Vertex™ ThermoSens

Natural feel & aesthetic look

Vertex Dental

www.vertexthermosens.com

Key Vertex™ ThermoSens benefits

Strength, aesthetics & comfort

ThermoSens' strength and comfort is beyond comparison with any other denture base material on the market today. Its rigid body lets you create a thinner denture which fits perfectly and comfortably in the patient's mouth. Unlike acrylic, when dropped or mishandled its thermoplastic base will ensure that the impact is absorbed rather than dispersed, thus avoiding fractures or total separation.

Color integration

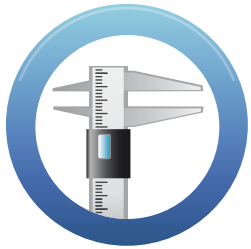
Unlike most thermoplastic companies who introduce color after finishing creating their nylon beads (by pouring color over raw white nylon beads), ThermoSens integrates its color into each bead during the mixing process.

This ensures an even color distribution that will ensure every injection is consistent. This method also eliminates any random color spots, flares or any other unnatural coloring that would not occur in a patient's mouth.

Biocompatible

No liquid chemicals are added to ThermoSens material during the process, including at the finishing stage (unless your clear frame is made partially with acrylic saddles). This is a promising alternative for those patients who are sensitive to chemicals or acrylic resins. It means you can offer the patient an allergy-free appliance.

Low volume shrinkage



Unlike acrylic dentures that have an 8% shrinkage rate, ThermoSens has managed to reduce this to <1%, which ensures the denture will enjoy a superb fit in the patient's mouth.

Non-absorbable

Due to the high density of our thermoplastics, liquids and consumables are practically unable to penetrate our products. This ensures that minimal of yellow or brown discoloration will occur over time. Whether a patient is a heavy coffee drinker, a smoker, or enjoys acidic drinks, ThermoSens is virtually impenetrable.

ThermoSens versus traditional

Thermoplastic partial denture	New	Old

- Rigid and comfortable
- Less bone resorption
- No discoloration
- Durable

Partial frame denture

- No metal clasps
- Almost invisible
- Lightweight
- Durable, no discoloration

Full denture

- Perfect fit
- Virtually unbreakable
- No residual monomer
- Low allergy

Vertex™ ThermoSens is monomer-free and so is ideally suited to patients unwilling or unable to accept dentures made from materials that could give rise to allergic reactions or other sensitivity problems.

ThermoSens is virtually unbreakable, and provides an excellent fit due to the lack of volume shrinkage (<1%).

ThermoSens is suitable for full and partial dentures. It can be used for rebase and reline jobs, and is also suitable for creating overdentures on implants, splints, temporary (30 days) crown and bridge.

It's even possible to perform repairs! It is available in 12 colors. ThermoSens is also quick and easy to polish.

ThermoSens test results

Here are four major tests we conducted to show how Vertex™ ThermoSens stands out on its own

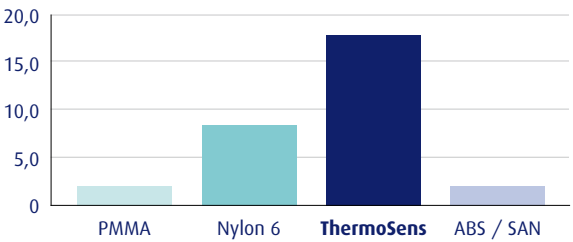
Charpy impact strength

This is a standard high-strain test to determine the amount of energy absorbed by a material during fracture. As you can see, ThermoSens' impact strength is far ahead of its competitors'.

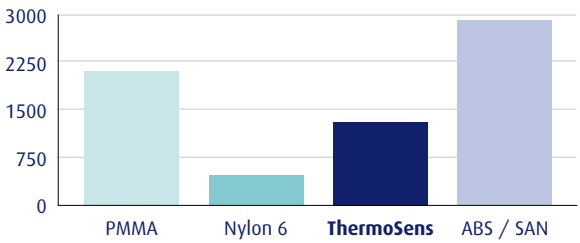
Flexural modulus

Here we can see that ThermoSens is more rigid than nylon 6, but flexible enough to engage under heavy undercuts. This ensures no unwanted movement while chewing.

Charpy impact strength kJ/m² notched



Flexural modulus [MPa]



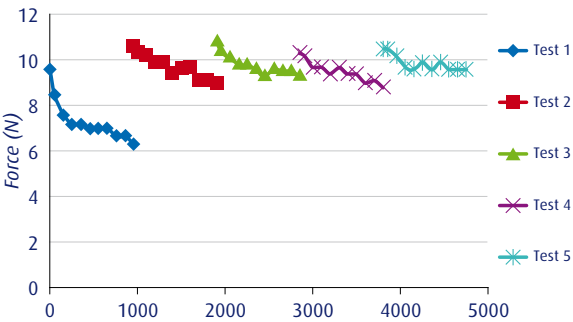
Hysterese

The hysterese graph shows the durability of a ThermoSens denture. After bending the clasps 5,000 times, they remain in their original position. This boils down to a period of five years without repairing or readjusting the ThermoSens denture.

Toughness test

This test shows the amount of energy per volume that a material can absorb before rupturing.

Amount of bendings



Toughness

Toughness tests		
Material	*Kmax*	*Wf*
ISO 20795-1:2008	≥ 1.9 MPa· $m^{1/2}$	≥ 900 J/m^2
PMMA	3.6 MPa· $m^{1/2}$	3000 J/m^2
ThermoSens No breakage	3.4 MPa· $m^{1/2}$	160210 J/m^2

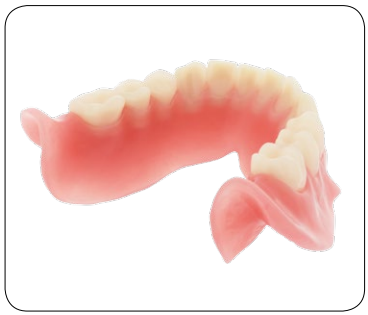
Endless options

Full denture upper shade T03 (pink)



Full denture lower shade T03 (pink)





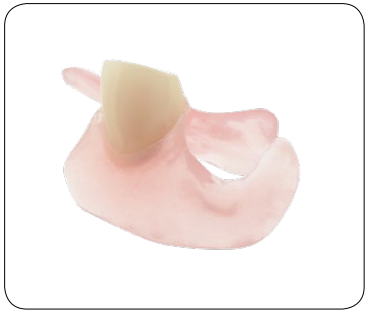
Partial denture lower shade TTR (translucent pink)



Partial denture upper shade T03 (pink)



Spider shade TTR (pink translucent)


Partial denture upper shade TTR (pink translucent)

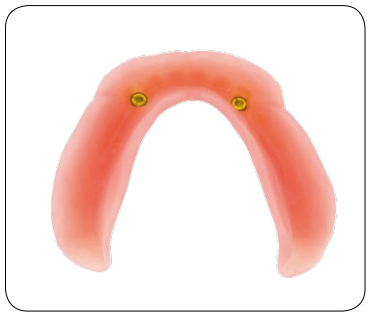


Endless options

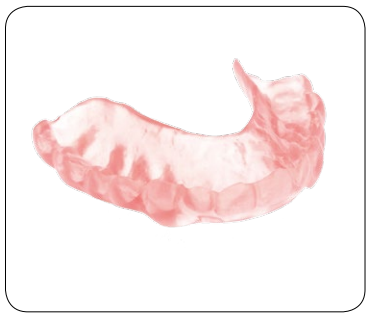
Telescope denture lower shade T03 (pink) teeth shade TA2



Overdenture lower on implants shade T03 (pink)



Splint shade TTR (pink translucent)



Vertex™ ThermoSens experiences

Javier Ubeda, NC Laboratorio Dental, Spain

"My first experience with thermoplastic materials and systems was ThermoSens. I consider myself lucky with this first encounter because my views and knowledge about such materials and systems were formed while using ThermoSens.

Three key aspects make ThermoSens stand out from other similar materials and systems: rapidity, simplicity and cleanliness. I believe these three to be the most important aspects persuading dental technicians and laboratories to start using ThermoSens."

AJ Posca, Posca Brothers Dental Lab, USA

"Our experience with ThermoSens has been a huge success to date. Being able to fabricate a full denture which would be virtually unbreakable was unheard of until this material was produced.

Now, with ThermoSens, we can offer doctors and their patients an appliance they can depend on. Not only can dentures be made, but we have also used ThermoSens in numbers of other devices, reassuring our doctors that their patients will go home satisfied."

Radu Banc, Cluj Napoca, Romania

"I have been working with thermoplastic materials for more than eleven years and I can certainly tell you that ThermoSens is a revolutionary material and a unique product! My experience has been that all Vertex-Dental products are made from high-quality material.

That's why I was eager to start working with ThermoSens, building on my early experience with it. ThermoSens offers a great advantage over all other thermoplastic materials on the market. The material is biocompatible, with low shrinkage of less than 1%, which is amazing, and it's easy to polish."

Fedir Moiseiev, Interdent Lab, Ukraine

"Our Lab has worked with rigid thermoplastic materials for seven years. That's why we were pleased to try out ThermoSens, as Vertex has a reputation for quality.

It has optimal physical characteristics, is easy to polish, has a wide range of colors and doesn't shrink. Another important feature is that the material is not affected by humidity and can be stored without vacuum packaging. With ThermoSens, you can produce full dentures with no volume shrinking and with the right stiffness, with transparent frames like the ones in metal, but with far improved aesthetics – and they are more biocompatible. It's also very easy to repair and reline."

Vertex™ ThermoSens product range

Vertex™ ThermoSens
Available in medium, large and extra-large cartridges, packed per 12. Available in ∅22 mm and ∅25 mm.

Vertex™ ThermoSens
Also available as bulk granulate for filling cartridges. Empty cartridges available in ∅22 mm and ∅25 mm.

Shade Guide Vertex™ ThermoSens
Vertex™ ThermoSens is available in 12 colors.

Vertex™ ThermoFlask
Key included. Available in ∅22 mm (suitable for ThermoJect) and ∅25 mm.

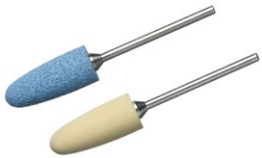
Vertex™ ThermoJect 22
Suitable for ∅22 mm cartridges. Available in 100V, 110V and 230V.

Vertex™ ProClean
ProClean is compounded with natural ingredients, is bactericidal and will keep dentures and appliances in optimal condition.

Vertex™ Sprue Wax Soft
Special wax to enable you to create better injection channels. Available in 4.5 mm and 9.5 mm.

Vertex™ ThermoFlow
Separation liquid for plaster versus Vertex™ ThermoSens.

Vertex™ ThermoGloss
High-gloss paste an emulsion for finishing Vertex™ ThermoSens.



Vertex™ Thermo Silicon Polisher
For polishing the surface and the edges.

Vertex™ Drill & Bur
To create small holes in the teeth, 0.9 or 1.3 mm.

Vertex™ Thermo Fusing Liquid
Liquid for extension, relining and rebasing.

Vertex™ ThermoJect 22

The Vertex™ ThermoJect 22 is the injection machine which enables dental technicians to inject easily, efficiently and quickly.

The temperature will reach 290°C in only 8 minutes. The heating of the cartridge and the actual injection material is fully automated. Our aim was to work with precise temperature and pressure values so that technicians have predictable end results.

Technical specifications

- Suitable for ∅22 mm cartridges
- Operational in 8 minutes (from 0°C to 290°C)
- Pressure adjustable from 6–9 bars
- Deviation of display temperature < 1%
- Heating mode max. 20 minutes
- Full automated heating and injection program
- Operational again after 3 minutes
- Available in 100V, 110V and 230V
- 50Hz–60Hz
- Universal power supply plug available

Education & Training

The Vertex-Dental Academy is acquiring increasing renown as an institute for education and further training, both nationally and internationally.

One of the principles of the Vertex-Dental Academy is its emphasis on fixed procedures. These are the initial requirements for processing high-quality materials in the denture department of a dental laboratory. We provide hands-on courses, demonstrations and lectures. Thanks to our international, highly experienced trainers we can conduct courses in different languages all over the world, or in our Academy.

Become a certified ThermoSens lab by attending our academy training. It is also possible to undergo training at your own facility. We have trainers located all over the world. Please contact your local area sales manager to make an appointment.

Certified Vertex™ ThermoSens trainers

Spain
Javier Úbeda
NC Laboratorio Dental

Egypt
Ghassan Kayyali
Delta Dental Supplies

Australia
Simon Asworth
Latrobe Community Health Service

Romania
Radu Banc
New York Dental SRL

Poland
Dragan Skrobic
Denon Dental

China
Zhang Tiancheng
Shanghai Foshion Dental Technology

Hungary
Csaba Szegö
Hungary

Netherlands
Menno Pot
Vertex-Dental

Philippines
Dr. Clayton Omaking
Dental Domain

Technical support

Processing Vertex™ ThermoSens

What class of gypsum (plaster) is recommended for embedding the ThermoFlask when using ThermoSens?
We recommend using Class III gypsum (plaster) for embedding and flasking your models.

For full dentures, how many sprues are needed?
When flasking a full denture only one sprue is necessary in the middle of the flask

Before processing, do I need to add retentions to each tooth being (re)placed?
Yes, it is very important to put T-shape retention holes into each tooth making sure they connect to maximize retention.

How much pressure is recommended for injecting ThermoSens?
Injection is recommended to be a minimum of 6.5 bars / 94.3psi.

To what temperature does ThermoSens need to be heated?
Recommended temperature is 290°C.

Do you need to preheat the flask before injecting ThermoSens?
It is recommended to preheat the flask by placing the flask on the chamber of the ThermoJect. In the meantime the cartridge is heating up inside the chamber.

How long do you heat a cartridge with ThermoSens before injecting?
For best results, heat the cartridge for 18 minutes before injecting.

After injection, how long must you wait before opening the flask?
After injection it is recommended to bench-cool the flask for at least 30 minutes and place the flask afterwards for 20 minutes in cold water before opening the flask.

Technical support

Finishing

Can ThermoSens be finished using materials I might have from other nylon products?
Yes, if you have rubber wheels, or even acrylic style burs. In most cases ThermoSens can be finished by using existing tools, for example the Vertex polishers.

Does ThermoSens splinter and string off when grinding?
No, ThermoSens is easy to adjust and shaves off in almost exactly the same way as acrylics. Take a carbide bur and make your required adjustments without applying too much pressure. It is not recommended to hold a bur in one spot for too long. ThermoSens is still a thermoplastic material and if heated up too much it can deform.

How can I polish a ThermoSens denture?
Our research has shown that the best way to polish ThermoSens is using ThermoGloss paste and emulsion for the best polishing results. It has been proven to be the simplest and least complex way to ensure great polishing and a long-lasting shine.

Vertex™ ThermoJect 22

Is there a program with which I can adjust the temperature, heating time and cooling time?
Yes, program Z allows you to adjust these three variables to a certain extent.

If I select the wrong program on the ThermoJect 22 how can I cancel?
When you want to cancel a selected program you need to press the green enter button twice rapidly.

Can I control the injection manually after the heating time is finished?
Yes, when the ThermoJect 22 starts the heating time for heating up, the cartridge and the safety bar are pushed down and the ThermoJect 22 will not inject until the safety bar is closed.

Warning: when the heating time is finished and you inject a few minutes later by pulling up the safety bar, the material could show discoloration due to the cartridge having preheated too long.

Miscellaneous

What machines can ThermoSens be used in?
ThermoSens can be used in machines that have 22mm or 25mm diameter cartridge openings and can reach the correct bars/psi pressure and temperature needed to inject correctly.

Recommendation: Vertex-Dental uses the ThermoJect 22 machine for any and all testing purposes, and it has been shown to work better than any other machine on the market.

Does ThermoSens contain any monomer or acrylic?
No monomer or acrylic is added when creating a ThermoSens denture.

Can you add teeth or clasps or repair a ThermoSens denture?
Yes, adding to a ThermoSens product using the injection method and a fusing or bonding liquid will allow you to add teeth or clasps to a ThermoSens denture. Just make sure you overlap the wax a millimeter or two over the existing area to ensure that strong bonding is achieved.

How can I clean a ThermoSens denture?
Our research has shown that cleaning with Vertex™ ProClean provides the optimum result. ProClean also disinfects the ThermoSens denture.

Lighter, Thinner, Stronger

Making the right choice, the ThermoSens choice!

Authorised dealer

BTS1402UK

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