



Impression Taking the complete guide

For better dentistry

DENTSPLY



Impression Taking the complete guide



Much of the DENTSPLY impression materials range is branded under Aquasil Ultra Smart® Wetting Impression Material. Aquasil Ultra has been rated 5 stars by REALITY five years running, reassuring you of its excellent properties for when it comes to taking an accurate impression.

Aquasil Ultra is not your normal A-silicone material. It is a Smart Wetting Impression Material; that is a quadrafunctional addition reaction silicone (vinyl polysiloxane) elastometric with excellent hydrophilic properties, dimensional accuracy, high tear strength, and resistance to permanent deformation.

DENTSPLY prides itself in its product and clinical knowledge, and so has an active Product Specialist team across the UK and Ireland. If you want to find out more about the impression materials range, then these Product Specialists are happy to visit your practice, to meet you and your team, to discuss how best DENTSPLY can assist you.

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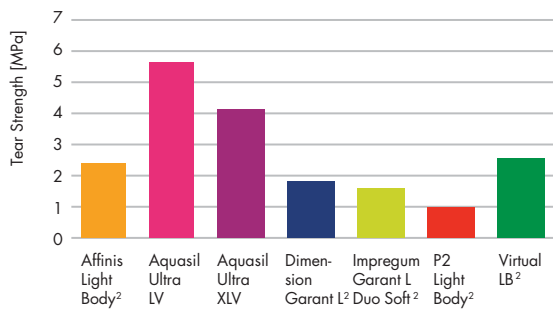
The Benefits of Aquasil Ultra

Ultra Strong

Aquasil Ultra provides exceptional dimensional stability and resistance to tearing on separation due to its quadra-functional chemistry, which is unique to Aquasil Ultra.

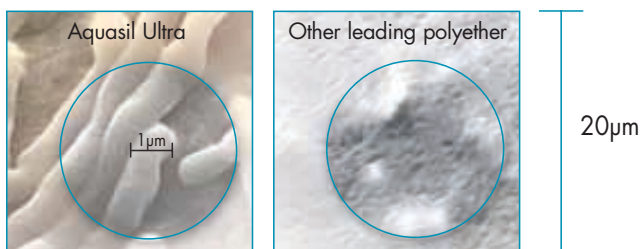
Aquasil Ultra is constructed from four stranded molecules, increasing its density and therefore making it at least 40% stronger than 23 other leading wash materials, which ensures intact margins, regardless of how thin the material is.

Tear Strength¹



Ultra Accurate

Aquasil Ultra captures the finest detail in a moist oral field, delivering highly accurate impressions. The SEM photos below of an in-vitro Aquasil Ultra impression demonstrate Aquasil Ultra's extraordinary ability to capture and retain even the finest detail. Notice how the material's viscosity allows it to flow into the dentinal tubules and remain intact during removal. The "tags" of Aquasil Ultra penetrate to a depth of 1 micron into the dentinal tubules (thinner than a human hair). The tear strength of Aquasil Ultra permits the "tags" to be removed from the dentinal tubules without failure. **No other material comes close!** The SEM photographs below were created by taking an impression of saturated acid etched bovine dentine.



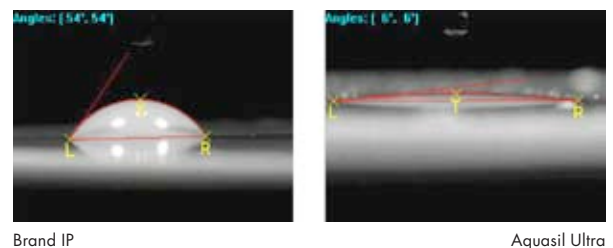
Ultra Wettable

Wettability is the ability of an impression material to develop surface contact with moist hard / soft tissue and aid penetration into the sulcus. The addition of a surfactant renders vinyl polysiloxane impression materials more hydrophilic. The measure of wettability is the contact angle on set material measured over time. Ideally, a material will have a contact angle as low as possible, as quickly as possible.

If there is any water, blood, air, or saliva in between the preparation and the impression material then this could lead to impressions of the water, blood, air or saliva commonly called 'voids' and 'bubbles'. Other materials on the market may increase the surfactant in their impression material in attempt to achieve Aquasil Ultra's contact angle but this will jeopardise their material's tear strength.

Due to Aquasil Ultra's quadrafunctional properties, more surfactants can be added to the material without compromising the strength, while improving the wettability. This offers high and early wettability, with Aquasil Ultra being 8 times more wettable than polyether. This allows it to adapt better to the tooth structure and sulcus, whilst minimising voids and bubbles that might occur due to trapped fluid.

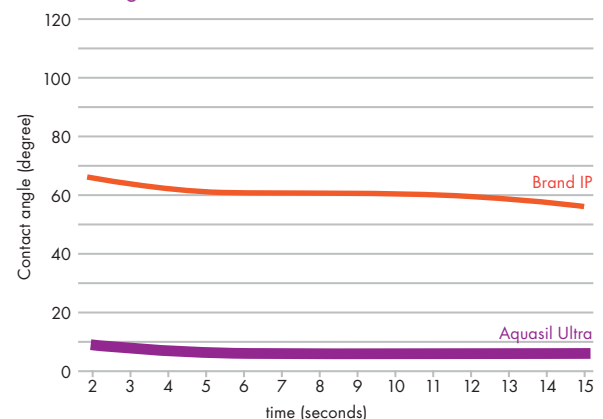
Contact angle at 15 seconds²



Brand IP

Aquasil Ultra

Contact angle³



References:

- 1 Prof. Dr. P. Feger (2004). Vergleichende werkstoffkundliche Untersuchung von verschiedenen Elastomeren bezüglich der Reißfestigkeit. Justus-Liebig Universität Giessen.
- 2 Data on file.
- 3 Data on file.
- 4 Data on file.

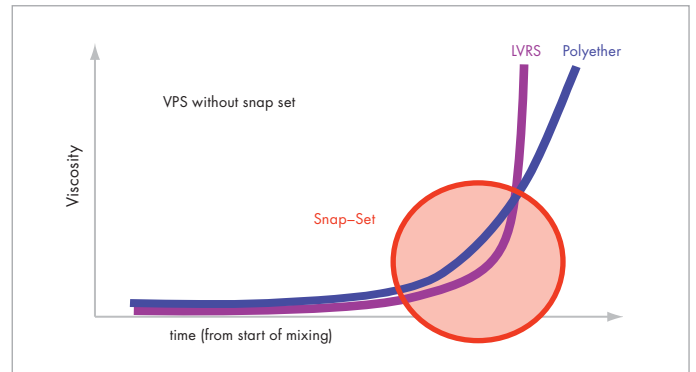
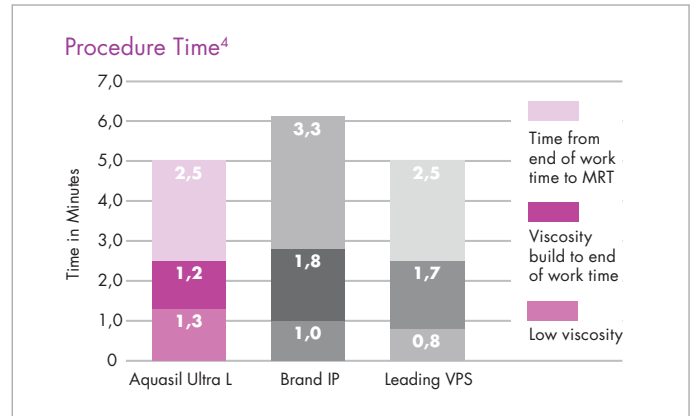


Ultra Patient Comfort

Aquasil Ultra has been flavoured with cool mint which is more aromatic than flavorful. There is more of a mint aftertaste with a pleasant mint scent to ensure minimal salivation, when taking an impression.

Ultra User-friendly

Offering more working time, a better 'snap set' curve and less 'waiting' time to remove the impression, Aquasil Ultra minimises pulls and drags, and can be separated from the mouth with minimal distortion or patient discomfort.



The right material for every technique

There are many impression techniques, however a few of the more popular are discussed below with recommendations of which Aquasil Ultra material to use.

	Wash Material				Tray Material					
Monophase Technique					Aquasil Ultra Monophase					
Double-Mix Technique						Aquasil Ultra Heavy				
Correction Technique							Aquasil Soft Putty		Aquasil Hard Putty	
Working Time (Min)	Regular Set/ Fast Set	2:15-2:45	1:15-1:45	2:15-2:45	1:15-1:45	2:15	2:15	1:15-1:45	1:30	1:15-1:45
Total Setting Time (Min)	Regular Set/ Fast Set	5:00	3:00	5:00	3:00	5:00	5:00	3:00	4:30	3:15

Hand Mix Putty Material

Aquasil Putty materials are specifically designed for use with Aquasil Ultra wash materials.

Hard Putty/Fast Set

Improved productivity in impression-taking

- Ideal for the putty-wash technique
- Higher Shore A Hardness for excellent cuttability and superior dimensional stability
- Shorter setting time for improved productivity
- Excellent detail reproduction, easy handling

Soft Putty/Regular Set

Stress-free working in impression-taking

- Suitable for the double-mix & putty-wash technique
- Optimum flexibility for easy removal from undercuts
- Longer working time for stress-free procedures
- Excellent detail reproduction, easy handling

Overview:

Application (minutes)	Soft Putty	Hard Putty
Mixing Time	0:30	0:30
Total Time for Application ¹	1:30	1:15
Minimum Time in Mouth (ISO)	3:00	2:00
Setting Time ²	4:30	3:15



Tray Materials

The **Monophase** material is of medium viscosity and available in regular set. The **Monophase** technique is a quick and easy technique to carry out and with Aquasil Ultra, the detail reproduction gives great detail.

Heavy Body materials are suitable for taking impressions as a tray material in combination with a syringeable Light Body material, either in the two-step two-phase technique (puttywash) or in the single-step two-phase (double mix) technique.

Cartridges available:

- Aquasil Ultra Monophase regular set 4 x 50ml cartridges
- Aquasil Ultra Heavy regular set 4 x 50ml cartridges
- Mixing tips x 48 (teal coloured)
- Intra oral tips x 100 (white coloured)

References:

- 1 Describes the time from the start of mix until the impression has to be seated and corresponds to the Total Work Time (ISO) for hand mixed materials.
- 2 Total time from start of mix to complete set.
- 3 Data on file.



Impressions Mixing Machine



The Duomix is offered in a DENTSPLY partnership with Renfert GmbH.

For 80 years, Renfert has provided German quality craftsmanship and small equipment to dental labs.



Enjoy a FASTER START

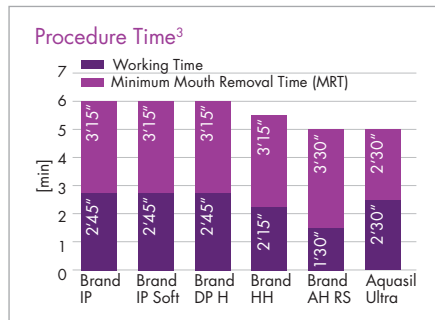
Resulting from the combination of Renfert engineering and Aquasil Ultra DECA 380 design, filling the impression tray starts measurably faster. The Duomix dynamic mixing of Aquasil Ultra provides superb consistency of the impression material that is a four time winner of Reality's 5-Star Choice Award.

Enjoy a FASTER FINISH

A faster start with an even faster finish. Aquasil Ultra provides virtually the same or longer "working time" as other materials, but with significantly shorter overall setting time (MRT). With some patients, a minute can be a very very long time. Aquasil Ultra doesn't tax your patience and saves time.

Indispensable Difference

Aquasil Ultra DECA 380 is easy to use: a 1-component cartridge system which eliminates "material activation" as well as set-up of fragile foil pack cylinders. With the combination of more impression material (380ml) and increased dispensing efficiency, Aquasil Ultra DECA 380 provides ~15% more impression material to use than other brands.



DECA 380 Hard Cartridges Machine Mix



More material...

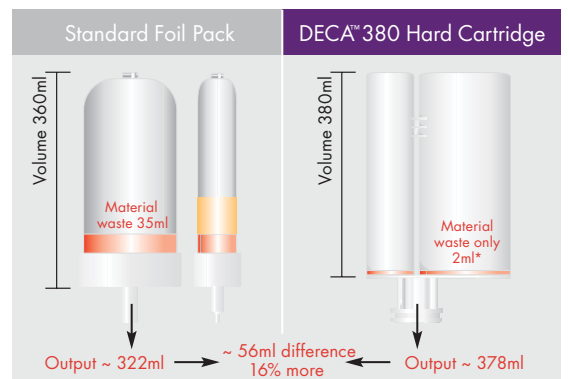
380ml of material, compared to 360ml in foil packs.

...with less material waste

Depleted DECA™ 380 Hard Cartridges waste less than 2ml of material as compared to 35ml wasted in depleted foil packs.

Additional advantages:

- Quick and easy to use
- Clean and safe to handle
- All the benefits of Aquasil Ultra

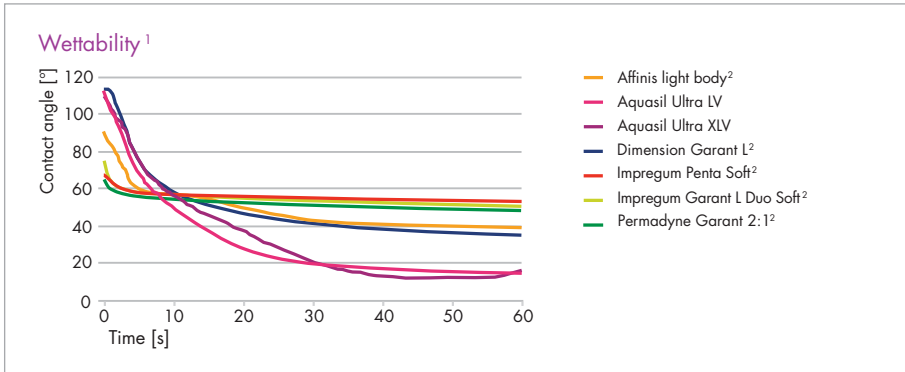


*0.6ml catalyst waste from bleeding DECA™ 380 Hard Cartridges. This is nearly 5 times less than foil packs.

Available in:

- Monophase regular set
- Heavy, regular and fast set

Wash Material



The wash material is where the true benefits of Aquasil Ultra shine. You need the wash material to be runny enough to represent and capture the smallest details, yet it needs to be viscous enough to stay where it's placed to prevent occlusal displacement.

Available - 50ml cartridges

- Light viscosity (LV) Regular and Fast Set
- Extra light viscosity (XLV) Regular and Fast Set

Single Unit Dose Wash Material

Aquasil Ultra
digit™

Smart Wetting[®] Impression Material
in digit Targeted Delivery System



Available in small cartridges

- Light viscosity (LV) Regular and Fast Set
- Extra light viscosity (XLV) Regular and Fast Set

Available in large cartridges

- Light viscosity (LV) Regular Set
- Extra light viscosity (XLV) Regular Set

Automatic mixing systems make it easy to prepare impression materials. Aquasil Ultra in the new digit Targeted Delivery System makes it even easier.

- The benefits of intra-oral syringe delivery
- The convenience and hygiene of a single unit dose
- The quality of Aquasil Ultra

All-in-one system that lets you mix, dispense and place Aquasil Ultra Wash Material with less effort and less waste.

Ultra Convenient

The digit delivery system makes it easier to dispense Aquasil Ultra Impression Material:

- No more hassles in back-filling intraoral syringes
- No more struggling using automix guns in the oral environment
- No more compromising quality for convenience

References:

- 1 Eichhorn M, Balkenhol M, Ferger P, Wöstmann B (2005). Wettability of newly introduced pvs-materials. Abstract for IADR Baltimore, #1898.
- 2 Affinis, Affinis light body, Affinis Heavy RS, Impregum Penta, Impregum Penta Soft, Impregum Garant L Duo Soft, Dimension Penta H, Dimension Garant L, Honigum Heavy, Permadyne Garant 2:1, P2 Light Body, Virtual LB are not registered trademarks of DENTSPLY DeTrey. Tear Strength data, Wettability data and Working Time data has been taken from the respective manufacturer's directions for use.

Bite Registration Material

Aquasil Bite

Vinyl Polysiloxane Bite Registration Material

Aquasil Bite is designed for accurate interocclusal and jaw relation records.

- offers a high final Shore A hardness of 95. Based on its A-silicone technology it is highly resistant to breaking and easy to trim.
- offers minimum resistance to closure during the 30 seconds working time and produces consistently accurate jaw relation records.
- reduces inaccuracies due to mandibular movement by rapidly gaining rigidity.
- is available in a convenient 50ml cartridge delivery system.
- High final hardness combined with high resistance to breaking.
- Adequate working time and short setting time.
- Excellent detail reproduction and low linear dimensional change.

Available:

- **Aquasil Bite Refill**
2 x 50ml Cartridges + 12 green mixing tips
- **Aquasil Bite Mixing Tips**
48 mixing tips
- **Aquasil Bite Conturation Tips**
48 conturation tips



Technical data

Working Time	30 seconds minimum from the start of mix at 22°C
Mouth Removal Time (MRT)	1 minute from placement onto occlusal surfaces
Recovery From Deformation	> 99%
Strain In Compression	< 1%
Detail Reproduction	2µ
Linear Dimensional Change	- 0.05%
Shore A Hardness	95

Alignate Impression Material

Blueprint® cremix



Blueprint cremix is a lead-free, easy mixing alginate. It is indicated for full and partial impressions for orthodontics, occlusion analyses and study models. The high wettability of Blueprint cremix allows a fast water-uptake and ensures an easy, creamy mix.

- Permanent deformation factor of 2.5%.
- Detail reproduction factor of 0.05mm or better for the highest precision.
- Does not give off any dust, therefore avoiding the mess and hazards associated with dust inhalation.
- Ample working time with a short setting time; snap-set.
- Fresh minty taste for patient comfort.



Technical data

Mixing time	30 seconds
Working time from start of mix	1.00-1.30 minute
Setting time from start of mix	1.45-2.15 minutes

Fix Tray Adhesive

A solvent-based adhesive which increases the adhesion between alginate impression material and the impression material tray surface.

Provisional Crown and Bridge Material

Integrity®

With Fluorescence

Provisional Crown & Bridge Material

Fast, strong temporaries with great aesthetics

- Polishes to a natural luster for superb results
- Minimal shrinkage and less adjustments save time
- Great consistency for easy handling and cleanup
- Bonds to itself for easy repair
- Less than 5°C temperature change in the mouth during setting; it will not damage the pulp and offers great patient comfort
- Available in 5 shades, including a bleach white
- Two delivery systems for your convenience – 76g cartridge and 15g mini-syringe

Physical Properties

	Integrity® A2	Brand A A2	Brand B A2	Brand C A2	Brand D A2
Transverse Strength (MPa)	83±6	73±2	76±3	75±3	68±3
Flexural Modulus (MPa)	2136±100	2056±88	2098±215	1823±97	1875±130
Compressive Strength (MPa)	291±21	284±27	220±36	304±24	298±15
Base/Catalyst Ratio	10:1	10:1	1:1	10:1	1:1
Onset Setting Time (Sec.)	70	80	60	65	60
Peak Temperature (°C)	34-35	34-35	41-42	34-36	33-34



Temporary Crown and Bridge Cement

Integrity® TempGrip™

Temporary Crown & Bridge Cement

Convenient, hygienic and easy handling

- Smooth seating: With a creamy feel and no-drip flow
- Easy removal: Cement stays in the crown not on the tooth
- Short set time saves time for you and your patient
- Automix syringes with balanced base/catalyst viscosity assure the right mix
- Low film thickness along with high compressive and flexural strength, ensuring an accurate fit
- Non-eugenol, therefore no interaction with resin based materials
- Available in 9g automix syringe

Physical Properties

	Integrity® TempGrip™	Brand X	Brand Y	Brand Z
Flow (mm)	27	33	32	25
Work Time	1'00"-1'30"	>1'30"	>1'30"	approx. 1'00"
Set Time	2'00"-3'00"	<7'00"	<7'00"	4'00"-5'00"
Film Thickness (microns)	11	13	8	24
Compressive Strength (MPa)	22	10	6	5
Flexural Strength (MPa)	9	1	3	4

Work and set times are as per manufacturer's directions for use of the respective brands. Work times are specified to be at room temperature and set times at mouth temperature.

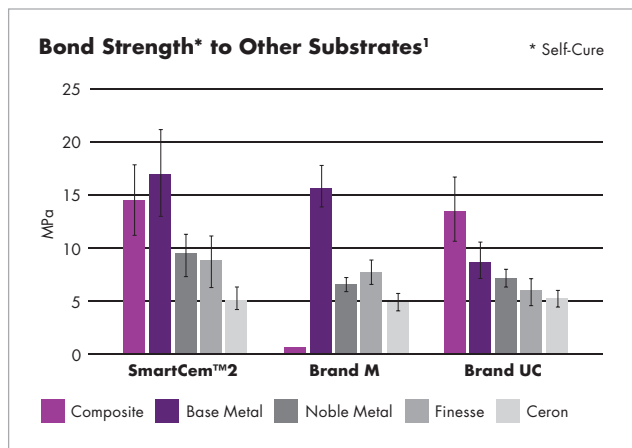


Permanent Cement

SMARTCEM²
SELF-ADHESIVE CEMENT

SmartCemTM2 is DENTSPLY's latest innovation in the cements market. It is a self-adhesive resin cement with the perfect combination of handling and strength.

- SmartCem2 is designed for most cementation applications to eliminate the need to stock multiple cements in your surgery
- Self-adherent; eliminates the need for separate bonding step, saving time
- The automix syringe delivery system mixes the correct quantities of material to ensure clinical success every time
- Available in five shades to ensure an excellent end result: Light, Medium, Dark, Translucent and Opaque
- Low film thickness of 19µm
- Low solubility & expansion (less than 0.4% linear expansion)
- Fluoride release



Indications:

SmartCemTM2 is intended for the cementation of indirect restorations including ceramic, composite and metal-based inlays, onlays, crowns, bridges and posts



References:
1 Data on file.

Accessories



Ash Polytrays

Available in three colour-coded sizes for accurate fit, Ash Polytrays are compatible with all alginate and elastomeric impression materials and their adhesives. They are designed for single use only and are ideal for the open tray technique when taking an impression for implants.

Ash Polytrays are supplied in boxes of 25 of one type, or in an assorted pack containing 4 trays of each, in three sizes, upper and lower. Lower trays are able to be sectioned and used for small partials with the handle and nylon adapter supplied.

Available:

- Lower and Upper Small (Green)
- Lower and Upper Medium (Blue)
- Lower and Upper Large (Yellow)

Silfix Tray Adhesive

Silfix is a polysiloxane-based adhesive which increases the adhesion between A-silicone impression materials and the impression tray surface.

Silfix is painted on the inner surface of the impression tray prior to application of the mixed impression material in order to increase adhesion to the tray of conventional, quadrafunctional and hydrophilic A-silicone impression materials



Other Treatment Solution Brochures from DENTSPLY

