
dentissimo®
PREMIUM ORAL CARE
2020
INNOVATIVE
DENTAL
FORMULA
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TOOTHPASTE SENSITIVE

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INNOVATIVE DENTAL FORMULA

- SWISS DIAMOND POWDER
- LOW RDA VALUE
- TOOTH SURFACE POLISHING

- STRONTIUM CHLORIDE
- GERANIUM MACULATUM EXTRACT
- HYDROXYAPATITE
- XYLITOL
- PAPAIN
- MICA

SPARKLING BRILLIANCE OF DIAMONDS

Pearly toothpaste contains **Swiss Diamond Powder** that smooth, clean and polish dentin gently and safely. **Diamond powder** and **Xylitol** help to inhibit plaque buildup, thus contribute to restoring the natural white color of tooth enamel. **Strontium Chloride** relieves tooth sensitivity and **Hydroxyapatite** contributes to tooth enamel remineralization. **Fruit enzyme papain** helps to gentle whitening, **Mica** brings glow, aesthetics, and healthy appearance of a smile. **Geranium Maculatum** and **Vitamin E** maintain teeth and gums healthy and assist in soothing action on irritated gums. Daily use means all-round dental care, fantastic smile with a sparkling diamond shine. Delicate flavor complements the composition and gives a pleasant feeling of fresh breath.

Strontium ions penetrate the dentinal tubules and block the nerve endings. The diameter of the particles of diamond powder coincides with the diameter of the dentinal tubules: ≤ 3 microns.

At tooth brushing, particles of diamond powder fill the dentinal tubules and block them. Thus, tooth sensitivity is significantly reduced.

- PREVENTS GINGIVITIS, STOMATITIS, PARODONTITIS
- REDUCES TOOTH SENSITIVITY
- RESTORES NATURAL WHITE COLOR OF TOOTH ENAMEL
- TOOTHPASTE IS DELICATE TO DENTINE
- POLISHES TOOTH ENAMEL
- PREVENTS PLAQUE AND TARTAR BUILDUP

FLUORIDE-FREE

INNOVATIVE DENTAL FORMULA

DEVELOPED BY DENTISTS

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ACTIVE INGREDIENTS OF THE TOOTHPASTE

DIAMOND POWDER
provides good cleaning action, smoothness and gloss to tooth enamel
is safe for sensitive dentin thanks to low abrasion
blocks dentin canaliculus, alleviating dental hypersensitivity

XYLITOL
helps to accelerate absorption of minerals into tooth enamel
aids in preventing formation of cavities
supresses the growth of bacteria and microorganisms

STRONTIUM CHLORIDE
Strontium Ions penetrate the tooth enamel
to dentin and block nerve endings
reduces dentin sensitivity

HYDROXYAPATITE
protects tooth enamel and timely compensates the loss
of minerals restoring microscopic damages
promotes active remineralization and strengthening of tooth enamel

GERANIUM MACULATUM
stimulates cell regeneration
ensures astringent, hemostatic effect
helps to prevent irritation of the gums

VITAMIN E
helps to maintain tonus of mucous and gingival tissues
aids in reducing inflammation caused by bacteria, minimizes the causes
of gingivitis before it develops into periodontal disease

DIAMOND POWDER SUPPLIER

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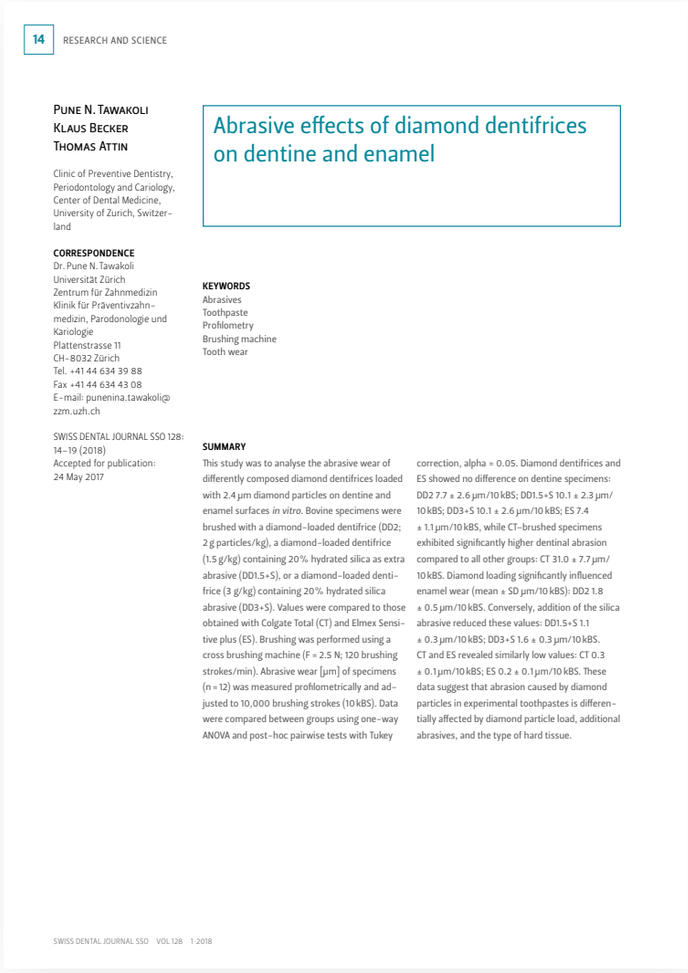
SWISS QUALITY

FACTORY IN SWITZERLAND: MICRODIAMANT AG

Diamond powder has a history as a polishing powder for many kinds of gemstones, including diamonds, since ancient times. Over time, its applications spread into many different industries for varying polishing purposes.
Microdiamant was founded in 1952 for the manufacturing of a range of diamond powder, starting from diamond 'dust' as raw material. Managed by the grandsons of its founder, Rudolf Spring, Microdiamant today is a technology leader in its field with manufacturing and sales companies in most industrial countries. It supplies diamond powder to manufacturers of watch stones and glasses, ceramics, surface finishing, wire dies, electronics, automotive, metallography and optics, etc.
One recently developed application is the use of diamond powder as a polishing and cleaning agent in toothpaste. Kurt Spring, the son of the company's founder, developed and patented a special selection of diamond powder for a revolutionary kind of toothpaste. Finest diamond particles are replacing the usually highly abrasive cleaning powder used in conventional toothpaste formulations. The replacement of these abrasives by specially selected diamond powder in diamond toothpaste offers multiple advantages in comparison to most kinds of toothpaste available today. microdiamant.com

List of countries where patented products with diamond powder are:
1. European Union (incl. Switzerland and Turkey)
   Patent application 09779237.8
2. Japan – Patent application /2011
3. United States of America – Patent application 13/126.398
4. Canada – Patent application 2,778,544
5. India – Patent application 2467/DELNP/2011

Validations of Zurich University "SWISS DENTAL JOURNAL"



14 RESEARCH AND SCIENCE

PUNE N. TAWAKOLI
KLAUS BECKER
THOMAS ATTIN

Clinic of Preventive Dentistry, Periodontology and Cariology, Center of Dental Medicine, University of Zurich, Switzerland

CORRESPONDENCE
Dr. Pune N. Tawakoli
Universität Zürich
Zentrum für Zahnmedizin
Klinik für Präventivzahnmedizin, Parodonologie und Kariologie
Plattenstrasse 11
CH-8032 Zürich
Tel. +41 44 634 39 88
Fax +41 44 634 43 08
E-mail: punenina.tawakoli@zzm.uzh.ch

SWISS DENTAL JOURNAL SSO 128: 14–19 (2018)
Accepted for publication: 24 May 2017

Abrasive effects of diamond dentifrices on dentine and enamel

KEYWORDS
Abrasives
Toothpaste
Profilometry
Brushing machine
Tooth wear

SUMMARY
This study was to analyse the abrasive wear of differently composed diamond dentifrices loaded with 2.4 µm diamond particles on dentine and enamel surfaces *in vitro*. Bovine specimens were brushed with a diamond-loaded dentifrice (DD2; 2 g particles/kg), a diamond-loaded dentifrice (1.5 g/kg) containing 20% hydrated silica as extra abrasive (DD1.5+S), or a diamond-loaded dentifrice (3 g/kg) containing 20% hydrated silica abrasive (DD3+S). Values were compared to those obtained with Colgate Total (CT) and Elmex Sensitive plus (ES). Brushing was performed using a cross brushing machine (F = 2.5 N; 120 brushing strokes/min). Abrasive wear [µm] of specimens (n = 12) was measured profilometrically and adjusted to 10,000 brushing strokes (10 kBS). Data were compared between groups using one-way ANOVA and post-hoc pairwise tests with Tukey correction, alpha = 0.05. Diamond dentifrices and ES showed no difference on dentine specimens: DD2 7.7 ± 2.6 µm/10 kBS; DD1.5+S 10.1 ± 2.3 µm/10 kBS; DD3+S 10.1 ± 2.6 µm/10 kBS; ES 7.4 ± 1.1 µm/10 kBS, while CT-brushed specimens exhibited significantly higher dentinal abrasion compared to all other groups: CT 31.0 ± 7.7 µm/10 kBS. Diamond loading significantly influenced enamel wear (mean ± SD µm/10 kBS): DD2 1.8 ± 0.5 µm/10 kBS. Conversely, addition of the silica abrasive reduced these values: DD1.5+S 1.1 ± 0.3 µm/10 kBS; DD3+S 1.6 ± 0.3 µm/10 kBS. CT and ES revealed similarly low values: CT 0.3 ± 0.1 µm/10 kBS; ES 0.2 ± 0.1 µm/10 kBS. These data suggest that abrasion caused by diamond particles in experimental toothpastes is differentially affected by diamond particle load, additional abrasives, and the type of hard tissue.

ULTIMATE NON-DAMAGING TOOTHPASTE WITH SWISS DIAMOND POWDER

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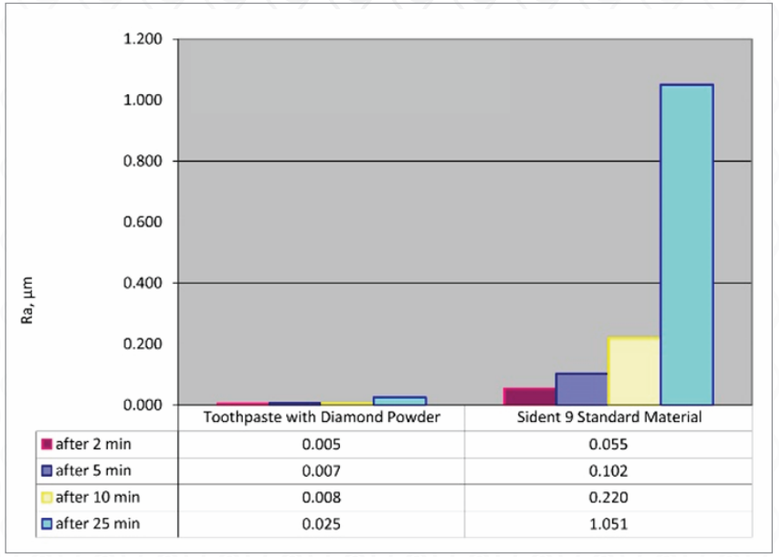
TOOTHPASTE SENSITIVE

The most important property of **DENTISSIMO® DIAMOND** Toothpaste is **healthiness** meanwhile most diamond toothpaste manufacturers sell their product as 'Whitening toothpaste'.
DENTISSIMO® DIAMOND Toothpaste is the **ultimate non-damaging** and **perfectly cleaning** remedy.

"First and immediately noticeable is a smooth feel of the teeth after brushing with diamond toothpaste. People with tooth hypersensitivity will also notice a remarkable reduction of pain induced by cold or hot beverages. Tooth surface roughness is polished away, it becomes very smooth after a short time. Smokers will appreciate that tartar does not build up after professional removing by a dentist. And, as you would expect, the cleaning action of diamond toothpastes is perfect."

Kurt Spring
Mechanical Engineer and Inventor
Microdiamant AG, Switzerland

SCHEME 1



	Toothpaste with Diamond Powder	Sident 9 Standard Material
after 2 min	0.005	0.055
after 5 min	0.007	0.102
after 10 min	0.008	0.220
after 25 min	0.025	1.051

Healthiness effects of **DENTISSIMO® DIAMOND** Toothpaste could be ranged as below:

- PROVIDES PROLONGED SMOOTHNESS IN DENTIN AND ENAMEL (SHEME 1)
- DELIVERS ULTIMATE FINE POLISHING OF ALL DENTAL SURFACES
- ADDS GLOSS TO TOOTH SURFACE
- ENSURES ULTIMATE NON-DAMAGING EFFECT DUE TO LOW ABRASION

Validations are described in article "The Future of Diamond Toothpaste" page 4, 5

ULTIMATE NON-DAMAGING TOOTHPASTE WITH SWISS DIAMOND POWDER

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TOOTHPASTE SENSITIVE

Figure 2 shows the effect of toothpaste with diamond powder on tooth enamel and dentin. The abrasion rates of tooth enamel are within acceptable limits, but slightly higher than conventional toothpastes have. At the same time, toothpaste with diamond powder treats dentin as carefully as possible and, very importantly, does not damage the exposed dentin tissue during brushing, while competitors' toothpastes can cause discomfort.

Healthiness effects of **DENTISSIMO® DIAMOND** Toothpaste could be ranged as below:

- REDUCES SENSITIVITY (SHEME 2)
- PREVENTS TARTAR AND PLAQUE BUILDUP

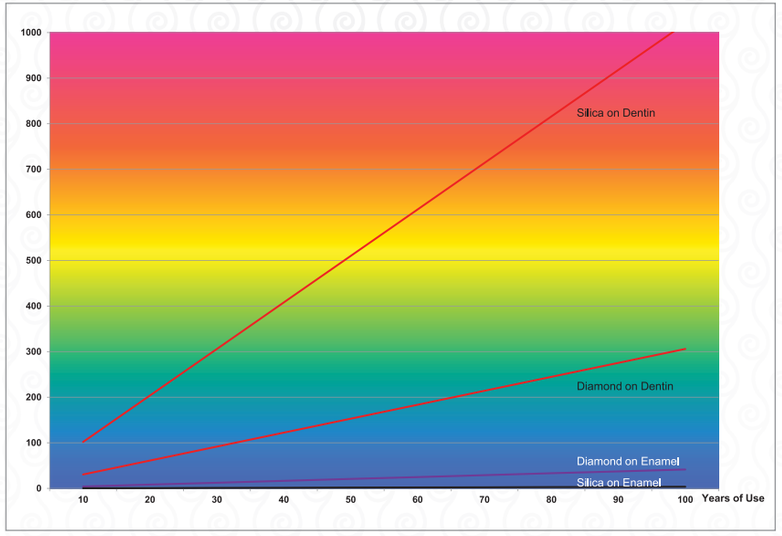
Validations of Zurich University "SWISS DENTAL JOURNAL"

- GOOD CLEANING ACTION

Validations are described in article "The Future of Diamond Toothpaste" page 5

In older patients, gum disease and tooth root exposure are often observed – a phenomenon called gum recession. In such cases, dentin care should be cautious and least intrusive, exactly as Dentissimo Diamond toothpaste For Sensitive Teeth with diamond powder o ers. Due to its low abrasion value and gentle effect on dentin, this toothpaste is safe for daily use and is suitable for adults and elderly people.

SCHEME 2



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DENTIN SENSITIVITY

CAUSES AND TREATMENTS

Dental sensitivity is one of the most relevant issues in modern dentistry and it is a disease that can be detected from a young age. About 70% of adults complain to dentists about dentin and enamel sensitivity. The study of statistical data on changes in periodontal tissues showed that gum recession was detected in approximately 5-21.9% cases at the age of 7-8 years. Further, the prevalence of gum recession is increasing: from 11.6% at the age of 15 to 100% in people over 64 years.

Tooth sensitivity can be caused by dental problems, for example, caries, periodontitis, fissures in the enamel, consequences of whitening or other dental procedures or caused by general health status (pregnancy, neurological condition, heredity, etc.).

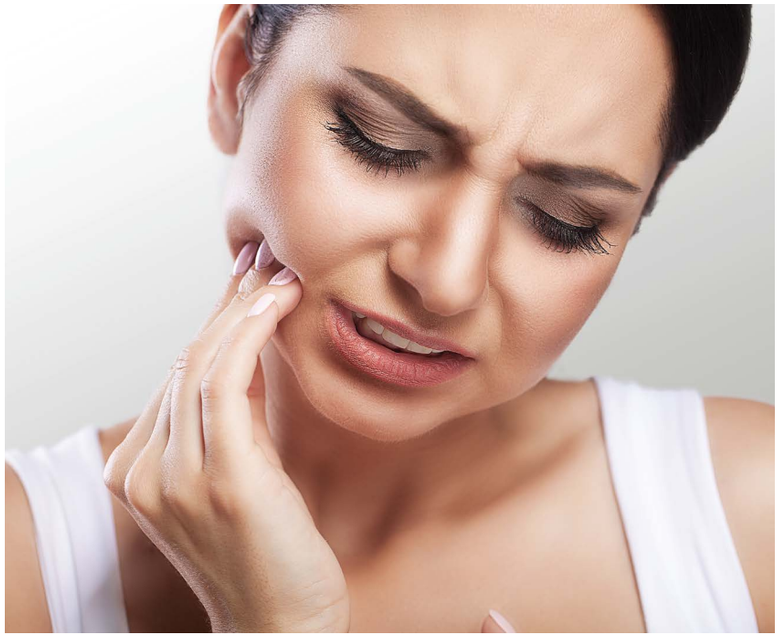
Mandatory toothpaste qualities to reduce sensitivity:

1. **Tooth enamel remineralization**. Particles of **Hydroxyapatite** (they are in structure very similar to dental tissues) help to reduce the sensitivity of tooth enamel due to the sealing of the smallest defects in enamel and open dentinal tubules.

2. **Plaque buildup prevention**. **Xylitol** helps to protect hard dental tissue by effectively removing bacterial plaque on the surface of tooth enamel.

3. **Desensitizing Agent – Strontium Chloride.** Strontium ions penetrate dentin through the dentinal tubules and block nerve endings, thereby preventing unpleasant sensations.

4. The **low abrasiveness** of toothpaste. It is very important to carefully clean the surface of tooth enamel without damaging the dentin in the process.



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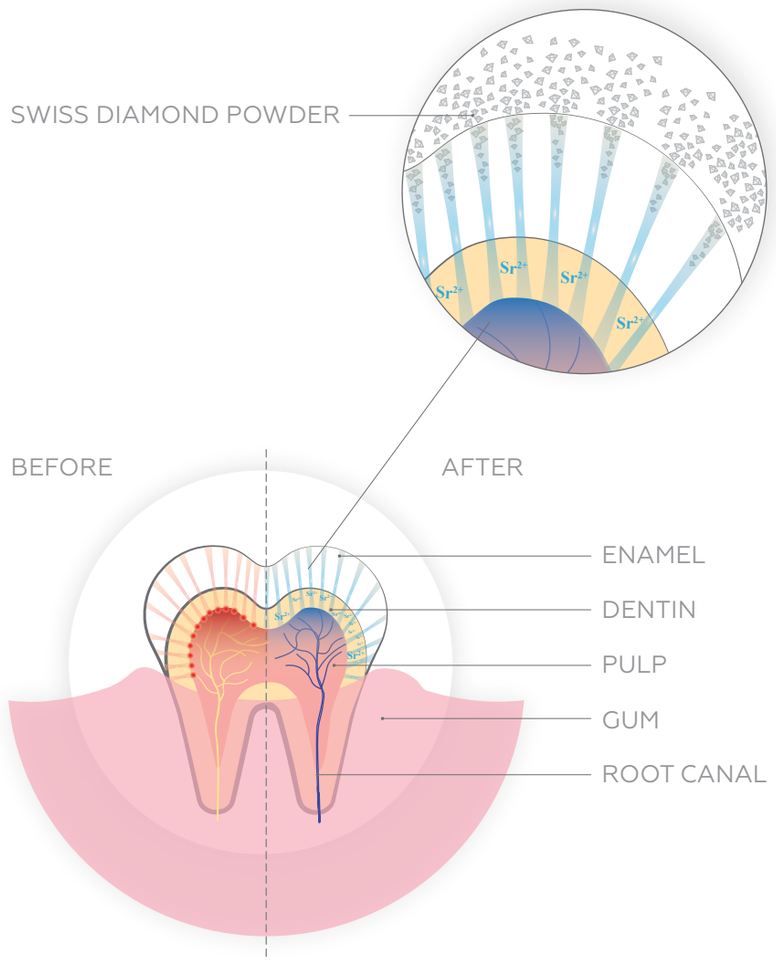
MECHANISM FOR REDUCING TOOTH SENSITIVITY

COMPREHENSIVE ACTION OF DIAMOND TOOTHPASTE

Dentin tubules are microscopic channels that extend from the surface of the tooth enamel to the inside of the tooth — the pulp. They are so called dentin tubules because they pass through the dentin. Dentin is the main structural component and the middle layer of the tooth supporting the enamel on the inside. It is less mineralized than enamel and forms the main part of the tooth.
These small hollow channels in the dentin transmit unpleasant sensations from the external part of the tooth to the internal part and people experience sensitivity.

The complex effect of toothpaste:
Strontium ions penetrate the dentinal tubules and block the nerve endings.
The diameter of the particles of diamond powder coincides with the diameter of the dentinal tubules: ≤ 3 microns.
At each time of tooth brushing, particles of diamond powder fill the dentinal tubules and seal them.
Thus, tooth sensitivity reduces significantly and permanently.

In case of sensitivity dentists recommend to avoid the toothpaste with fluorides, pyrophosphates, parabens, SLS, peroxides or aggressive abrasives.



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contact@medpack-swiss.com
www.dentissimo.dental

Medpack Swiss Group AG
Seepark 6, CH–9422 Staad SG, Switzerland
tel.: +41 71 855 07 55
info@medpack-swiss.com
medpack-group.com