR POSITIONING, TRIMMING, INCINERATION AND FINAL CASTING RESULTS.

INCINERATION TEST:



Identical blocks of the competitor's resin (left) and Pi-Ku-Plast HP36 are ready for the incineration test.

At 275° C the competitor's product (left) foams and expands considerably.

At 300° C the competitor's product reveals distinctive expansion whereas Pi-Ku-Plast reduces the volume.

CASTING TEST:

Identical copings produced with brush resin.

The competitor's resin and Pi-Ku-Plast HP 36, prepared for investing.

The considerable expansion of the competitor's resin during the incineration phase resulted in the fracture of the investment material die in the casting ring.After casting, the crown is sealed with a lid and can not be used.

The amount and firmness of the Pi-Ku-Plast portion can be controlled by the amount of monomer on the brush and the time immersed in the polymer.

An entirely gap free fit of the Pi-Ku-Plast HP36 outer coping guarantees perfect precision of the secondary elements.

Dust Alert : Fact or Fiction

During the process of grinding and polishing work, sand blasting investment material and dry trimming plaster, micro fine dust particles are produced which conventional filter systems allow to escape back out into the work environment. Every year more and more materials are introduced to the market. That is why it is imperative to have a superiour dust extraction system which can handle all different dusts as well as acrylic fumes. The most dangerous types of materials are cobalt, beryllium, nickel and quartz. These materials are frequently found used in the daily routine of most dental laboratories. Once the micro fine dust gets into the lungs, it can have a fatal effect on the human body resulting in conditions such as asthma, allergies, poisoning or cancer. Medical studies in Europe confirm health is endangered with individuals who work in poorly ventilated workplaces. The study "Pneumoconiosis in Dental Technicians" by Professor of Medicine Konrad Morgenroth from the University of Ruhr in Bochum and Dr. Hartmat Korenburger from the Johann Wolfgang Goethe University in Frankfurt Germany is conclusive evidence that a certain measure of caution should be exercised. Micro dusts are the fine particles that can be inhaled without restriction. They reach the deep air ways such as the alveolar region and cause degenerative pathogenic tissue reaction, in other words the dreaded Pneumoconiosis. That is why it is so important to have an extraction system with enormous suction power which captures the fine dust paticules and leaves little chance of them escaping into the workplace. There are giudelines and recommended limits of concentration in the air of dust particles. Creating awareness in the Dental Community of the dangers provides the impetus to explore and research for the best answers. Some values to look for are two stage filter systems offering a 99.9% capture rate. Filter materials that meet ZH/1487 and EN-60335-2-69 designations. The unit should be tested for dust category 1 (health endangering dust with MAK values > 0.1 mg/m3). And finally you should also consider noise levels of these dust extractors when investigating your options. ***Source: Peter T. Pontsa, RDT***

For further information on the selection process, contact us at Dent-Line 1-800-250-5111 or e-mail us at info@dent-line.com

Medical studies in Europe confirm health is endangered with individuals who work in poorly ventilated workplaces.

Peter T. Pontsa, RDT

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About Our Organization...

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Continuing education credits apply for a review of this newsletter. For details contact the Quality Assurance committee in your jurisdiction.

Locking Pin Snap System Cont'd

A drop of the **Bredent DTK adhesive** is evenly spread in the hole on the bar and chrome casting. The locking pin sleeve is covered with a thin layer of DTK adhesive and pressed into the chrome casting / bar assembly.Excess adhesive residue is removed after hardening (12 min. or 5 min. with UV light). After 8 hours the locking pin can be exposed to the stresses of opening and closing. The case is then finished to the standards of practice.

Locking Pin E which can be used directly into the denture secured with cold cure acrylic or Locking Pin A, whichever locking pin attachment you use is effective even in combination traditional over denture bar attachments. They also ensure predictable stability and retention by preventing lift off. This results in a prosthesis with superior function and comfort for the patient through reliable lab products.

Source: Peter T. Pontsa, RDT

Bredent Products used in this case description: Locking Pin Snap E (44000652), Locking Pin Snap A (44000654), HM Centre Drill (33000660), Diatit Multi-Drill (33000730), Milling & Drilling Oil (55000008), Wax bars 1x6x8mm (43002650), Pi-Ku-Plast Model Resin (54000173), FGP Insulating Liquid (54001027), DTK Metal Adhesive (54000106)

For more information, contact Dent-Line at **1-800-250-5111**

Trade News:

We are pleased to announce that we will be participating in the following trade shows:

• **DentAtlan-Tech:** to be held in Halifax May 14th & 15th of 2004. It will be held in co-operation with Spectrum magazine and the Denturist Association.

• **Les Journees Dentaire International des Québec:** to be held from May 29th to June 2nd of 2004 in Montréal. Various speakers from both Canada and the US will participate. In collaboration with L'ordre des techniciens dentaire du Québec. The congress will sponsor an attachment program presented by Peter T. Pontsa RDT on June 1st of 2004 from 8:30 am to 11:00 am.

• **Perfecting Your Practice:** conference presented by the Denturist Association of Ontario will be held at the University of Guelph June 3rd to the 5th. The conference continues to offer an oportunity for every denturist to satisfy the profession's new continuing education standard.

• **Canadian International Dental Congress:** to be held in Toronto on October 1st and 2nd. The Techno Clinical Education Forum offers unparallelled Continuing Education Credits. To be held at the Sheraton Parkway North Conference Centre.

Special Announcement:

Dent-Line of Canada Inc. and Renfert USA are pleased to announce a donation to the Dental Technology Program at George Brown College. On March 4th of 2004 Peter T. Pontsa RDT. President of Dent-Line visited the school and presented a Renfert Microscope to the Dental Health co-ordinator Bernie Mullen RDT. The 1st year students also received sculpturing wax samples. Dent-Line and Renfert feel proud to be able to improve the quality of education through these donations.

Pictured are Mr. Peter T. Pontsa RDT., 1st year students and Mr. Bernie Mullen RDT.

Special Announcement:

Mr. Hatem Raslan

Dent-Line of Canada is very pleased to announce that Mr. Hatem Raslan joined our company in November of 2003 as our Customer Service Representative. Mr. Raslan was educated in Egypt at the American University of Cairo where he studied business administration and marketing courses. He is also fluent in French. Mr. Raslan's duties include Order Desk as well as Accounts Receivable.

For customer service in French, please ask for Mr. Hatem Raslan or Mrs. Angela van Breemen.

Pour le service en français appelez simplement M. Hatem Raslan ou Mme. Angela van Breemen.