

Heraeus

Flexitime®



Reliable Precision – Every Time

Product information

Flexitime®

Reliable precision – every time



Excellent impressions are the base for accurate prosthetics and thus essential in every dental office. Therefore two central factors of success are crucial:

Accuracy of impression, precision

The accuracy of fit and precision of an impression or precision are achieved by the immanent physical properties of an impression material, such as dimensional accuracy, detail reproduction or hydrophilic properties.

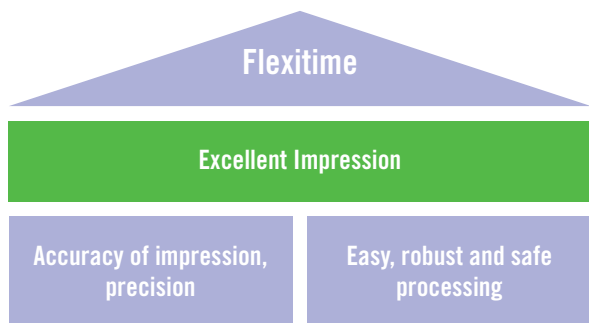
Easy, robust and safe processing

This decisive factor results from the handling features of the impression material, e.g. setting times, delivery systems or broadness of indications.

Flexitime is the VPS precision impression material from Heraeus Kulzer, whose development was focused especially on these requirements. Through a balance of clinically relevant physical properties Flexitime yields compulsory precision and accuracy of impression, every time.

The innovative setting time concept features flexible working time combined with an always short intraoral setting time, 3 different delivery systems including automatic mixing as well as the concise allrounder system setup with 6 various viscosities enable easy, robust and safe processing of Flexitime.

Furthermore, Flexitime attests more than 9 years of market experience and is clinically proven. Multiple scientific studies and awards acknowledge Flexitime's reliable quality.



Complementing the Flexitime precision impression material, Heraeus has developed the new Flexitime Bite, a scannable bite registration material based on vinylpolysiloxane. Ideally concerted, the Flexitime family serves as an excellent base for accurate prosthetics and satisfied patients.

Flexitime®

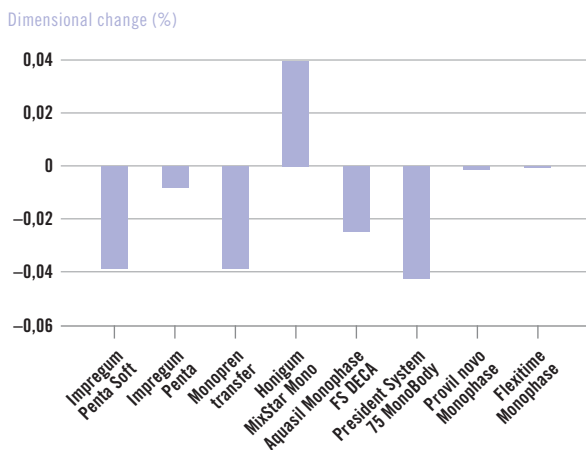
Pure precision

The accuracy of fit and precision of an impression or precision are achieved by the immanent physical properties of an impression material, which are determined by parameters like dimensional accuracy, detail reproduction or hydrophilicity.

Dimensional Accuracy

Dimensional accuracy describes the degree of three dimensional exactitude of a model in relation to the original form and is therefore a measure for precision.

Results of *in vitro* study about the dimensional accuracy of 8 different impression materials



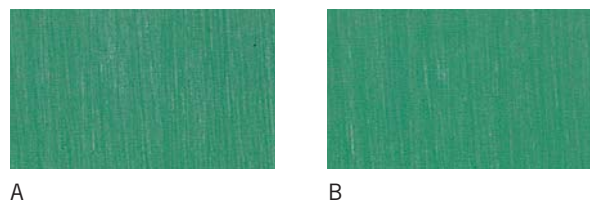
Flexitime Monophasse showed with a value of $-0,001\%$ in this study the smallest dimensional change and therefore the most exact dimensional accuracy.

Source: Piowarczyk, A., Ottl, P., Büchler, A., Lauer, H.-Ch., Hoffmann, A.: *In Vitro* Study on the Dimensional Accuracy of Selected Materials for Monophasse Elastic Impression Making. *Int J Prosthodont* 2002; 15: 168–174, Fig. 4

Detail Reproduction

Detail reproduction is the ability of an impression material to replicate details on the surface of an object and is necessary to achieve good marginal fit of the final restoration. Flexitime materials reproduce a line of far below $20\ \mu\text{m}$ in width. Sharp!

In vitro-study about surface detail reproduction with new impression materials



Microscopic appearance (x 20 magnification) of representative Flexitime Correct Flow impression surfaces from air-dried (A) and wet (B) dentin. Grinding scratches produced during preparation of dentin are readily seen on both impressions.

„Surface detail reproduction from prepared dentin with Flexitime (...) is high and very satisfactory.“

Source: Kanehira, M., Finger, W.J., Komatsu, M.: Surface detail reproduction with new elastomeric dental impression materials. *Quintessence Int* 2007; 38:479-488.

Hydrophilic Properties – Hydroactive

Hydrophilicity describes a material's affinity to water. This property improves a material's wettability in the moist intraoral environment and creates smooth surfaces on the model. However, immanent hydrophilic materials also absorb water, which may lead to moisture expansion and dimensional instability. Flexitime materials are hydroactive – they feature optimal wettability without absorption of water and stay dimensionally stable.

Flexitime®

Easy, robust and safe processing



Time that works for you

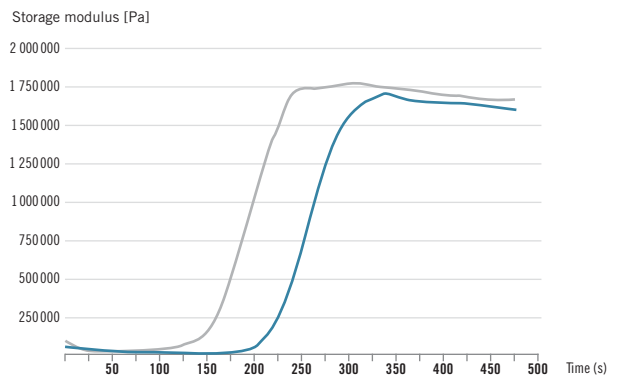
Flexitime stands out from other A-Silicones due to its smart setting time concept. Flexitime allows a flexible working time varying from 1:00 – 2:30 min combined with an always short intraoral setting time of 2:30 min. Flexitime controls the polymerisation kinetics by mouth temperature and sets rapidly after insertion into the mouth. The short intraoral setting time is of great comfort for the patient and time saving for the practice.

Flexitime combines the advantages of fast set and regular set materials, proving flexible use in just one material for extensive prosthetic restorations, as well as single crowns. Thus, Flexitime adapts to the individual working style of the practitioner and enables stress-free impression taking.

| Flexitime Setting Time Concept | |
|---|--|
| Variable Working Time As little as 1:00 min or up to 2:30 min! | Short Intraoral Setting Time Always 2:30 min! |
| Multiple-Unit Impression | 2:30 |
| Single-Unit Impression | 1:00 |

Flexitime begins to set when the tray is seated in the mouth.

Rheometry assessment of flexible working time



Rheometry curve Flexitime Monophase: Temperature increase from 23 to 36°C after 30s (grey curve) and 145s (blue curve) working time. Reach of simulated mouth temperature of 36°C after ca. 60s (grey curve) and 175s (blue curve). That is when Flexitime's setting process accelerates significantly and requires the same short time to cure.

"The material shows indeed the flexibility in working time as quoted by the manufacturer, because the setting process commences in the relevant time period not before achieving mouth temperature."

Source: Wöstmann, B., Ngyuen, Ch.-Th.: Untersuchungen zum Abformmaterial Flexitime – Abschlussbericht, University of Giessen, June 2000.

Flexitime®

Easy, robust and safe processing

Dynamix® System

The Dynamix System consists of the new Dynamix Cartridge and the functional Dynamix Machine and serves as the base for precise impressions and accurate prosthetics.

| | Features | Benefits |
|-----------------------------------|---|---|
| Quality and Process Safety | ■ Homogeneous and void-free mixing | ■ Assurance of precision and fitting accuracy |
| | ■ Consistent quality of mix – independent of operator | ■ Consistently reliable |
| Savings | ■ Exact dosage of impression material | ■ Material saving |
| | ■ Fast mixing and precise dosage of material | ■ Time saving and easy to use |

A US study has proven the easy processing of automatic mixing systems:

“Use of the electronic technique made it easier to facilitate equal mixing ratios between base and catalyst, providing better quality of mix. The electronic mixing technique could reduce potential contamination and facilitate more reliable working and setting times for definitive impression as compared to the hand-mixing technique.”

Source: Nam, J., Raigrodski, A.J., Townsend, J., Lepe, X., Mancl, L.A.: Assessment of preference of mixing techniques and duration of mixing and tray loading for two viscosities of vinyl polysiloxane material. J Prosthet Dent 2007; 97: 12-7.

New!

Dynamix Machine

The Dynamix Machine offers all the advantages of automatic mixing, with additional functions, that simplify handling and increase safety.

- Selectable velocities for tray and syringe filling
- Automatic propulsion of pistons
- Automatic reverse drive for cartridge change
- Clear, concise labelling of functional elements & LEDs
- No propulsion of pistons when cover open
- Filling level indicator
- Transparent cover



Dynamix Cartridge

The Flexitime Dynamix Putty, Flexitime Dynamix Heavy Tray and Flexitime Dynamix Monophase are now available in the new Dynamix Cartridge for 5:1 automatic mixing with customary mixing machines, e.g. Dynamix Machine.

- Safety and stability for homogeneous mixing quality
- Economic with more volume and less residual material
- Ready-to-use for fast and straight forward handling
- Environment-friendly, recyclable and “green point” for dual disposal system
- New Dynamix Mixing Tip and Fixation Ring for reliable mixing of all consistencies in Dynamix Cartridge



Flexitime® Dynamix® Putty

New!

The new Flexitime Dynamix Putty in the new Dynamix Cartridge is a kneadable high viscous impression material for automatic 5:1 mixing. Putty materials are often preferred for the prevalent and approved putty/ wash technique. However, hand-mixing the putty material is a technique sensitive procedure. Interference of sulphur on the mixer's gloves or hands, deviation in dosage as well as mixing ratio

of catalyst and base material, or influence of mixing technique and hand temperatures may affect the polymerisation and process safety. Together with the Dynamix Machine, the new Flexitime Dynamix Putty can comfortably be mixed at the touch of a button.

Flexitime Dynamix Putty perfectly complements the Flexitime assortment with the innovative setting time concept.

Accuracy of impression, precision

- True putty consistency for controlled insertion and compressive forces
- Balanced hardness for hydraulic pressure of wash material, dimensional stability and ease of removal

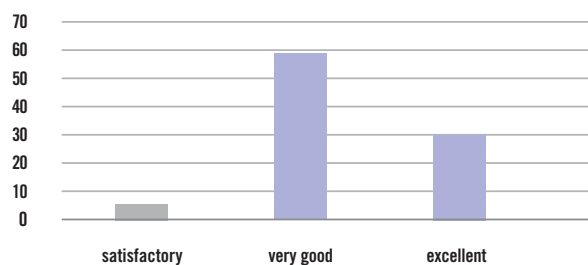
Easy, robust and safe processing

- Mouldable by hand as hand-mix putty due to low stickiness
- Convenient cutting for putty/ wash technique
- No interference by sulphur on the mixer's gloves or hands
- Easy and fast extrusion for automatic mixing machines

Results from a hands-on test with Flexitime Dynamix Putty with 1372 impressions in Germany, Italy, France and UK.

I assess the precision of the impression as:

[Answers in %]



90% of the test users evaluated the precision/ accuracy of the combination Flexitime Dynamix Putty/ Flexitime Correct Flow as very good to excellent.

Source: Internal data, Heraeus Kulzer GmbH, data on file.



Flexitime®

Light Flow & Medium Flow

New!

Based on the well proven Flexitime Correct Flow, Flexitime Light Flow and Medium Flow are the new wash materials in the Flexitime system. They feature state-of-the-art physical properties and two thixotropic consistencies in order to ideally meet individual preferences and impression techniques.

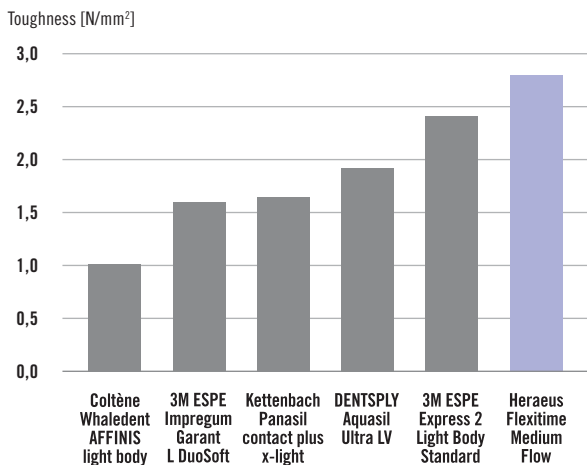
Accuracy of impression, precision

- Superior hydrophilicity on Polyether level for excellent performance in the sulcus
- Highest toughness prevents tearing of flashes and distortion upon removal
- Precise surface detail reproduction for accurate marginal fit

Easy, robust and safe processing

- Viscosities perfectly adapt to the individual working style
- Outstanding flow characteristics ideally suited to the preferred impression technique
- Distinct thixotropic properties prevent dripping off tooth and running down the pharynx

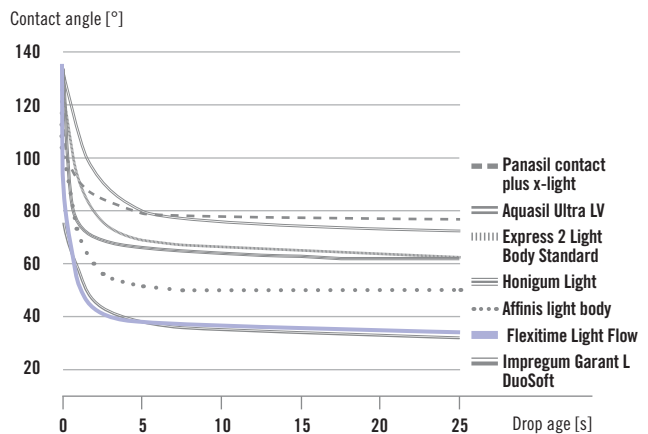
Results of in-vitro study about the toughness of 6 different impression materials



In this study, Flexitime Medium Flow proved the highest toughness which enables best to prevent tearing of flashes and distortion upon removal best.

Source: Thermoplastic Testing Centre, Bayer Material Science AG, Krefeld-Uerdingen, Germany, March 2009, data on file.

Results of in-vitro study about contact angles of unset impression materials



The contact angles of a water drop on Flexitime Light Flow – a measurement for hydrophilicity – are on Polyether level and demonstrate Flexitime's excellent performance in the wet sulcus.

Source: Geis-Gerstorfer, J.: Hochaufgelöste Kontaktwinkel-Messungen, University of Tübingen, Germany, May 2009, data on file.

Flexitime®

Allrounder system for all indications

Indications

The Flexitime range is an optimally matched system and its different types of material can be combined for all impression techniques to suit specific requirements. Flexitime customises to the preferences of the practitioner.

| Impression Material / Impression Technique | Indication | | | |
|--|----------------------------|--------------------------|-------------------------------|------------------------|
| | Crown & Bridge impressions | Inlay/ Onlay impressions | Transfer/ Implant impressions | Functional impressions |
| Flexitime® Easy Putty & Dynamix Putty for two-step and sandwich impressions in combination with Light Flow/ Correct Flow/ Medium Flow | | | | |
| Flexitime® Heavy Tray & Dynamix Heavy Tray for two step and double-mix impressions in combination with Light Flow/ Correct Flow/ Medium Flow | | | | |
| Flexitime® Monophase & Dynamix Monophase for single stage / monophase impressions | | | | |

Technical Data

Flexitime yields compulsory precision and accuracy of fit of an impression through balance of its high level physical properties.

| Flexitime | Mixing time [s] | Working time [min] | Time in mouth [min] | Shore A hardness | Deformation under pressure [%] | Elastic recovery after deformation [%] | Linear dimensional change [%] |
|---------------|-----------------|--------------------|---------------------|------------------|--------------------------------|--|-------------------------------|
| Easy Putty | 45 | 2:30 | 2:30 | 70 | 2 | 99.7 | -0.2 |
| Dynamix Putty | Auto | 2:30 | 2:30 | 68 | 2 | 99.5 | -0.2 |
| Heavy Tray | Auto | 2:30 | 2:30 | 72 | 2 | 99.0 | -0.2 |
| Monophase | Auto | 2:30 | 2:30 | 58 | 3 | 98.8 | -0.2 |
| Medium Flow | Auto | 2:30 | 2:30 | 44 | 4 | 99.8 | -0.2 |
| Correct Flow | Auto | 2:30 | 2:30 | 38 | 5 | 99.7 | -0.2 |
| Light Flow | Auto | 2:30 | 2:30 | 40 | 5 | 99.8 | -0.2 |

Source: Research & Development, Heraeus Kulzer GmbH, Dormagen/Germany, Data on file.

Flexitime® Bite

New!

The new Flexitime Bite is a scannable bite registration material based on vinylpolysiloxane. It is suited for universal bite registration as well as for powder-free optical recording of antagonists for CAD/ CAM technology, e.g. for manufacturing of all-ceramic restorations.

Accuracy of impression, precision

- Extra hard – very high final hardness of Shore D 40 for prevention of undesirable shifts when adjusting the position of the casts in the articulator
- Distinct thixotropy avoids flowing off from the occlusal surface into the interdental spaces, even edentulous gaps – and enables easy removal from the mouth
- Superb scannability for powder-free 3D-data recording of antagonists for CAD/CAM technology

Easy, robust and safe processing

- Extremely fast – convenient working time of 30s and fast intraoral setting time of only 30s for high patient comfort
- Easy to trim with a scalpel and grind at minimum risk of fracture
- Whipped cream like consistency assures resistance-free bite

Indications

Flexitime Bite has multifunctional applications:

- Standard bite registrations in the end bite position
- Coating of bite forks
- Key material for needle point registration
- Production of small model segments
- Powder-free optical data recording of antagonists for CAD/CAM technology



Technical Data

| Colour | Working time [min] | Minimum time in mouth [min] | HD hardness | Shore D hardness | Shore A hardness |
|----------|--------------------|-----------------------------|-------------|------------------|------------------|
| lavender | 0:30 | 0:30 | 78 | 40 | ≥ 94 |

Source: Research & Development, Heraeus Kulzer GmbH, Dormagen/Germany, Data on file.

Flexitime®

Product outline

Handmix Trial Kit

Flexitime Easy Putty Trial Kit

- 1 x 600 ml Easy Putty (each 300 ml Base & Cat.)
- 1 x 50 ml Light Flow
- 1 x 50 ml Medium Flow
- 12 x Mixing Tips yellow
- 12 x Intraoral Tips yellow
- 1 x Universal Adhesive (10 ml)



Handmix Refill

Flexitime Easy Putty Refill

- 4 x 600 ml Easy Putty (each 4 x 300 ml Base & Cat.)



50 ml Automix Cartridge Trial Kits

Flexitime Heavy Tray Trial Kit

- 2 x 50 ml Heavy Tray
- 6 x Mixing Tips green
- 1 x 50 ml Light Flow
- 1 x 50 ml Medium Flow
- 12 x Mixing Tips yellow
- 12 x Intraoral Tips yellow
- 1 x Universal Adhesive (10 ml)



Flexitime Monophase Trial Kit

- 3 x 50 ml Monophase
- 12 x Mixing Tips green
- 12 x Intraoral Tips white
- 1 x Universal Adhesive (10 ml)



50 ml Automix Cartridge Refills

Flexitime Heavy Tray Refill

- 6 x (2 x 50 ml) Heavy Tray
- 6 x 6 Mixing Tips green



Flexitime Monophase Refill

- 6 x (2 x 50 ml) Monophase
- 6 x 6 Mixing Tips green



Flexitime Medium Flow Refill

- 6 x (2 x 50 ml) Medium Flow
- 6 x 12 Mixing Tips yellow



Flexitime Correct Flow Refill

- 6 x (2 x 50 ml) Correct Flow
- 6 x 12 Mixing Tips yellow



Flexitime Light Flow Refill

- 6 x (2 x 50 ml) Light Flow
- 6 x 12 Mixing Tips yellow



Flexitime Bite Cartridge Refill

- 3 x (2 x 50ml) Flexitime Bite
- 3 x 12 Mixing Tips green



Flexitime®

Dynamix System outline

Dynamix Cartridge Trial Kits

Flexitime Dynamix Putty Trial Kit

- 1 x 380 ml Dynamix Putty
- 10 x Dynamix Mixing Tips
- 1 x Dynamix Fixation Ring
- 1 x 50 ml Light Flow
- 1 x 50 ml Medium Flow
- 12 x Mixing Tips yellow
- 12 x Intraoral Tips yellow
- 1 x Universal Adhesive (10 ml)



Art. no.: 6604 1065

Flexitime Dynamix Heavy Tray Trial Kit

- 1 x 380 ml Dynamix Heavy Tray
- 10 x Dynamix Mixing Tips
- 1 x Dynamix Fixation Ring
- 1 x 50 ml Light Flow
- 1 x 50 ml Medium Flow
- 12 x Mixing Tips yellow
- 12 x Intraoral Tips yellow
- 1 x Universal Adhesive (10 ml)



Art. no.: 6604 1071

Flexitime Dynamix Monophase Trial Kit

- 1 x 380 ml Dynamix Monophase
- 10 x Dynamix Mixing Tips
- 1 x Dynamix Fixation Ring
- 1 x Universal Adhesive (10 ml)



Art. no.: 6603 5989

Dynamix Cartridge Refills

Flexitime Dynamix Putty Refill

- 3 x (2 x 380 ml) Dynamix Putty
- 3 x 2 Dynamix Mixing Tips
- 3 x 1 Dynamix Fixation Ring

Art. no.: 6603 5991



Flexitime Dynamix Heavy Tray Refill

- 3 x (2 x 380 ml) Dynamix Heavy Tray
- 3 x 2 Dynamix Mixing Tips
- 3 x 1 Dynamix Fixation Ring

Art. no.: 6603 5992



Flexitime Dynamix Monophase Refill

- 3 x (2 x 380 ml) Dynamix Monophase
- 3 x 2 Dynamix Mixing Tips
- 3 x 1 Dynamix Fixation Ring

Art. no.: 6603 5993



Dynamix Machine Kits

Flexitime Dynamix Putty Dynamix Machine Kit

- 1 x Dynamix Machine 230 V
- 3 x (2 x 380 ml) Dynamix Putty Trial Kit
- 3 x 2 Dynamix Mixing Tips
- 3 x 1 Dynamix Fixation Ring

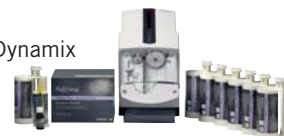
Art. no.: 6603 5995



Flexitime Dynamix Heavy Tray Dynamix Machine Kit

- 1 x Dynamix Machine 230 V
- 1 x Flexitime Dynamix Heavy Tray & Correct Flow Trial Kit
- 3 x (2 x 380 ml) Flexitime Dynamix Heavy Tray Refill

Art. no.: 6603 5996



Flexitime Dynamix Monophase Dynamix Machine Kit

- 1 x Dynamix Machine 230 V
- 1 x Flexitime Dynamix Monophase Trial Kit
- 3 x (2 x 380 ml) Flexitime Dynamix Monophase Refill

Art. no.: 6603 5997



Notes:

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