

USER GUIDE
ThermoSens
Rigid
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Preface

The following instructions for use are for dental technicians who use ThermoSens Rigid as a dental prosthesis base. ThermoSens Rigid is intended exclusively for professional dental work and treated using conventional dental methods and instruments. This instruction for use provides also information about safety and environmental aspects, a safety datasheet is available on www.udscanada.com and at local dealers. Transferable cleaning instructions are available for the denture wearer.

1. Introduction

ThermoSens is a thermoplastic material to be used for dental prosthesis. The product is based on a compounded mixture of Polyamide and pigments. Because ThermoSens is on a polyamide basis and to be used as a thermoplastic in the injection technique, the product is suitable for people allergic for residual monomer, since the product doesn't contain residual monomer.

ThermoSens Rigid is intended mainly for full and partial dentures.

The technical instructions provided in this instruction for use should be followed. Any deviation may lead to a negative effect on the intended result and will not guarantee the quality of the end product.

2. Description and effects

The technique for ThermoSens Rigid is based on injection technique. The technique can be done with an automatic or manual injection machine. The preparations of the model and flask are according to the standard procedures of the dental technique.

The pigments in ThermoSens Rigid are built in the raw material through the production process, this leads to an equal distribution of pigments in the denture. (Only when the vein effect is desired, extraneous pigments are present in the material).

3. Contra-indication

An allergic reaction of wearers to denture base material is rare. The amount of pigments in the denture base is reduced as much as possible. Any deviation from this instruction for use may have negative effect on the chemical and physical quality of ThermoSens Rigid. In case of an allergic reaction, please contact a medical physician.



4. Hazard & Precaution (H & P phrases)

The product ThermoSens Rigid exists of polyamide and has got no identification requirements.

Inhalation: In case of visual irritation caused by inhalation of vapours during thermal processing of the product, supply fresh air and seek possible medical attention.

Contact with skin: Cool down melted material on skin with water. Do not remove the melted material. Skin burns need to be medical treated.

Contact with eyes: flush with plenty of water.

Contact with hands: with dust covered skin, need to be washed with water and soap. Dust of the material may extract moisture from skin. Frequently use skin protection crème.

Information about the handling of the product can be found in the safety datasheet, which is available on www.udscanada.com

5. Storage conditions, expiry date and transport

Store the product in the original packaging at roomtemperature in a dry area.

Close the packaging after each use. The expiry date of the product is mentioned on the product label. In case of exceeding the expiry date, the product is no longer guaranteed in terms of treatment. ThermoSens Rigid can be freely transported.

6. Processing ThermoSens Rigid

Pretreatment synthetic teeth

Since there is no chemical bonding between synthetic teeth and ThermoSens, a mechanical bonding must be obtained. Make a hole mesial to distal through the tooth, using a small cutter of 0.9-1.3 mm. Then a second hole must be made from the bottom of the tooth, ending in the first hole. This T-connection is the only bonding between the tooth and ThermoSens Rigid. For more bonding, the downside of the tooth can be treated with Teeth grinder.

Pretreatment flask

Tip: always work on fresh plaster surfaces. Use at least class III or IV plaster for the model and for embedding the wax prosthesis in the flask.

Apply Sprue Wax Soft for injection sprues. Use Sprue wax soft 4.5mm for side sprues and 9.5mm for the main sprue.

Mix Putty properly before use. Press the putty firmly so that the teeth come through. Create retention in the putty, using a wax knife.

Insulate plaster from plaster with alginate separation fluid (e.g., Divosep). Heat the flask in water at $\pm 70^{\circ}\text{C}$ for about 10 minutes. The modelling wax is then plastic enough and the flask can be opened. Take the base plate and modelling wax away immediately after opening the flask and rinse the plaster in the flask with clean boiling water to remove modelling wax remnants.

Before placing the cartridge in the injectionmachine, spray the cartridge with silicone spray. Handle the pre heating time as mentioned in *Processing times*. During the pre heating of the cartridge it is advised to heat flask. This can be done by placing the open flask for 15 minutes in a warm water bath of $\geq 90^{\circ}\text{C}$. About 2 minutes prior to injection, remove the flask from the water bath.

Dry the flask and treat the injectable surfaces with a separation fluid suitable for injection technique, e.g. Thermoflow. Do not use an alginate separation fluid, this will burn during the injectionproces and may have negative effect on the endresult.

Processing times

The temperature, heating time and pressure depends on the type of injectionmachine used and the diameter of the cartridge.

It is recommend to calibrate the temperature inside the injectionmachine, using a thermocouple.

In case the calibration shows a temperature difference between the display and the thermocouple, adjust the difference in temperature in the temperature setting.

It is highly recommended not to exceed a temperature of 285°C .



For 22mm cartridges handle a pre heating time of 16 minutes and a pressure of 6.5 bar at 270°C.
 For 25 mm cartridges handle a pre-heating time of 18 minutes and a pressure of 8.5 bar at 270-280°C.
 There is no difference in heating time between M, L and XL size cartridges.

Injection

When the cartridge is placed in the injection machine, the cartridge is ready for injection after 16/18 minutes. After injection remove the flask from the machine.

For more information about the injection see the instructions for use of the Injection machine.

Cooling down

After the flask is removed from the injection machine, the flask must be placed in boiling water (100°C) or in a stove at $\geq 100^\circ\text{C}$ for at least 30 minutes. With this annealing process, the shrinkage is reduced as much as possible. After the annealing process cool the flask with bench cooling for 20 minutes. Accelerating this process (e.g. placing in cold water) may have negative effect on the end result.

Finishing

Polish the denture using polish paste and high gloss materials. Do not use pumice, grinding wheels or abrasive tapes. Scratches made by using these kind of materials, are very hard to remove.

7. Error analysis

Phenomenon	Possible cause	Solution
- the product is not fully injected	- low injection temperature - not enough pressure	- ensure correct injection temperature - ensure correct pressure
- Not fully injected clasps	- the clasps are modelled too thin	- model the clasps thicker
- bite raising	- too much Putty 1:1 used.	- use less Putty 1:1, make a thin layer of putty.
- Tooth becomes loose	- too small holes for T-joint - no T-joint - wax residues in the T-joint - too low injection temperature	- use at least 0.10 cm cutter for the preparation of the T-joint - prepare a T-joint in the tooth - clean the T-joint with boiling water - ensure correct injection temperature
- plaster remnants on plastic	- thin edges are not rounded - defects in separation layer	- remove thin edges - improve separation method.
- Discoloration of product after injection	- too high injection temperature - too long pre-heating time of the cartridge	- ensure correct injection temperature - ensure correct pre-heating time
- Material has become brittle after injection	- too high injection temperature - incorrect annealing process	- ensure correct injection temperature - ensure correct annealing process
- Shrinkage	- too low Injection temperature - incorrect annealing process	- ensure correct injection temperature - ensure correct annealing process
- Embedding plaster expands from flask	- wrong Class of gypsum used for embedding	- ensure use of at least Class III gypsum for embedding

Differences in colour nuance may occur due to production in batches of the raw material and product.



8. Plastic and packaging waste

The product ThermoSens and the cartridges are not environmentally harmful. Deliver plastic and packaging waste to a collection point for waste material.

9. Instructions for denture cleaning

Instruct the denture wearer directly or indirectly to clean the denture twice a day with cold water, mild soap and a soft brush. If a denture cleaner is used (preferably one on natural base, e.g. ProClean), instruct the wearer to follow the instructions of the cleaner closely. Discourage the use of hot water and unsuitable cleaners or methods as these will cause irreversible damage to the denture.

10. Delivery units

The product ThermoSens Rigid is available in the following packaging sizes:

Cartridge 22 mm size M	Bulk 200 g
Cartridge 25 mm size M	Bulk 400 g
Cartridge 22 mm size L	Bulk 1000 g
Cartridge 25 mm size L	Bulk 4000 g
Cartridge 22 mm size XL	Bulk 20000 g
Cartridge 25 mm size XL	

Available shades:	TTR	T07
	TTRV	T10
	TS	TA2
	T03	TA3
	T05	TCL

Additional products:

- Thermo Twisted drills, available in 0.9 and 1.3 mm
- Thermo Flow
- Thermo Gloss paste
- Thermo Gloss emulsion
- Thermo Silicone polisher
- Thermo Sprue wax, available in 4.5 and 9.5 mm
- Thermo Flask
- ThermoSens Cartridge 22 mm size M empty
- ThermoSens Cartridge 25 mm size M empty
- ThermoSens Cartridge 22 mm size L empty
- ThermoSens Cartridge 25 mm size L empty
- ThermoSens Cartridge 22 mm size XL empty
- ThermoSens Cartridge 25 mm size XL empty

Distributor


Unique Dental Supply Inc. | 1-888-532-0554 | www.udscanada.com


Manufacturer

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Explanation of symbols on labelling


 : Notified Body ; SGS United Kingdom


 : Batch number of product


 : Manufacturer

 : Temperature

 : Keep away from sunlight

 : Consult instructions for use

 : Use-by date

 : Keep away from moisture