Hoffmann´s

Welcome

To share knowledge, to develop products and to drive processes that is the fiery passion that defines Hoffmann's and has done so for the past three generations. This fire was lit with the invention of phosphate cement by chemist and company founder, Dr. Otto Hoffmann. His passion was to develop effective and well-tolerated products for restorative dentistry, that have now been distributed around the world since 1892. Two generations later, this passion still burns. Hoffmann's products are made with great precision and attention to detail. We continue to use cutting-edge technology, yet can proudly say that our production processes are CO2 neutral.

Natural, effective, sustainable. That is the quality claim that begins with the use of natural and high-quality raw materials, manifested by intense quality controls and successfully developed further through our own research. To meet not only legal, but also multicultural needs, Hoffmann's products are Kosher and Halal certified.

Dental materials inspired by nature

The Pioneer of the Dental Industry

Chemist, inventor and company founder

Hoffmann Dental Manufaktur was founded by the inventor of phosphate cement Dr. Otto Hoffmann.

Otto Hoffmann was born in 1854 in a village in the foothills of the Harz mountains. He grew up in modest circumstances, studied chemistry in Berlin and Leipzig and obtained his PhD in 1878 in Würzburg. As an independent chemist, Otto Hoffmann developed a series of products in his Berlin laboratory, some of which he had patented. In 1892 he succeeded with his most enduring invention: dental cement.

In his time, Otto Hoffmann liked to travel. He went to the World Exhibition in Paris in 1900, and in 1903 undertook a field expedition to Spitzbergen. But not only vast distances, also great heights fascinated him. As a member of the Berlin "Verein für Luftschiffahrt" (association of airship travel), he took part in several balloon ascents. His mountain excursions led him to the highest peaks of the Alps. Otto Hoffmann's love of art also had a musical side to it: the piano. He played three hours a day in a music room which was especially designed for that purpose.

However, Otto Hoffmann's real elixir remained his work as a chemist, which he continued until he was 83 years old. Hoffmann's dental innovation quickly found many grateful users all over the globe and achieved a monopolistic position before the outbreak of the First World War.

The portrait of the inventor Dr. Otto Hoffmann can today still be found in many dental practices around the world. With more than 40,000 applications a day, Hoffmann´s cements are among the world's most commonly used dental materials for the cementation of crowns and bridges.

The History of Zinc Phosphate Cement

An industrial revolution in dentistry

The revolutionising events of the industrial revolution, which pushed on rapid developments in medicine and dentistry, had the consequence that more and more professional solutions were required in dental provision. A pretty-much frenetic search began for suitable filling materials, starting in the mid 50s of the 19th century. But some formulations were seen rather critically by people at the time. The following was noted about a mass called "dental kit", consisting of 13 parts of finely ground quicklime and 12 parts of phosphoric acid: "The mixture can only be used within a time frame of 1-2 minutes and cannot be stirred due to its slightly disintegrative properties."

The first useful material was the "Cäment" recommended by the royal Dresden dentist Augustin Rostaing from 1858 onwards and manufactured by his son, the chemist Charles Sylvester Rostaing – also known as Rostaing Dentinogenes or Rostaing Cement Plombage. The formula for these dentinogenes was kept absolutely secret by its two inventors. One could receive 12 ounces of the substance after depositing 20 Pounds Sterling or 155 Taler – a horrendous amount in those days – with a Dresden banker.

Contemporaries complained about the price and even more about the poor availability of the preparation. When father and son died shortly after another, they took the production secrets with them to their grave. While the basic chemical substances were actually known (zinc oxide and phosphoric acid), the production in a furnace was an impossible task for individual dentists at the time.

Based on the basic ideas of the dentinagens conceived by Rostaing, the chemist Dr. Otto Hoffmann was the first person to develop high-quality dental cement after countless trials, and to produce it reliably and economically on an industrial scale. After leading dentists in America, Germany and Austria had deemed the cement to be good, the first 100 portions of the zinc phosphate cement developed by Otto Hoffmann were officially listed for sale on February 12, 1892.

QUALITY SPANNING THREE GENERATIONS

Award-winning safety

Already in the 19th century the inventor of phosphate cement, Dr. Otto Hoffmann, formulated the requirements that are still valid today according to which high-quality dental products should be produced on an industrial scale in order to make them available to as many people as possible for professional dental provision.

His striving for quality was already awarded the silver medal at the FDI's fifth International Dental Congress in Berlin in 1909. The second generation consistently continued to develop these high quality standards. Dietbert Hoffmann was an active member in national and international standardization organizations for the generation and enhancement of material standards from 1967 onwards.

Today, all activities are pooled in the ISO/TC 106 Dentistry, in which Hoffmann Dental Manufaktur is involved. A quality management system, which represents the entire company, was introduced in 1995 by today's Managing Director Tobias Hoffmann. Close monitoring of the entire value creation chain is ensured through strict control of raw materials and end products, as well as regular in-process controls. All testing is carried out in the company's in-house laboratory.

In order to make sure that if it says Hoffmann's on it, there is also Hoffmann's in it, Hoffmann Dental Manufaktur was the first branded company in the dental industry to introduce product packaging with tamper-proof features. The combination of a traditional look and feel and modern standards was honoured with an award in the scope of the 9th International Corporate Design Award in 2005.

The employees' wealth of experience and the quality awareness of every individual are the motor for the continuous further development of the high standards of quality of this family enterprise.

Hoffmann's products are CE compliant, FDA approved and, since 2014, also certified as being Halal and Kosher. However, for Hoffmann Dental Manufaktur the adherence to statutory regulations and material standards is merely one of the minimum requirements.

The Worker in Focus

"I believe that the 21st century will again be devoted to man and his real needs. What companies are planning to invest today and tomorrow will show results after tomorrow and define the framework of our social life."
Daniel Goeudevert

These are the qualified people that are entrusted with the processes of manufacturing and distribution, and are committed to them every day. Our multicultural team of employees allows us to accept different perspectives and understand the different needs related to dental products. As an entrepreneurial family, we anticipate things in the long term. This includes flexible working hours for parents and grandparents as well as investment in education and training.

Modern Times

"Tradition is not to preserve the ashes, but to pass on the flame."
Gustav Mahler

Hoffmann's products are made with precise craftsmanship and great attention to detail. More than 120 years ago the master and his assistant toiled for several days in order to ensure the successful firing of their cement. The furnace was fed with wood and coal and heated to a maximum temperature of 1400 °C.Ever since, the mixture of raw materials has always been manually inserted in the cooking capsules. Today, however, modern technologies are used and combustion takes place in a high-performance computer-controlled furnace. We are proud to say that our production processes are also CO_2-neutral.

Ricinus communis and olea europaea

"Let food be thy medicine
and medicine be thy food."

Hippocrates

Olive Oil

The oldest remedy in the world

Olive oil is obtained from the fruit of Olea Europaea and consists mostly of monounsaturated oleic acid, and to a lesser extent of linoleic acid and palmitic acid.

Mainly two polyphenol antioxidants are responsible for the health-promoting benefits: oleuropein and oleocanthal. Thanks to oleuropein the olive tree is able to make free radicals harmless and counteract the pathogenesis of diseases. Oleuropein stimulates the immune system and slows the aging process of the olive tree. Oleocanthal is an analgesic aldehyde. This blocks the production of neurotransmitters, which are responsible for inflammatory reactions.

The polyphenols in the olive oil, like other antioxidants, have an anti-inflammatory and health-promoting effect.

Additionally, vitamin E and squalane stimulate the cell renewal and prevent irritated skin with an impaired barrier function. Olive oil has a particularlya positive effect on the gums and oral health. It helps to prevent bleeding of the gums and eliminates bacteria nested in the gingival sulcus.

Castor Oil

Healthy miracle

Ricinus oil is obtained from the seeds of ricinus communis, also known as the miracle tree. The medicinal plant, which is at home throughout the Mediterranean and wide-spread as an ornamental shrub, is already mentioned in the Old Testament: "God let the ricinus plant grow over Jonah for shady protection."

The seeds contain an extremely toxic ricin which is completely removed due to the pressing. Castor oil consists of 87% glycerides and ricinoleic acid. In addition, the oil has low levels of linoleic, palmitic and stearic acid. Castor oil is especially known for its high content of tocopherol (vitamin E). In contrast to the olive oil (α-tocopherol), however castor oil is dominated by γ- and δ-tocopherols. Both act as free radical scavengers and serve significantly as an antioxidant. The use of castor oil to combat pathogenic anaerobic bacteria in the oral flora has been proven. Hoffmann's PeriO3 Oil provides ozonated castor and olive oil for the treatment of microbial diseases of the gums. The ozone-enriched oils have an antibacterial and anti-inflammatory effect. The restoration of a healthy oral flora is promoted.

Ozone in Dentistry

Dr. Fadi Sabbah (Beyrouth, Liban)

Ozone in Nature

Besides its protective action from excess UV, ozone is one of the major sanitation agents found in Nature. Ozone, generated by thunderstorm lightning electrical discharge and water falls, reacts with air pollutants and is the reason of the air freshness after thunderstorms and around water falls. The powerful disinfection and sanitation properties of ozone are used in drinking and waste water treatment, in food and beverages as well as in other industrial applications.

Ozone in Healthcare

Soon after its discovery circa 1840 by the German scientist Schönbein, ozone was used in some medical applications mainly in Germany, and Dr Fish, a Swiss dentist, used ozone in his dental practice since the nineteen thirties. Today, thousands of healthcare professionals routinely use ozone in medicine, dentistry and veterinary all around the world.

Major biological systemic effects of ozone administration are an increase in metabolism activity, improved tissue oxygenation, endogenous antioxidants stimulation, immunity modulation and anti-inflammatory, which contribute in the management and treatment of a variety of medical diseases (ISCO3 Madrid Declaration 2nd Ed, 2015, ISBN: 978-84-606-8312-4)

Topical applications of ozone are mainly used in the management and treatment of infected wounds, burns, ulcers and other soft tissues lesions due to its high antimicrobial potential, and in controlled doses in tissue healing and regeneration.

Ozone in gas form or dissolved in water are commonly used in almost all dental procedures and must be generated on site in the dental office due to the short half-life of ozone. Tooth caries and periodontal disease, as well as its consequences, are considered to be among the most common health problems found in the general population, along with their high financial cost burden on social security plans and patients.

Among other specific factors, both diseases are caused by a pathologic infectious biofilm where ozone in all its forms (gas, ozonated water and oils) has a high potential in microbes killing, acids, toxins and inflammatory compounds oxidation, making it an efficient adjunct in restoring a healthy environment and aids in the natural healing process.

Early diagnosis/intervention with minimally invasive technologies and ozone, as well as the use of bio-active materials, play a major role in tooth caries prevention and treatment, allowing affected structures to remineralize and minimizing root canal treatment in very deep cavities.

In periodontal disease management and treatment, ozone not only helps in microbial and toxins elimination, but also may contribute to modulate the host excessive local immunity response to the chronic infectious inflammatory periodontal pathological biofilm, which is becoming a major concern in some serious oral-systemic links diseases.

Ozonated Oils

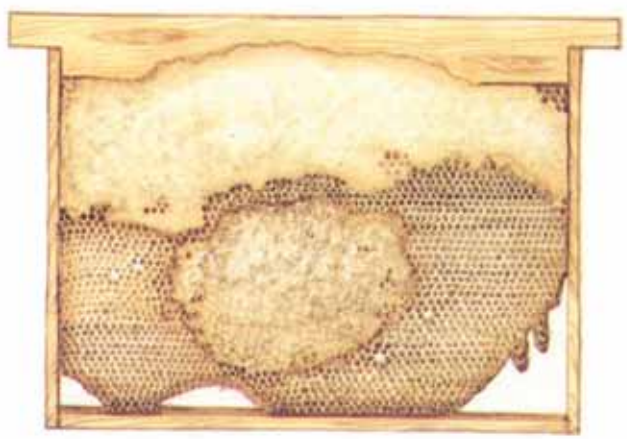
Ozone gas is used by experienced dental professionals in the dental office and it is not recommended for home use by patients. The use of ozonated water and oils can be used at home by patients, following the proper instructions of the treating dentist who takes into consideration the total applied ozone dosage, both in office and at home, customized to the clinical situation and evolution.

The low cost of ozonated vegetable oils, their long shelf life (when refrigerated) and efficacy, make them very suitable for professional and home use. The peroxide index of ozonated oils corresponds to the amount of applied ozone and nature of the vegetable oils. The higher the peroxide index, the more potent is the produced ozonated oil. Depending on the clinical situation, high, medium or low peroxide index ozonated oils are selected and used in various medical and dental applications. As a general rule, high peroxide index oils are used in heavily infected cases, and then gradually reduced during the healing phase. The frequency and duration of oils application are also customized to the clinical case.

Ozonated oils dental applications: Gingivitis, periodontitis, post-surgery, implants mucositis, ulcers, dentures stomatitis, herpetic and aphthae lesions, alveolitis.

Hoffmann's Perio3 Oil is an ozonized olive and castor oil with a high peroxide index for professional use. PeriO3 Oil is a medical device class IIa.

Dr. Fadi Sabbah (Beirut, Libanon), Melber of The International Ozone Association and of the World Congress of Minimally Invasive Dentistry, Associate of Texas Institute for Advanced Dental Studies (TIADS)



Propolis

Propolis

Antibiotic of bees

Propolis is used by bees to protect the bee colony from disease. They use it to seal openings and to isolate foreign matter that has been introduced into the hive. The name of the honey-yellow, sweet-smelling bee resin comes from the Greek words for «before» and «city», thus describing the protective function that propolis has for the beehive.

For the most part propolis consists of pollen balm and natural resin, which young worker bees gather from buds and sores of birch, beech, alder and poplar trees. In the afternoon, when the sun has softened the resin, the young bees take on the resin with their mandibles and transport it back to the hive sticking to their legs. The collected propolis can be harvested if the beekeeper places a foreign body in the hive. In order to protect their habitat, the bees surround the foreign body with propolis. The foreign body and the propolis sticking to it can then be removed.

More than 300 different ingredients can be attributed to propolis, including iron, copper, selenium, essential oils, vitamin A and vitamin E. The antioxidating effect of propolis is primarily explained by the high number of esters and polyphenols, especially flavonoids. The latter are largely responsible for the immune-enhancing and anti-inflammatory properties of propolis and have been used in medicine for a long time.

Propolis is used in Hoffmann's Pulpine, Hoffmann's Pulpine NE and Hoffmann's Pulpine Mineral for caries profunda therapy and for direct pulp capping.

Miracle Cure Propolis

Application possibilities in naturopathic dental medicine

Prof. Werner Becker, Köln, Germany

Most animal species were eliminated by epidemics against which there was no "medicine". Not so with bees. Thanks to propolis they have one of the most effective weapons against bacteria and viruses. It is already used by them at the entrance to their hive, where they cover the entrance hole and the landing area in front of it with propolis. Thus all bees that wish to enter the hive have to cross this "decontamination mat" where all hazardous substances are neutralized and rendered harmless.

This mechanism explains why bees have survived for such a long time throughout evolution. It is particularly interesting when considering resistances to antibiotics: new developments are constantly required, as previous developments have become ineffective due to resistances. But there is no resistance against propolis.

An example explains the efficacy of propolis very well. A mouse may wander into a bee hive from time to time. As the bees cannot transport it out of the bee hive like other small organisms, it is immediately killed with bee poison and then covered with a propolis layer. The substance can preserve such a mouse for years. No rot and no decomposition take place, even at temperatures of around 37 degrees Celsius in the hive. On the contrary: no protein decay product, such as thioether and mercaptan, can be found in the meat.

Propolis' mode of action

The effect of propolis is increasingly focused on the activation of T-lymphocytes and B-lymphocytes. Furthermore, the protective effect refers to the mucous membranes, a primary portal of entry for pathogens, and their propolis ingredients such as flavonoids and vitamins. These cover the mucous membranes with an antibacterial and antiviral protection layer, the effect of which can last for several hours. Propolis thus acts against bacteria, viruses and fungi.

Propolis has an anaesthetic effect. The flavonoids contained in the propolis prevent the generation of prostaglandin, the substance responsible for the development of pain. Contrary to all other pain relievers, the flavonoids, which are also referred to as natural aspirin, do not irritate the stomach, as they are natural substances that occur in the body anyway. For example, propolis extracts are used in Russia as a local anaesthetic in dentistry. Their anaesthetic effect is about five times higher and even exceeds that of morphine.

Another important advantage of flavonoids is that they are able to bind heavy metals and thus enable their expulsion from the body via the kidneys. They thus prevent the body's biochemical processes of protein-heavy metal formation and thus the storage of such toxins in depots, such as fatty tissue, gland tissue and nerve tissue.

DENTAL, ORAL AND MAXILLARY APPLICATION

Inflammation of the mouth and throat

In the case of mouth or throat infections one can apply a mixture of finely crushed propolis and honey in a ratio of 1:1, allowing it to dissolve in the mouth. Another way is to prepare finely crushed propolis like a tea and to drink the brew in sips.

Caries profunda

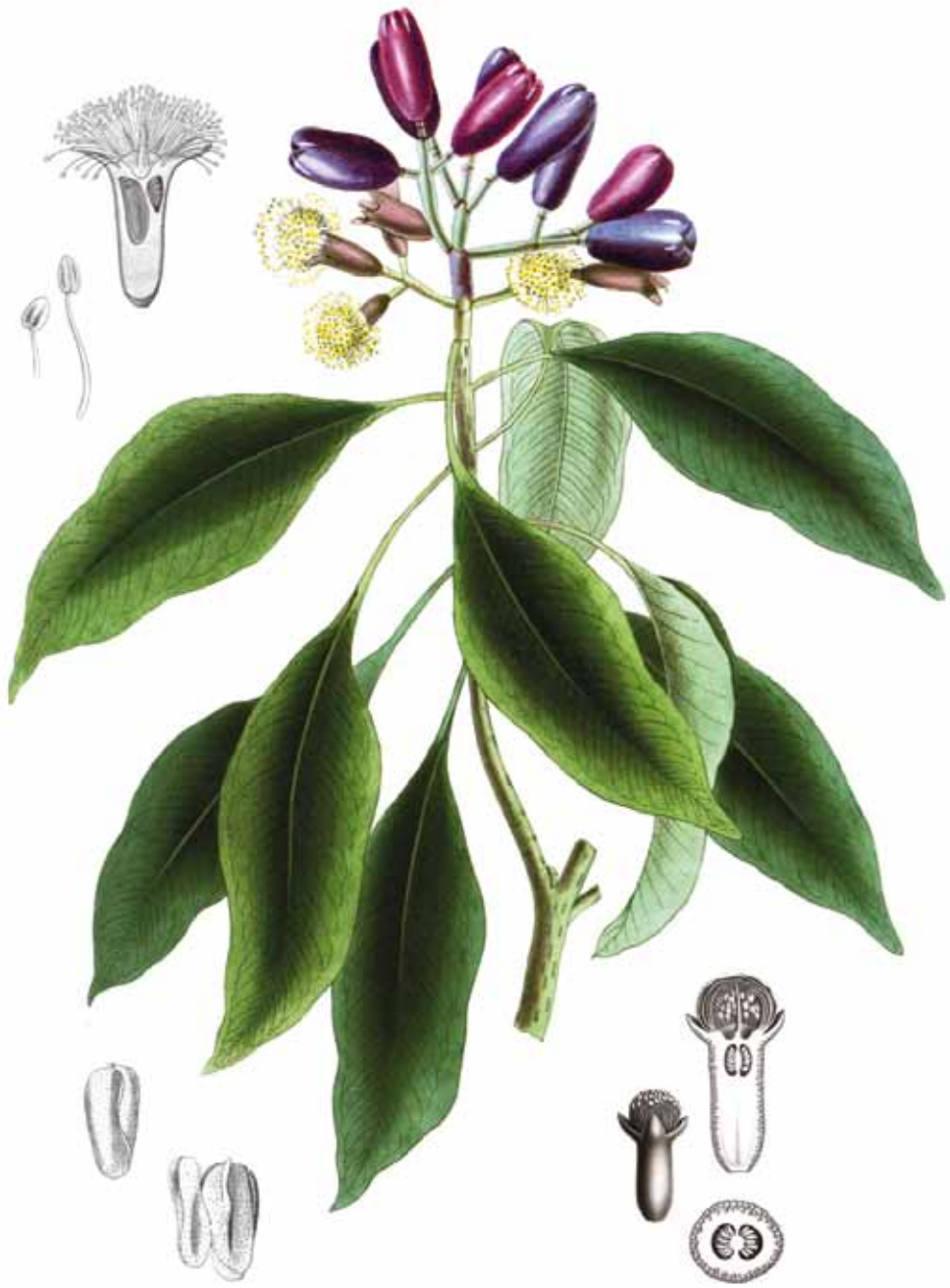
When it comes to the positive success rate, the use of propolis preparations for caries profunda and open pulp cannot be beaten. The direct application of a propolis-eugenol-zinc-oxide preparation into an extensively damaged tooth helps to maintain its vitality. The medical preparation, which was developed in 1999 by Dr. André Kaczmarek, is called Hoffmann's PULPINE.

Open dental pulp

For ten years now all of my patients with caries profunda and open dental pulp have been treated very successfully with Hoffmann's PULPINE (formerly Proxipulpine). The pulp remains vital and the teeth show absolutely no negative reactions. Applied as a thin layer with a brush to prepared tooth stumps, Hoffmann's PULPINE also prevents grinding traumas. The fear of ground dental pulp is thus a thing of the past thanks to this medicinal compound.

Some pulps, which were endodontically treated by my assistant (I myself do not do root fillings), have become sterile and remained inconspicuous over the observation period (of about 10 months) despite the fact that they were previously bacterially contaminated. No physical reactions could be identified or measured. A special form of application of Hoffmann's PULPINE called PROXI APEX is available for root fillings.

Prof. Prof. H. C. Dr. med. Dent. Werner Becker is a naturopathically active dental and medical practitioner in private practice, founder and president of the Federation of Naturopathic Dentists in Germany (BNZ) and president of the Society for Holistic Orthodontics (GKO)



Syzygium aromaticum

EUGENOL

Herba Benedicta

Hildegard von Bingen

The pharmacologically active constituent of natural clove oil is called eugenol, which is extracted from cloves. Eugenol also occurs in other plants, such as allspice, cinnamon, laurel or the real avens root (geum urbanum) found in Northern Europe, however, not in similarly high concentrations.

The clove tree (syzygium aromaticum) is a type of plant belonging to the myrtle family (myrtaceae), which originally comes from South-East Asia. The oldest archaeological find of cloves in ceramic vessels in Syria dates back to 1700 BC. Caravans brought the essential oil to Europe via the Incense Road. In ancient times and the Middle Ages, clove oil was considered one of the treasures that were reserved for patricians. The analgesic, antiseptic properties of clove oil have been known for centuries and are, for example, described in the writings of Galen of Pergamum (131 – 201 AD) and Hildegard von Bingen (1098 – 1179 AD). The analgesic effects against toothache, in particular, are also mentioned in the writings. Hildegard von Bingen even refers to the plant as a “herba benedicta”, a blessed herb.

Clove oil is therefore likely to be the oldest remedy for toothache, which is still today widespread in medicine chests and dental practices around the world. It is particularly often used in emergencies for temporary filling. It acts as a mild local anaesthetic, with analgesic, soothing and antibacterial properties.

Hoffmann’s uses pure essential clove oil from Indonesia in its formulation for PROXI APEX, root canal filling material as well as for Hoffmann´s Pulpine – a biological capping material for the protection of pulp.

Agathis Australis

Copal

Young amber to protect the pulp

The name "copal" has become something of a collective term for fossil and recent resins of varying characteristics and botanical origins. Copalli is a loan word from Nahuatl, the ancient Aztec language, with which the Native Americans described smoked resin, which was sacrificed to Gods on their altars. Optically, copal is quite similar to amber and can sometimes contain trapped insects or other small creatures, which then makes it a popular collector's item. Copal can be almost colourless and transparent or take on a lush yellow to red-brown tone.

Fossil copals can be found in almost all parts of the world, in deposits a few meters under the ground. They can be thousands of years old, but are still rather young in comparison to amber, which can be several million years old. These natural resins originate from the damaged bark of conifers or leguminous (pulse) plants. Copals are usually described according to their origin, such as Zanzibar Copal or Manila Copal, and only sometimes according to the plant from which they originate, such as Kauri Copal, named after the New Zealand kauri fruit (agathis australis). East African copals are said to be the ones with the highest quality, as their characteristics come closest to those of amber. Fossil resins, also known as mature copals, are hard, hardly soluble and difficult to melt. Recently extracted copals, such as tree copal, which is directly harvested from trees as fresh resin, are much more important for industrial processing.

At the beginning of the 20th Century, thousands of tons of copal were transported to Europe for the production of varnishes, where the hardest copals were used to make the most resistant varnishes. Today, however, mainly synthetic materials are used in the varnish industry. Copals, like natural resins in general, are today only used in cases where old techniques are implemented (especially in painting) or where environmentally friendly materials are needed (such as linoleum manufacturing).

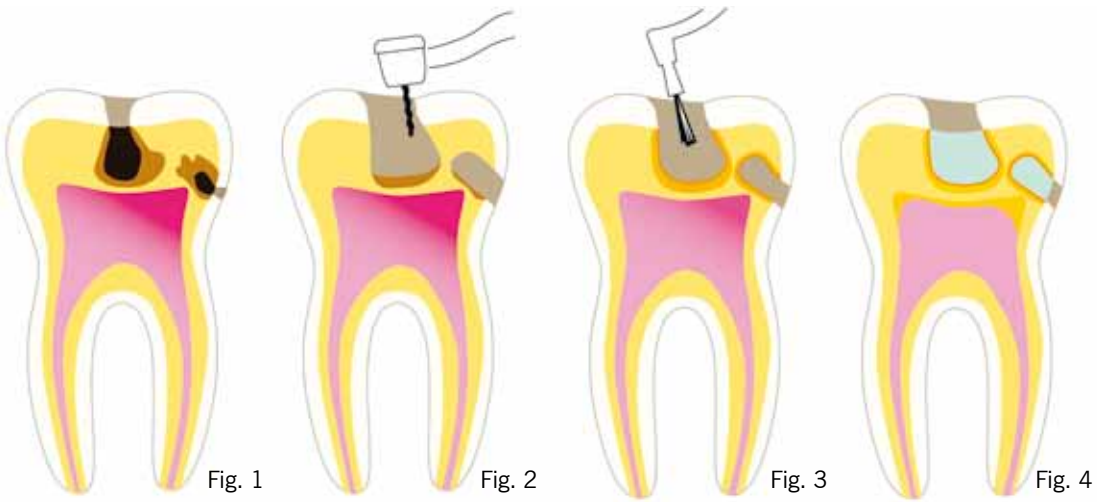
The copals used by Hoffmann Dental Manufaktur for the varnish with the same name, are recently obtained copals from Indonesia. Copal is liquefied with ethanol and receives a lighter or darker colour according to its colour composition, similar to a Single Malt Whisky.

Copal is used for the production of thermoplastic impression compounds, and gives the products their typical shine and firmness. Copal varnish particularly serves as a cavity varnish to protect the pulp.

Natural Healing Cement with Copperions

Minimal invasive Protocol

The protocol described below was developed by Dr. Jean-Pierre Eudier, Luxembourg, and Dr. Nicola Minotti, Switzerland. It describes a minimally invasive method for CP excavation and indirect pulp capping using zinc oxyphosphate cement with copperions.



1. Caries Profunda with initial (reversible) pulpitis (Fig. 1)

2. Atraumatic Preparation of the cavity (Fig. 2)
   The cavity is carefully prepared, carious tissue is removed from the cavity walls. A layer of demineralized dentin is left on the pulp horn to avoid a pulp opening.

3. Application of a copper and copal barrier (Fig. 3)
   Copal varnish mixed with a pinch of copperion cement powder is used as a liner. The ionized copal varnish is applied on the demineralised dentin. Copperions are transported into the dentin tubuli and the tubuli are sealed.

4. Mechanical Copperion Cement barrier (Fig. 4)
   Lost dentin is replaced with a powder rich mixture of copperion cement. The cement can be used as a long term temporary filling. However a sustainable solution requires an enamel replacement with either gold or full ceramic. If budget restrictions prevent a sustainable restoration there are two other options: an amalgam rich in copper or a composite based filling (Preferably a classic etch & bond system without TEGDMA and HEMA).

Copper

A trace element that really cleans up

Copper was the first metal that man learned to form, approximately 10,000 years ago in the Neolithic Age. The word itself is derived from the Latin cuprum (aes cuprium), and refers to the island of Cyprus as a centre of copper mining in the ancient world.

The germicidal (bactericidal) effect of copper was known in the ancient world. The ancient Egyptians used copper for sterilizing drinking water, and Hippocrates of Kos describes the treatment of open wounds with copper in his writings.

Today, the bactericidal effect of copper can not only be proven but also explained. As with silver, it has to do with the so-called oligodynamic effect: Copper ions cause a disruption of the bacterial metabolism and a degeneration of the DNA. And in fact, copper, unlike silver, even has the property of regenerating itself, therefore providing a permanently bactericidal effect.

Furthermore, copper is also one of the essential trace elements required by the human organism. According to the German Society for Nutrition, the recommended daily amount is between 1 and 1.5 milligrams. For example, ten grams of chocolate would cover the daily needs.

Bactericidal protective and healing cement

Copper-containing alloys have been used successfully in dentistry for decades. They provide long-lasting restorative care and very good protection against secondary caries.

Phosphate cements with the addition of copper have been protecting against secondary caries for more than a century. In 1977 Schmalz proved that copper cements have a sustained bactericidal effect, which significantly exceeds the effect of corresponding cements without copper addition.

The antibacterial effect is based on the release of copper ions. The continuous release of copper ions leads to a significant reduction of microbial activity in the vicinity of the treated tooth, and a lasting positive effect.

Milk teeth are the traditional areas of application for copper ion cements. By using copal varnish the protective effect can be doubled – mechanically and chemically.

A relatively new area of application is the cementation of crowns and bridges on implants to protect against peri-implantitis.

The Quest for Sustainable Dentistry

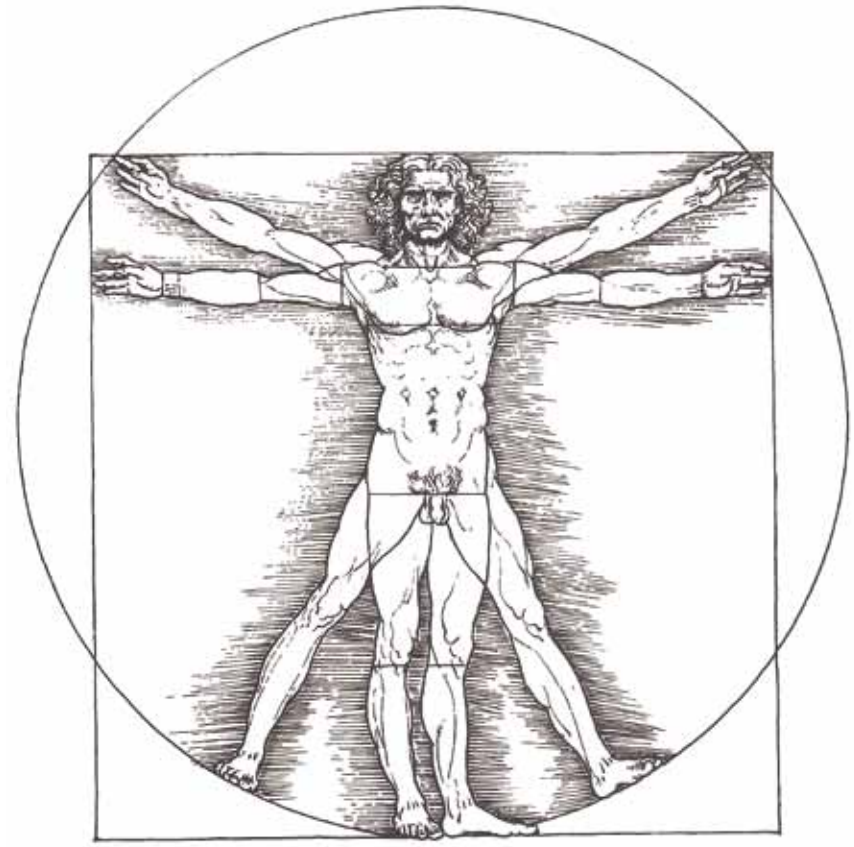
Jean-Pierre Eudier and Jean-Marie Pelt, Summer 2015

Life on earth is not possible without bacteria. Since the discovery of «bugs» in the 19th century, viruses and bacteria are usually seen as enemies or strangers who break into the body and multiply there at the expense of cells (expression commonly identified in medical literature) .

Judging by this way of speaking, viruses and bacteria seem to be feared. The word «germ = aggressor» takes on a particularly destructive guise in a society with negative aspects such as drug addicts or denatured food, as the germs in this context would cause terrible symptoms. Only their destruction seems, at first glance, to be able to prevent or cure the disease. But this fear of the «bad guy» germ is in fact not at all necessary, if it does not really cause any trouble or if the germ actually even has a useful function.

Oral diseases are mainly bacterial diseases. Recent studies have identified several thousands of bacterial species that are natural hosts of the oral cavity. The sterility of the oral environment is utopia. It is in this spirit that we wondered about how we could deal with this bacterial diversity in favor of a balanced bacterial ecology that is necessary to restore a healthy and harmonious oral environment.

Nature offers a variety of biocompatible minerals that can fill dental tissue destroyed by caries. By studying natural bacterial control agents such as zinc, copper, propolis or ozone, we have sought to integrate and restore , the necessary conditions for pulp healing with the aim of protecting the living tooth body in its function. The result of long and patient research, initiated in the 19th century by founder Otto Hoffmann, Hoffmann's products provide means and treatment protocols today, in the 21st century, that are consistent with data acquired from modern science. Hoffmann´s products are in accordance with European directives, are halal and kosher. Above all they adhere to Hippocrates' maxim of "primum non nocere".



"Bacteria have never needed us, but we would not be here without them."

Jean-Marie Pelt, La raison du plus faible (2011)

Dr. Eudier, having long served as a free dentist in Africa, is committed to the development of the dental profession in Africa. Since 1990 he has been a consultant for manufacturers and institutions that devote their efforts to serve the improvement of health in disadvantaged areas, and he has participated in the set-up and rehabilitation of many dental schools in Africa. Apart from his African concerns, he is an honorary professor at the Dental School of Ulaanbaatar in Mongolia.

Palaquium gutta

Gutta-percha

A sap-giving tree

Gutta-percha is closely related to natural rubber. The main provider of this natural polyterpene or polyisoprene is gutta-percha (isonandra gutta), which is found in the rain forests of Malaysia and Indonesia. Its name also comes from Malaysia: getah=rubber and percha=tree. The milky sap (latex) is usually extracted by cutting notches into the trees' bark. Procedures also exist in which gutta-percha is extracted from leaves and twigs by using specific solvents.

In the year 1843, the Englishman Montgomery came across this interesting raw material in Singapore and immediately recognized its beneficial properties. After he had brought back samples with him to England, the large-scale import to Europe began shortly afterwards. The impending extermination of the sap-giving trees was avoided by plantation cultivation. In the middle of the 19th century this natural product was favoured for the manufacture of golf balls, jewellery and decorative accessories. Due to its good insulating properties, gutta-percha was also used for decades as a coating for electric cables.

Gutta-percha already found its way into dentistry in 1847 and was used as a filling material for the first time in the USA. Originally molten lead was used for this purpose. Gutta-percha replaced lead and was used experimentally in many areas of application. For today's daily work, two forms are still of relevance: gutta-percha sticks for root canal fillings, and sealing gutta-percha for temporary sealing of cavities.

Gutta-percha has exceptional thermal isolation properties, high biocompatibility and a clinically proven antibacterial effect (bacteria find it especially difficult to attach to its surface).
The stick material is heated before use until it becomes soft and kneadable at approx. 50°C and can then be inserted into the cavity in a thermoplastic state. Gutta-percha can then be removed relatively quickly and without having to drill.

Hoffmann's gutta-percha sticks consist of natural gutta-percha, to which zinc oxide and bees wax are added. The gutta-percha used at Hoffmann's comes from Java, is almost white and distinguishes itself through its especially high degree of purity. In order to maintain the elasticity of the material, Hoffmann's gutta-percha is sold only in re-sealable tubes.

Delesseria Hookeri, Lyall

Algae

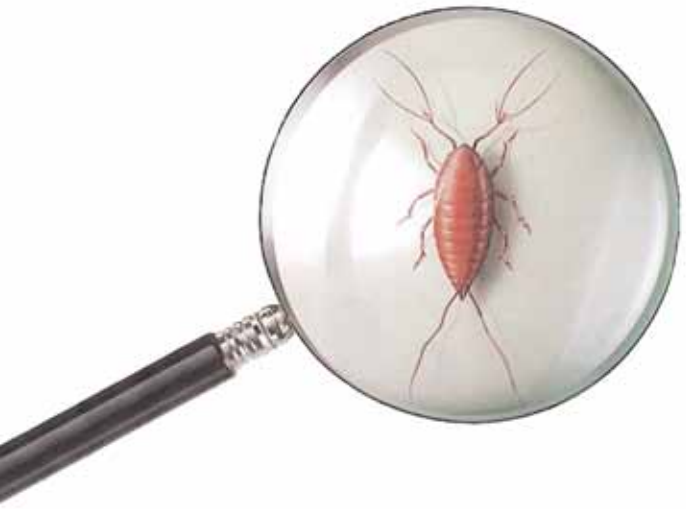
Power from the sea

Algae are the oldest plants on our planet. Researchers assume a global total of more than 100,000 different species of algae. The algae filter valuable trace elements and minerals out of the sea through osmosis. Their nutrient density (amino acids, mineral salts, trace elements and vitamins) is therefore unique in the plant world.

The health-promoting active ingredients are fucoidan, which is obtained mainly from laminaria japonica, and alginic acid. Fucoidan plays an important role in the regeneration of tissue cells and has a strong anti-inflammatory potential. Alginic acid ensures that the cell walls of the algae are stabilized. The gel-like texture of alginic acid gives the algae intercellular strength and flexibility at the same time.

The sodium alginate used in Hoffmann's Proxifungine is the sodium salt of brown algae. These are particularly rich in trace elements and fucoidan, and have an antibacterial and remineralizing effect.

In addition, sodium alginate has a unique property that makes it particularly suitable for use in our denture adhesive powder : provides optimum adhesion properties and releases an antifungal agent. The fungicidal effect, which is restricted to the site of the infection, is particularly characterized by a constant delivery of the active agent (adhesive powder matrix effect).



Video on the subject:
www.hoffmann-dental.com

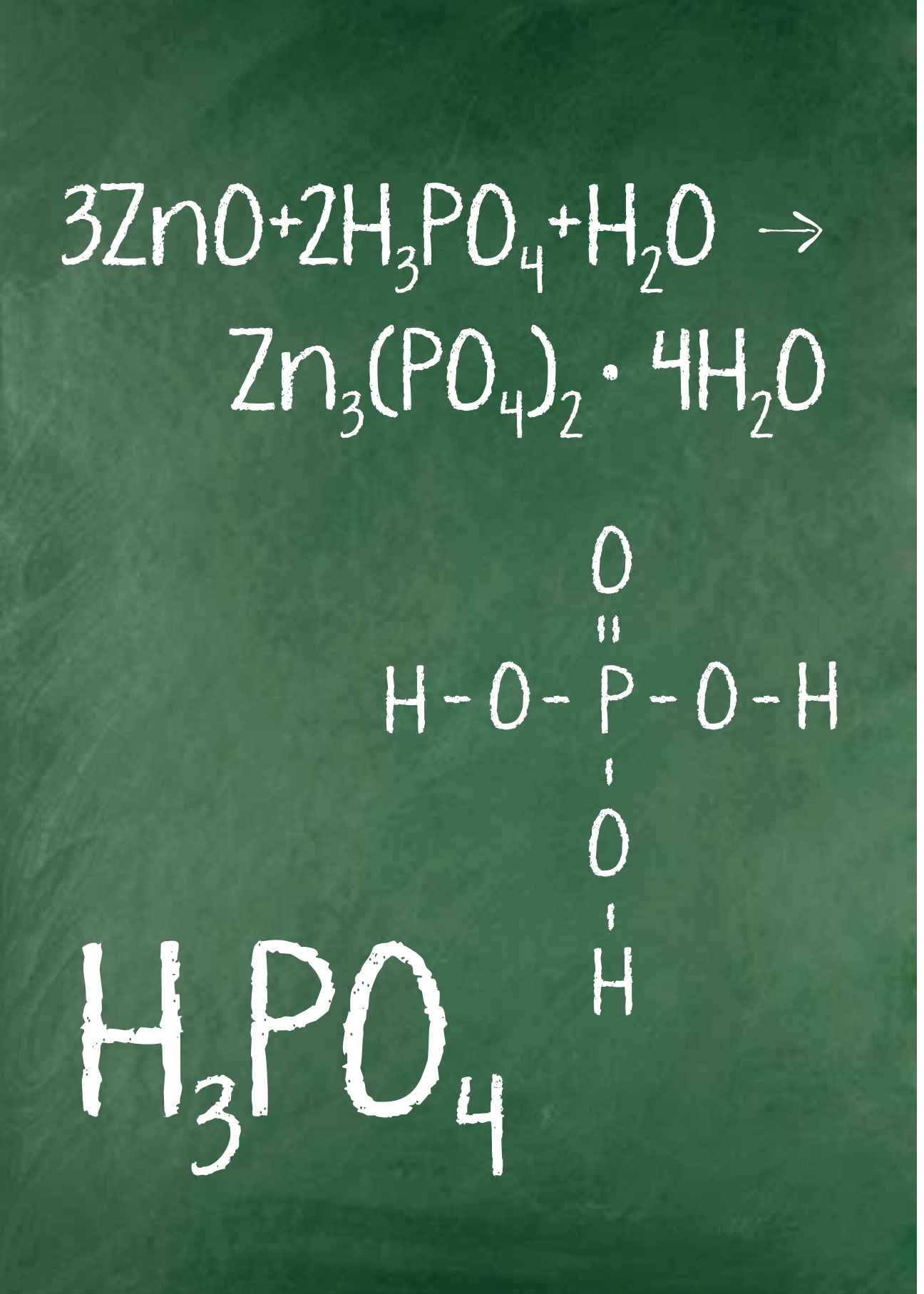
SHELLAC

The work of an illustrious louse

Shellac is a symbiotic product of a tree and an insect which displays natural thermoplastic properties. Shellac has been used since the 15th century (dissolved in alcohol) for the finishing of furniture and instruments. It became world-famous at the end of the 19th century when it was used to make shellac records. However, the triumph of shellac records is not only due to Emil Berliner, the inventor of the gramophone, but equally due to an insect of barely 0.5 mm length called coccus iacca kerr, the shellac louse.

The term lac comes from the Sanskrit word „lakh“ which stands for „infinitely many“. Countless shellac lice settle in huge colonies on young tree shoots, especially those of ficus religiosa and ficus indica. The females of the shellac louse create lac by processing the resin of the fresh twigs in their organism. They themselves are bit by bit covered by the resin completely and die, while 20-30 larvae will develop inside of them, which then escape as insects through holes. What remains is called seed lac, which encrusts the twigs tightly and can be harvested twice a year. The crust is removed from the twigs or branches mechanically and hot filtered through cloth. In order to produce one kilogram of shellac, one requires the metabolic products of approx. 300,000 shellac lice. Depending on the variety, this raw material is available in various colour variations from dark red and brown to yellow.

Hoffmann Dental Manufaktur uses only high-grade shellac from India. Hoffmann's base plates are produced in two different forms for upper and lower jaws. Dental technicians use them as carrier plates for model work for the setting of acrylic teeth or as a basis material for bite registration and individual/custom impression trays. Contrary to the light-curing and autopolymerizing synthetic material often used in dentistry, shellac is physiologically harmless and biologically degradable.



Chemistry and adhesion

Powder and liquid of the phosphate cement essentially consist of zinc oxide and phosphoric acid. Zinc oxide is a component of wound creams for babies, phosphoric acid can be found in your stomach but also in the most popular soft drink in the world: Coke.
The chemical components of phosphate cement are purely inorganic. The individual components are very well tolerated, which is also true for the end product. Zinc oxide and phosphoric acid react with each other and form a crystal, which is called hopeite:

$$3ZnO+2H_3PO_4+H_2O \rightarrow Zn_3(PO_4)_2 \cdot 4H_2O$$

The more powder is kneaded in, the more hopeite crystals are formed and the more favourable the cement's properties will become. The actual amount of hopeite crystals also has an effect on the solubility of the cement.

The ancient Romans knew that only sand from rivers was suitable for the construction of houses. The least suitable is desert sand, the grains of which have been rounded through the strong winds.

Acid pain?

With zinc phosphate cements, so-called acid pain can occur with sensitive patients. This is caused by the acid effect in the direct vicinity of the pulp through nerve irritation. It has nothing to do with the warmth caused by the cement's reaction and immediately dissipates with the curing process.

Acid pain can already be avoided by not reducing the recommended amount of powder and mixing it according to directions. In addition, the cavity can be prepared with cavity protection varnish, for example Hoffmann's Copal Varnish.

Micromechanical adhesion

The adhesion of the phosphate cement occurs micromechanically. On the one hand, it is important that the tooth is prepared accordingly. Literature generally states an optimum preparation angle of 6°. On the other hand, the restoration should have a certain surface roughness.

An optimal particle size distribution ensures the best micromechanical properties of the cement. The distribution ideally follows a normal distribution with smaller and larger particles in the range of up to 25 microns. Additionally the surface roughness of the cement particles is another factor. Grinded particles without any roughness will not provide adhesion.

Hoffmann Dental Manufaktur already developed special grinder technology decades ago. The cements are ground to the right particle size in a three-stage grinding process, and under a microscope one can see that there are angular as well as sharp-edged particles.

GOLD STANDARD!

HOFFMANN´S

PHOSPHATE CEMENT

Mixing technique step by step

TIP

The ideal tools for mixing are a large, thick glass slab and a spatula which can be gripped well and is made of stainless steel.

A crown or bridge luted with Hoffmann's phosphate cement will be able to stay in a patient's mouth for decades. However, ideal success is only achieved if the cement is processed carefully. The two components, consisting of powder and liquid, are mixed together per hand.

This gives you a number of advantages, as the working time, amount and consistency can be individually adapted to the task at hand.

Hoffmann's provides two different dosage forms: the classic version in bottles for freehand dispensing, and pre-dosed as READY2MIX in stick packs and fluid tubes.

Due to the exothermic reaction during the mixing procedure, the powder is always applied to the liquid in portions.

Classic mixing by hand

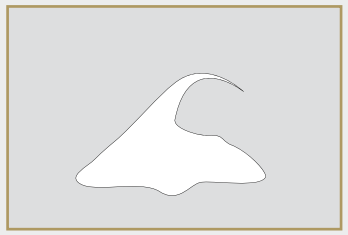
For classic mixing, one divides the powder into four different portions (1/8, 1/8, 1/4, 1/2). Starting with the smallest amount, the portions are mixed into the liquid one after the other with the spatula. The mass should be smoothed out across the slab every now and again, in order to allow the reaction warmth to escape well. A total of 90 seconds is needed for the mixing process.

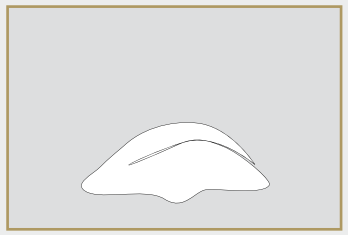
The most difficult but also the most important part is to determine the amount of powder which is to be put into the liquid. As a rule of thumb, a surplus of liquid should be avoided and the mixture should contain ample powder.

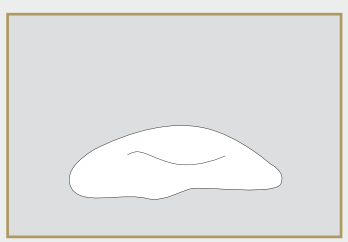
TIP

Consistency control

Checkmark test method







The powder saturation is determined optically by means of the so-called checkmark test. To do so, a tip of material is pulled out of the mass with a spatula. If no tip can be pulled out or if the cement should even drip from the spatula, then powder will definitely have to be added.

Lining

The correct lining consistency is achieved if the formed tip can be bent back into a hook, like a checkmark, and does not sink back into the mass.

Luting

The correct luting consistency is achieved if the pulled out tip slowly sinks back into the mass. If it sinks back too fast, the mixture can be adapted by adding a little more powder. If it does not sink back, but remains on the mass, then the consistency is too thick. In such a case, one should start mixing anew, as no more liquid should be added after mixing.

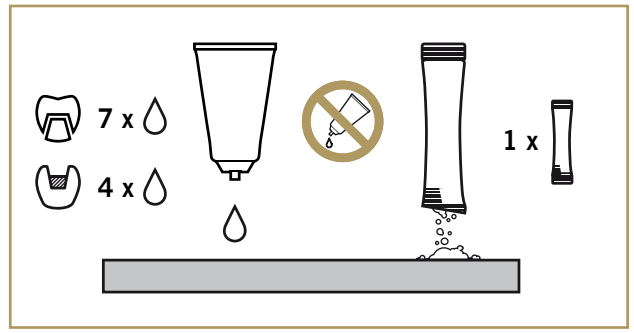
TIP Note

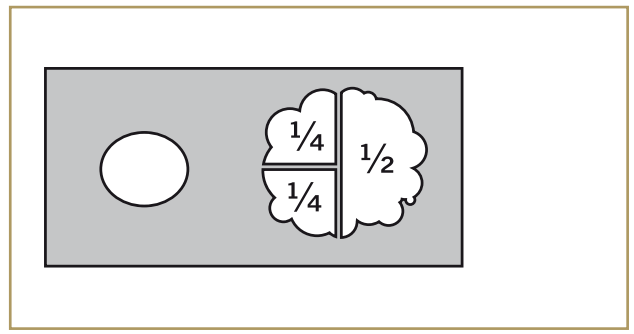
The cement should not be mixed any thinner for the luting of complicated cases that might require more time, as this might cause it to lose its stability. In such cases, instead of quick hardening cement, one can use normal hardening cement which provides a longer working time.

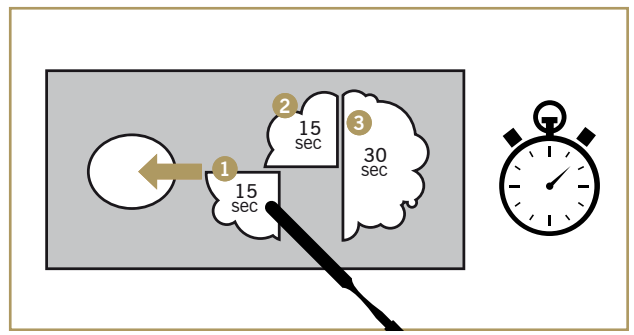
Consistency control

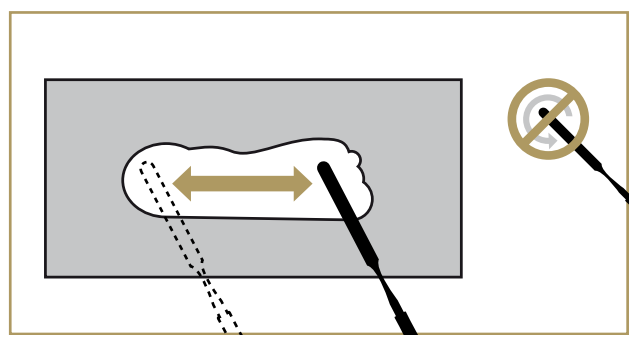
TIP

READY2MIX system









Instructional film for mixing:
WWW.READY2MIX.DE

HOFFMANN´S PRODUCT FAMILIES

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52	HOFFMANN´S Endo Absorb	
53	HOFFMANN´S Endo Absorb Plus	
54	HOFFMANN´S Zinc oxide + Eugenol	SET
55	HOFFMANN´S Proxi Apex	
56	HOFFMANN´S Provisional cement	SET
57	HOFFMANN´S EasyFill Provisional paste	
58	HOFFMANN´S Guttapercha	
59	HOFFMANN´S Universal cement	15, SET
60	HOFFMANN´S Carboxylate cement	15, SET
61	HOFFMANN´S Aqua CC	2, SET
62	HOFFMANN´S Harmonic shades	5, SET
66	HOFFMANN´S Impression compound red	
67	HOFFMANN´S Impression compound green	
68	HOFFMANN´S Casting wax	
69	HOFFMANN´S Adhesive wax	
70	HOFFMANN´S Silane	A, B
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HOFFMANN´S NOMENCLATURE

- Powder stick pack
- Liquid tube
- Powder glass
- Liquid bottle
- Dosing bottle
- Paste-like
- Component
- Sticks
- Round plates
- Lower jaw
- Upper jaw
- Eugenol
- Propolis
- Syringe
- Ozone Therapy
- Algae
- Luting
- Lining
- Recommendation
- Radiopaque
- Set of powder and liquid
- Colour of cement

No.	Colour
-01	white
-02	bluish white
-03	yellowish white
-04	light yellow
-05	yellow
-06	gold yellow
-07	gold brown
-08	pearl grey
-09	grey
-10	greenish grey
-11	bluish grey
-12	brown
-13	greyish brown
-14	light pink
-15	pink

The Gental Alternative
to Chlorhexidine

HOFFMANN´S PERIO$_3$ Oil

Natural gum thearapeutic agent based on ozonized olive oil and castor oil

HOW IT WORKS

Highly reactive ozonides are formed by the incorporation of ozone in natural oils. Unlike ozone gas, they are released slowly over a period of up to 48 hours. Anaerobic bacteria are selectively eliminated, and the oral flora regains its natural balance. The use of chlorhexidine, but also of antibiotics, can be avoided or significantly reduced.

AREAS OF APLICATION

- Acute and chronic gingivitis
- Periimplantitis
- Stomatitis
- Implant surgery: after insertion of the implant, after and before fitting of the abutment and after the osseo integration phase and during placement of the gingival formers
- Gum injuries
- Wounds after tooth extraction
- Cheilitis and wounds caused by herpes sores
- To support the periodontal disease treatment
- After professional tooth cleaning

ADVANTAGES

- Natural material
- Strong disinfectant and antibacterial
- Preservation of healthy oral flora
- Without additional antibiotics and cortisone
- alcohol-free

Order No.	Package size	Composition
84047	3 ml gel	Ozone-enriched olive oil and castor oil

"The safety of the medicinal product Fungan has been confirmed after clinical evaluation during an application period of 10 years."
Christiane Curtze, Dipl. pharm ETH chemist

HOFFMANN´S FUNGAN

Fast-acting antifungal denture adhesive powder based on algae

HOW IT WORKS

The product combines a denture stabilizing effect and fungicidal activity. The success rate in the case of denture stomatitis associated with candida albicans infection is 100% after 3 weeks. Sodium alginate, an algae extract of brown algae, ensures the powerful adhesive powder matrix effect and a constant release of the active substance. Contains miconazole.

AREAS OF APLICATION

- Denture stomatitis
- Candida albicans infections

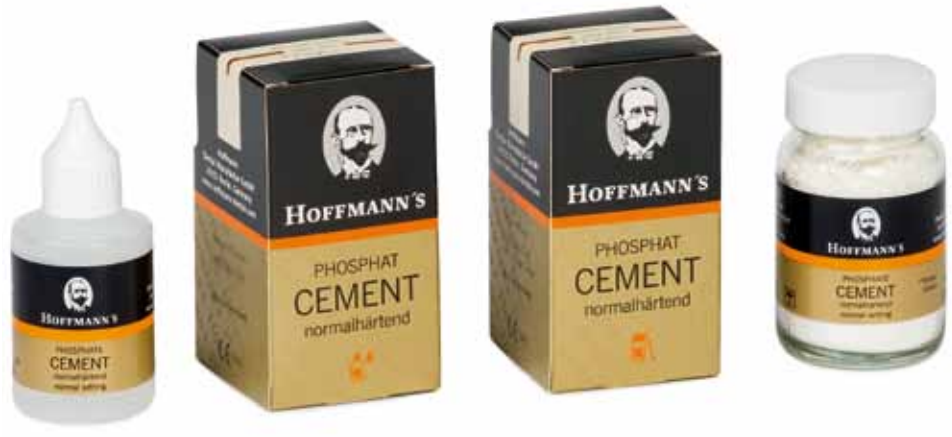
ADVANTAGES

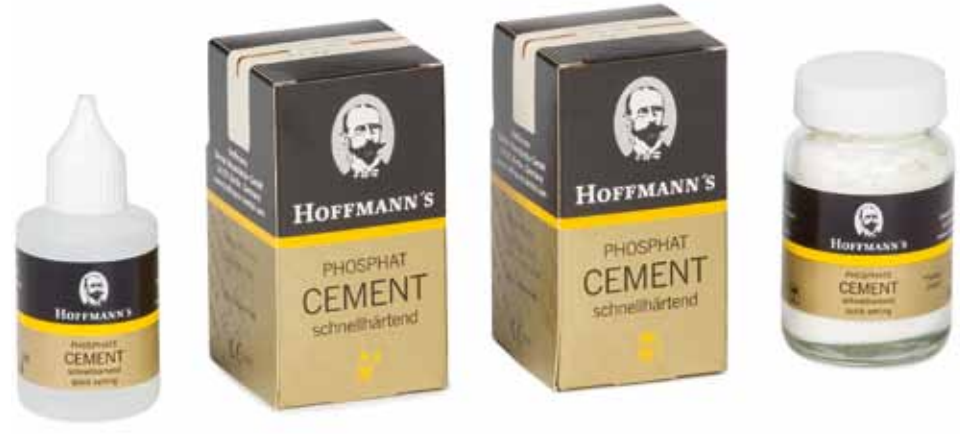
- Very good compatibility
- Stable, elastic adhesive medium combined with fast-acting ingredient
- Success rate in the case of denture stomatitis with associated candida albicans infection: 90 - 100% after 2 weeks, 100% after 3 weeks
- Protects the oral mucosa from bruising and injuries

Order No.	Package size	Composition
84067	10 g powder	Alginate, miconazole nitrate

0%
Monomere, Phenole, Nanofüller, Bestandteile tierischen Ursprungs

125 YEARS OF CLINICAL EXPERIENCE 1892–2017





HOFFMANN´S ZINC PHOSPHATE CEMENT - NORMAL SETTING

ZINC PHOSPHAT CEMENT - normal setting		
Order No.	Package size	Colour
80022-(Colour)	1 x 100 g powder	01-15
8002300	1 x 40 ml liquid	---
80025-(Colour)	1 x 35 g powder 1 x 15 ml liquid	01-15

Composition

Powder: Zinc oxide, magnesium oxide
Cement liquid: o-phosphoric acid

Areas of application

- Lining for all filling materials (amalgam, composites)
- Cementation of inlays, onlays, crowns and bridges made of precious metal, non-precious metal as well as metal ceramic and all-ceramic (zirconium oxide, aluminium oxide and lithium disilicate ceramic)
- Cementation of implant-supported crowns and bridges
- Cementation of orthodontic bands
- Cementation of retention pins and screws
- Core build-ups
- Long-term temporary fillings

Advantages of Hoffmann´s phosphate cement

- Dimensionally stable – no shrinkage and therefore no formation of marginal gaps
- Excellent micromechanical adhesion
- Wide range of applications from A like amalgam to Z like zirconia
- Very easy removal of excess material
- Extremely low pulp toxicity
- Hypoallergenic
- More than 120 years of clinical experience

HOFFMANN´S ZINC PHOSPHAT CEMENT - QUICK SETTING

ZINC PHOSPHAT CEMENT - quick setting		
Order No.	Package size	Colour
80012-(Colour)	1 x 100 g powder	01-15
8001300	1 x 40 ml liquid	---
80015-(Colour)	1 x 35 g powder 1 x 15 ml liquid	01-15

Composition

Powder: Zinc oxide, magnesium oxide
Cement liquid: o-phosphoric acid

Overview of times

Shorter setting times compared to Hoffmann's Phosphate Cement normal setting for faster work.

Areas of application	Phosphate Cement normal setting			Phosphate Cement quick setting		
	Mixing time	Working time	Setting time	Mixing time	Working time	Setting time
Luting	1:30	3:00	5:00 – 7:30	1:30	2:30	3:00 – 5:30
Lining	1:30	2:30	3:30 – 5:30	1:30	2:00	2:30 – 4:00

Times (min)

Lehrfilm zum Anmischen:
WWW.READY2MIX.DE

Phosphate cement in a single dose for the 21st century

READY2MIX - ZINC PHOSPHATE CEMENT

READY2MIX		
Order No.	Package size	Colour
80024-(Colour)	Stick 20 x 1 g powder Tube 1 x 10 ml liquid	01, 03, 04

READY2MIX Pocket		
Order No.	Package size	Colour
8002355	Stick 5 x 1 g powder Tube 1 x 3 ml liquid	03

Instructional film for mixing:
WWW.READY2MIX.DE

Areas of application

- Lining for all filling materials (amalgam, composites, etc.)
- Cementation of inlays, onlays, crowns and bridges made of precious metal, non-precious metal and ceramic
- Cementation of zirconium oxide, aluminium oxide and lithium disilicate ceramic
- Cementation of implant-supported crowns and bridges
- Cementation of orthodontic bands
- Cementation of retention pins and screws
- Core build-ups
- Long-term temporary fillings

Composition

Powder: Zinc oxide, magnesium oxide
Cement liquid: o-phosphoric acid

Advantages over other single dose systems

- A system for lining, luting and long-term temporary restorations
- Individual consistency control
- Works without technical devices
- 90% less packaging waste compared to capsules

Advantages of phosphate cement

- No moisture control necessary
- Easy removal of excess material
- Very low pulp toxicity
- Recommended for people suffering from allergies
- Antibacterial effect

Natural peri-implantitis protection
Bactericidal luting cement for implants

READY2PROTECT CEMENT4IMPLANT - COPPERION CEMENT

READY2PROTECT CEMENT4IMPLANT		
Order No.	Package size	Colour
8007015	Stick 20 x 1 g powder Tube 1 x 10 ml liquid	---

READY2PROTECT		
Order No.	Package size	Colour
8007010	Stick 10 x 1 g powder Tube 1 x 5 ml liquid	---

How it works

Copper ions can move freely in the cement structure and are released to the matrix environment in time. Due to their high affinity, they react with negatively charged functional groups of polypeptides from bacteria. The thus resulting bonding reactions alter the molecular structure of the polypeptides, which leads to a loss of function. The polypeptides (e.g. the transport proteins that are responsible for the regulated transport of substances across cell membranes) thus become worthless for the bacterial cell, which dies. This bactericidal activity therefore inhibits the formation of an undesirable biofilm.

Composition

Powder: Zinc oxide, magnesium oxide, copper salts
Cement liquid: o-phosphoric acid

Areas of application

- Definitive cementation of implant-supported crowns and bridges
- Cementation of inlays, onlays, crowns and bridges made of precious metal, non-precious metal and ceramic
- Cementation of restorations made of zirconium oxide and aluminium oxide ceramic as well as lithium disilicate ceramic
- Cementation of orthodontic bands
- Cementation of retention pins and screws

Benefits

- Radiopaque for easy follow-up
- Easy removal of excess material
- Environmentally compatible
- Allergies against copper are extremely rare

Phosphate cement with copper additive and bactericidal properties

HOFFMANN´S COPPER CEMENT

COPPER CEMENT		
Order No.	Package size	Colour
8072203	1 x 100 g powder	---
8072300	1 x 40 ml liquid	---

Composition

Powder: Zinc oxide, magnesium oxide, copper salts
Cement liquid: o-phosphoric acid

Areas of application

- Fillings in deciduous teeth
- Lining for all filling materials (amalgam, composites)
- Cementation of inlays, onlays, crowns and bridges made of precious metal, non-precious metal as well as metal ceramic and all-ceramic (zirconium oxide, aluminium oxide and lithium disilicate ceramic)
- Cementation of implant-supported crowns and bridges
- Cementation of orthodontic bands
- Cementation of retention pins and screws
- Core build-ups
- Long-term temporary fillings

Benefits

- Dimensionally stable – no shrinkage and therefore no formation of marginal gaps
- Very easy removal of excess material
- Low risk of allergic reactions
- Bactericidal effect

HOFFMANN´S COPAL VARNISH - CAVITY VARNISH

COPAL VARNISH		
Order No.	Package size	Colour
81901	50 ml, liquid	---

Composition

Copal, ethanol

Areas of application

- Disinfecting cavity protection varnish for the avoidance of post-operative sensitivity
- Cavity protection varnish before cement fillings
- Sealing of dentinal tubules
- Lining of cavities before amalgam fillings and restorations made of gold to protect against corrosion products
- Insulation against thermal shock
- Protective varnish for the surfaces of cement fillings and plaster models

Advantages

- Made of natural raw materials
- Ready-to-use solution
- Contains no chloroform or ethyl ether
- Fluoride free

Indication Table

AREAS OF APPLICATION	PULPINE	PULPINE NE	PULPINE MINERAL	ENDO REPAIR	ENDO ABSORB	ENDO ABSORB PLUS	PROXI APEX	READY2PROTECT + Copal
Caries profunda [indirect pulp capping]	+++	+++	+++	++				++++
Indirect pulp capping with reversible pulpitis		+++	+++					++++
Direct pulp capping [always without pulpitis]	+	++	+++	++++				
Indirect pulp capping [after crown preparation]		+++	++++	++++				
Direct pulp capping [after crown preparation]		++	+++	++++				
Exsudate formation during root canal treatment					++++	++++		
Bleeding during root canal treatment					+++	+++		
Root filling [vital extirpation]							++	
Final root filling [after gangrene treatment]							++	
Vital extraction of deciduous teeth				++++				
Perforation of the root canal [temporary]				++++				
Perforation of the root canal [final]				++++				
Incomplete root growth [root filling, temporary]				++++				
Incomplete root growth [root filling, final]				++++				
Over-instrumented apex				++++				

\+ possible
++ good
+++ very good
++++ excellent

Video
www.hoffmann-dental.com

Bactericidal protection cement against secondary caries

READY2PROTECT COPPERION CEMENT + COPAL VARNISH

READY2PROTECT + Copal		
Order No.	Package size	Colour
8007020	Stick 10 x 1 g powder Tube 1 x 5 ml liquid Container 1 x 1 g powder Bottle 1 x 5 ml Copal varnish	---

Composition

Powder: Zinc oxide, magnesium oxide, copper salts
Cement liquid: o-phosphoric acid
Copal varnish: Copal, ethanol

Method

The cavity is prepared carefully, and the caries-affected tissue removed from the cavity walls but not from pulp horn. Opening the pulp should be avoided. A thin liquid mixture is made of Copal varnish and Copperion cement powder, which is applied as a copper barrier onto the demineralised dentin. Two things happen: First, the copper ions are transported into the dentinal tubules and, secondly, the varnish forms a protective layer against possible acid pain. Subsequently, a long-term temporary cement filling is put in place, which can also serve as a lining.

Areas of application

- Healing cement to preserve vital teeth also with deep caries in combination with Hoffmann's Copal varnish using a copper barrier
- Minimal invasive caries treatment with modified ART technique
- Fillings in deciduous teeth
- Long-term temporary fillings, saliva-proof, with bactericidal effect
- Lining with long-lasting bactericidal effect for all types of teeth (also for vital teeth)
- Lining for all filling materials (composites and amalgam)
- Core build-ups

HOFFMANN´S PULPINE

Biocompatible alternative to MTA and other calciumhydroxide-containing materials, with propolis and eugenol

HOW IT WORKS

The matrix with eugenol and propolis sets quickly and limits the possible side effects of alkaline calcium hydroxide, such as permanent stimulus or uncontrolled necrosis. The antibacterial properties of propolis (bee resin) supplement the disinfecting properties possessed by calcium hydroxide. Very good biocompatibility. Relieves pain.

AREAS OF APPLICATION

- Caries profunda, indirect pulp capping
- direct pulp capping, always without pulpitis

CONTRAINDICATION

Do not use if you are allergic to eugenol and/or bee products.

ADVANTAGES

- Biocompatible pulp capping alternative with propolis
- Controlled neutralization of calcium hydroxide
- Easy application
- Quick and complete setting
- Pain-relieving

Order No.	Package size	Composition
84016	10 g powder	calcium compounds, zinc compounds
84017	10 ml liquid	ethanol, eugenol, propolis

HOFFMANN´S PULPINE NE

Eugenol-free biocompatible MTA alternative for direct and indirect pulp capping

HOW IT WORKS

The matrix with propolis limits the possible side effects of alkaline calcium hydroxide, such as permanent stimulus or uncontrolled necrosis. The antibacterial properties of propolis supplement the disinfecting properties possessed by calcium hydroxide. Very low calcium hydroxide concentration of 1.9%.

AREAS OF APPLICATION

- Caries profunda, indirect pulp capping
- Indirect pulp capping with reversible pulpitis
- Direct pulp capping, always without pulpitis
- Direct and indirect pulp capping after crown preparations

CONTRAINDICATION

Do not use if you are allergic to bee products.

ADVANTAGES

- Biocompatible pulp capping alternative with propolis
- Controlled neutralization of calcium hydroxide
- Easy application through thin mixing
- Quick and complete setting
- Pain-relieving

Order No.	Package size	Composition
84056	10 g powder	calcium compounds, zinc compounds
84057	10 ml liquid	ethanol, propolis

HOFFMANN´S PULPINE MINERAL

Hydroxyapatite and propolis-containing pulp capping material and alternative to MTA

HOW IT WORKS

Hydroxyapatite, which forms about 70% of natural dentin, is embedded in the composite of calcium hydroxide and propolis. It forms a very stable setting matrix without gaps and without necrosis formation. The antibacterial properties of propolis lead to a complication-free healing of infected pulp tissue.

AREAS OF APPLICATION

- Caries profunda, indirect pulp capping
- Indirect pulp capping with reversible pulpitis
- Direct pulp capping, always without pulpitis
- Direct and indirect pulp capping after crown preparations

ADVANTAGES

- Antibacterial effect
- No necrosis formation
- Easy application
- Very good adhesion
- Quick setting

CONTRAINDICATION

Do not use if you are allergic to bee products.

Order No.	Package size	Composition
84078	5 g powder	calcium compounds, hydroxyapatite
84077	10 ml liquid	ethanol, propolis

HOFFMANN´S ENDO REPAIR

The alternative to MTA, biological bone cement on pure calcium phosphate basis

HOW IT WORKS

The bone- or tooth-like matrix ensures maximum biocompatibility. Necrosis can be prevented and there is an almost asymptomatic healing of the pulp under the stable artificial bone layer.

AREAS OF APPLICATION

- Caries profunda, indirect pulp capping
- Direct pulp capping, always without pulpitis
- Direct and indirect pulp capping after crown preparations
- Vital extraction of deciduous teeth
- Perforation of the root canal
- Incomplete root growth, root filling
- Over-instrumentation of apex

ADVANTAGES

- Pure calcium phosphate matrix
- No necrosis formation
- Easy application
- Quick and complete setting

Order No.	Package size	Composition
84086	3,5 g powder	calcium phosphates, hydroxyapatite
84087	10 ml liquid	distilled water (without preservatives)

Bentonite -
“Healing Clay”

HOFFMANN´S ENDO ABSORB

Temporary root canal therapeutic for absorbing apical exudate

HOW IT WORKS

Biocompatible root canal filling material with a unique feature: It absorbs exudate up to an amount of 120% of its own weight. At the same time it has an antimicrobial effect. Absorption capacity over a period of 7 days. Contains calcium hydroxide. Radiopaque.

APPLICATION AREAS

- Treatment of infected root canals after pulp removal or gangrene treatment
- Preparation of the root canal before apical closure
- Treatment of exudate formation and bleeding after root canal treatment

ADVANTAGES

- Absorption of the exudate up to 120% of its own weight
- Antimicrobial
- Very good compatibility
- Absorption capacity of 1 week

Order No.	Package size	Composition
84035	5 g powder	calcium compounds, bentonite, radiocontrast agent
84037	10 ml liquid	alcohol

HOFFMANN´S ENDO ABSORB PLUS

Biocompatible root canal filling material with increased absorption capacity

HOW IT WORKS

Temporary root canal therapeutic with antimicrobial effect and a unique feature: It absorbs exudate up to an amount of 120% of its own weight and over a period of 3 weeks. Contains calcium hydroxide. Radiopaque.

APPLICATION AREAS

- Treatment of infected root canals after pulp removal or gangrene treatment
- Preparation of the root canal before apical closure
- Treatment of exudate formation and bleeding after root canal treatment

ADVANTAGES

- Absorption of the exudate up to 120% of its own weight
- Antimicrobial
- Very good compatibility
- Absorption capacity of 3 weeks

Order No.	Package size	Composition
84040	5 g powder	calcium compounds, bentonite, radiocontrast agent
84039	10 ml liquid	alcool

HOFFMANN´S ZINC OXIDE EUGENOL - WITH NATURAL CLOVE OIL

ZINC OXIDE – EUGENOL		
Order No.	Package size	Colour
8100600	1 x 30 g powder 1 x 15 ml liquid	---

Composition

Powder: Zinc oxide
Liquid: Eugenol

Areas of application

- Short-term temporary sealing of cavities with pain-reducing and soothing effect

Advantages of Hoffmann´s zinc oxide eugenol cement

- Pure natural clove oil
- Intense flavour of cloves

Note

A closed dentin layer is a prerequisite for application

HOFFMANN´S PROXI APEX

Biocompatible root canal filling material based on zinc oxide eugenol with antibacterial effect

HOW IT WORKS

Hoffmann‘s PROXIAPEX is a eugenol-containing root filling material for permanent treatments. During the 20 minute setting process the pH value is neutralized. The material exhibits a mild antibacterial effect and is radiopaque.

APPLICATION AREAS

Permanent root canal filling material

- After vital extirpation
- After gangrene treatment
- Before apicoectomy

BIOLOGICAL ADVANTAGES

- Very good tolerability
- Antibiotic and cortisone-free mild antibacterial effect
- Neutral pH value
- No irritation of the apical soft tissue after setting

PHYSICAL ADVANTAGES

- Good canal wall resistance
- Tight sealing of the dentin canals thanks to increased viscosity
- Quick setting
- High radiopacity

Order No.	Package size	Composition
84026	10 g powder	zinc compounds, calcium compounds, zirconium oxide
84027	10 ml liquid	eugenol

Temporary filling cement with antibacterial properties.

HOFFMANN´S PROVISIONAL CEMENT - TEMPORARY FILLINGS

TEMPORARY CEMENT		
Order No.	Package size	Colour
8100203	1 x 50 g powder	---
8100300	1 x 40 ml liquid	---

Composition

Powder: Zinc oxide, aluminium hydroxide
Liquid: o-phosphoric acid

Areas of application

- Classic short-term temporary closure of cavities

Advantages of Hoffmann´s temporary cement

- Easily removable from the cavity
- Saliva-proof over a period of one month
- Biocompatible due to exclusively inorganic ingredients

For classic short-term temporary fillings, Hoffmann's Temporary Cement is saliva-proof over a period of one month and can be used for temporary sealing. The durability of the temporary seal strongly depends on the oral flora and oral hygiene, as well as the diet of the individual patient.

HOFFMANN´S PROVISIONAL PASTE

PROVISIONAL PASTE		
Order No.	Package size	Colour
8100400	1 x 40 g	---
8100401	2 x 40 g	

Composition

Zinc oxide, potassium sulphate, zinc sulphate

Areas of application

- Temporary fillings

Advantages

- Ready for use
- Smooth consistency
- Can be easily modelled with customary filling instruments
- Self-curing mass in moist conditions in only 15 min
- Good adaptation to cavity margins
- Easy removal from the cavity with a probe or an excavator
- Eugenol-free

Temporary sealing material with antibacterial properties

HOFFMANN´S GUTTAPERCHA - STOPPING

GUTTAPERCHA		
Order No.	Package size	Colour
82303	Sticks 110 g	---

Composition

Zinc oxide, gutta-percha, paraffin, beeswax

Areas of application

- Temporary filling of cavities
- Sealing of holes in implant screws during the healing phase

Advantages of Hoffmann´s Guttapercha

- Genuine raw gutta-percha
- High biocompatibility
- Antibacterial effect
- Easy to remove without residues
- Easy removal from the cavity with a probe or an excavator
- Eugenol-free

Universal phosphate cement powder for use with 3 different liquids

HOFFMANN´S UNIVERSAL CEMENT - ONE FOR ALL

UNIVERSAL CEMENT		
Order No.	Package size	Colour
80032-(Colour)	1 x 100 g powder	01-15

Composition

Powder: Zinc oxide, magnesium oxide
Cement liquid: o-phosphoric acid, polyacrylic acid

Areas of application depending upon used liquid

- Lining for all filling materials (amalgam, composites)
- Cementation of inlays, onlays, crowns and bridges made of precious metal, non-precious metal as well as metal ceramic and all-ceramic (zirconium oxide, aluminium oxide and lithium disilicate ceramic)
- Cementation of implant-supported crowns and bridges
- Cementation of orthodontic bands
- Cementation of retention pins and screws
- Core build-ups
- Long-term temporary fillings
- Fillings in deciduous teeth

Advantages of Hoffmann´s universal cement

- Can be combined with three different cement liquids
- A retail favourite, as it requires only one shelf space

A popular classic for 50 years
Zink polycarboxylate cement for luting and lining

HOFFMANN´S CARBOXYLATE CEMENT

CARBOXYLATE CEMENT		
Order No.	Package size	Colour
80312-(Colour)	1 x 100 g powder	01-15
8031300	1 x 40 ml liquid	---
80315-(Colour)	1 x 35 g powder 1 x 15 ml liquid	01-15

Composition

Powder: Zinc oxide, magnesium oxide
Liquid: Polyacrylic acid

Areas of application

- Lining for all filling materials (amalgam, composites)
- Cementation of inlays, onlays, crowns and bridges made of precious metal, non-precious metal and ceramic
- Cementation of orthodontic bands
- Cementation of retention pins and screws
- Core build-ups
- Long-term temporary fillings
- Fillings in deciduous teeth

Advantages of Hoffmann´s carboxylate cementt

- No acid pain
- For sensitive tooth stumps
- Easy to use
- No etching, priming, bonding
- Compressive strength well above the material standard

The sealed individual packages of powder ensure absolute dryness of the highly hygroscopic powder and thus ideal cementation properties.

AQUA CC - WATERMIX CARBOXYLATE CEMENT

AQUA CC		
Order No.	Package size	Colour
8037010	Stick 10 x 1 g powder Dosing water bottle	universal
8037014	Stick 10 x 1 g powder Dosing water bottle	light pink

Application as lining cement

To compensate for polymerisation shrinkage under composite fillings. The special material properties of AquaCC make it a perfect lining material. AquaCC expands minimally and can thus compensate for shrinkage of composites and prevent the formation of marginal gaps. AquaCC also acts as a barrier against the free radicals formed during polymerization. AquaCC contains zinc and has an antibacterial effect.

Further indications

- Cementation of restorations on implants
- Core build-ups
- Long-term temporary fillings

Composition

Zinc oxide, magnesium oxide, polyacrylic acid

Benefits

- No acid pain, especially suitable for sensitive tooth stumps and when working without anaesthetics
- Compressive strength well above the material standard
- Exact dosage and reproducible cement properties
- Ease handling
- Easy removal of excess material

Aesthetics / Tip

AquaCC is available in two colours: universal tooth-colour and light pink. The opacity of the lining cement ensures harmonious priming and retention of the colour stability even for longer periods of time. Due to the light pink hue, a particularly vivid effect can be achieved.

For the Leonardo da Vincis of dentistry

Luting cement based on phosphate cement, for mixing of individual colours for matching translucent all-ceramic restorations

HOFFMANN´S HARMONIC SHADES - FOR OXIDE CERAMICS

HARMONIC SHADES / SET		
Order No.	Package size	Colour
82200	1 x 100 g, powder 4 x 30 g, powder	01, 07, 10, 11,15
	1 x 40 ml, cement liquid	---
	1 x 40 ml, test fluid	---

HARMONIC SHADES / REFILLS		
Order No.	Package size	Colour
82201	1 x 100 g powder	01 white
82507	1 x 30 g, powder	07 golden brown
82510	1 x 30 g, powder	10 green-grey
82511	1 x 30 g, powder	11 blue-grey
82515	1 x 30 g, powder	15 pink
82300	1 x 40 ml, cement liquid	---
88800	1 x 40 ml, test fluid	---

Areas of application

Try-in of different coloured cements and definitive cementation with the possibility of:

1. Chairside colour shade correction of the restoration to adapt to the remaining teeth
   - Lightening (colour 01 and shades mixed with 01)
   - Darkening (colour 07, 10, 11)
   - Colour shade corrections of the restorations (all colour shades and mixed shades)
2. Matching of differently shaded tooth stumps
3. Imitation of perfused pulp (pink trick)

Benefits

- No opaquer
- No correction firing
- Well-tolerated mineral food colours
- Test fluid approved as foodstuff
- Very low allergy potential in accordance with biocompatibility of oxide ceramics
- Low film thickness with optimum grain size distribution for a stable micromechanical bond

HOFFMANN´S HARMONIC SHADES - FOR OXIDE CERAMICS

Composition

Powder: Zinc oxide, magnesium oxide
Cement liquid: o-phosphoric acid
Test fluid: Propane-I,II,III-Triol

Phosphate cements are very successfully used with ceramics that have a firmness of over 200 MPa. These include zirconium dioxide, aluminium oxide as well as lithium disilicate ceramic. The restorations are more or less translucent depending on the material strength. Differently coloured stumps, metal posts and cores or implant abutments must first be covered so that the overall aesthetic result is consistent.

Phosphate cements are opaque. The opacity of the cement can be used to obtain uniform priming, or even to mimic a vital pulp. The cement colours of the shade set can be mixed together to achieve a custom colour scheme without sending the restauration back to the laboratory. With the help of the test fluid, a try-in can be carried out (no temporary cementation).

TECHNICAL DATA		
	Hoffmann´s	ISO standard
Setting time:	4:00 - 7:30 min	2:30 - 8:00 min.
Compressive strength:	90 - 130 MPa	50 Mpa
Film thickness:	< 20 µm	< 25 µm

Colour 07 Colour 11

Luting of full-ceramic crowns

Hoffmann´s Cement normal setting
Hoffmann´s Cement quick setting
Hoffmann´s READY2MIX
Hoffmann´s READY2PROTECT Copperioncement
Hoffmann´s Harmonic shades

All above mentioned Hoffmann´s zinc phosphate based cements are recommended for cementation of crowns and bridges made of oxide ceramics (zircon oxide and aluminium oxide) as well as lithium disilicate ceramics with a strength of more than 200 MPa. Please refer to the chart below to find out the suitable ceramics from well-known manufacturers. We explicitly advise that the list is not exhaustive.

Company	System	Name
3M ESPE AG	Lava TM	Lava TM Zirkonoxid Lava TM Plus hochtransluzentes Zirkonoxid
ACF GmbH	-	ZirLuna ZirLuna A LunaBase
Amann Girrbach AG		Ceramill Zolid units Ceramill ZI units
Bien-Air GmbH	DCS	DC-Zirkon® DC-Zirkon®Col DC-Leolux® DC-Procura® DC Shrink®
Bionah GmbH	-	BionZ Crystal BionZ Diamond
CAD Esthetics AB	-	Denzir®
DeguDent GmbH	-	Cercon smart ceramics®
Dental Direkt		DD Bio ZW iso DD Bio ZW iso Color DD Bio ZX^2 DD Bio ZS DD Bio ZK
Diadem SAS	-	Diazir
DOCERAM Medical Ceramics GmbH	-	Nacera Z
Glidewell Laboratories	-	BruxZir® Solid Zirconia
Goldquadrat GmbH		QUATTRO DISC ZIRKON transluzent QUATTRO DISC ZIRKON opak QUATTRO DISC Zirkon Eco transluzent QUATTRO DISC Zirkon Eco opak
Ivoclar Vivadent AG	IPS e.max	IPS e.max Press IPS e.max ZirCAD IPS e.max CAD
Kavo Dental GmbH	Everest	Everest ZS-Zirkonkeramik
Kuraray Noritake Dental Inc.	-	Katana Zirconia
Luxburg und Reins AG	-	ReinluxTM Zirkon Premium ReinluxTM Zirkon transluzent ReinluxTM Zirkon Color
Metoxit AG	-	Z-CAD®
Nobel Biocare AG	Procera®	Procera® Zirconia Procera® Alumina
Sagemax Bioceramics Inc.	-	Sagemax Zr
Sirona Dental Systems GmbH	Cerec InLab	Cerec Blocs Cerec Blocs PC inCoris ZI inCoris TZI inCoris ZI meso
Vita Zahnfabrik GmbH	In-Ceram	Vita In-Ceram YZ Vita In-Ceram AL Vita In-Ceram ZIRCONIA Vita In-Ceram SPINELL Vita In-Ceram ALUMINA
Wieland Dental+Technik GmbH & Co. KG	Zenotec®	Zenostar Zr Translucent Zenotec Al Crown Zenotec Zr ridge
Zirkonzahn Worldwide	-	ICE Zirkon Translucent Prettau Zirkon
Zfx Zirkon	Zfx Zirkon	Zfx-Zirkon effect/opal

Stents thermoplastic impression compound for precise functional impressions

HOFFMANN´S IMPRESSION COMPOUND RED - STENTS

IMPRESSION COMPOUND RED		
Order No.	Package size	Colour
82604	6 plates	red

Composition

Stearin, copal, talc

Areas of application

- Individual impressions
- Bite registration, also of edentulous mandibles before the production of special splints

Also suitable for small and highly sophisticated modelling techniques and modelling techniques used in jewellery workshops.

Processing temperature

58 – 62 °C

Benefits

- Easy to heat
- Easy to knead
- Does not stick to gloves, teeth or stumps
- Bite registration can be easily repositioned, corrected and milled
- Dimension-true reproduction of detail
- Odourless
- Composition of natural raw materials with a high degree of pharmaceutical-grade purity
- Physiologically harmless
- Compostable

Stents thermoplastic impression compound for precise impressions and

HOFFMANN´S IMPRESSION COMPOUND GREEN - STENTS

IMPRESSION COMPOUND GREEN		
Order No.	Package size	Colour
82607	15 sticks	green

Composition

Stearin, copal, talc, carnauba wax

Areas of application

- Correction of impressions
- Enhancing the impression edges
- Occlusal bite registration
- Copper ring impressions

Processing temperature

58 – 62 °C

Benefits of Hoffmann´s impression compound green

- Easy to heat
- Excellent flowability
- Even deformability
- Bite registration can be easily repositioned, corrected and milled
- Rapidly hardens in cold water
- Composition of natural raw materials with a high degree of pharmaceutical-grade purity
- Physiologically harmless
- Compostable

HOFFMANN´S CASTING WAX - INLAY WAX (BLUE OR IVORY)

CASTING WAX		
Order No.	Package size	Colour
83001	20 sticks, 30 g	blue
83101	20 sticks, 30 g	ivory

Composition

Paraffin, carnauba wax,
dammar resin, stearin

Areas of application

- Stick casting wax with excellent natural plasticity, excellently suited for the modelling of inlays, onlays, crowns and bridges
- In many cases also suited for small and complicated modelling techniques used in jewellery workshops

BLUE - traditionally for cast gold fillings
IVORY - for ceramic and synthetic restorations

TIP

Processing is carried out by means of a Bunsen burner, open flame and electrical wax knife.

Melting point

approx. 75 °C

Advantages

- Particularly suitable for the traditional direct wax technique
- Dimensionally stable
- Residue-free combustion
- Composition of natural raw materials with a high degree of pharmaceutical-grade purity
- Physiologically harmless
- Biodegradable

Adhesive wax speciality – breaks like glass

HOFFMANN´S ADHESIVE WAX (RED OR YELLOW)

ADHESIVE WAX		
Order No.	Package size	Colour
82914	14 sticks, 70 g	red
82913	14 sticks, 70 g	yellow

Composition

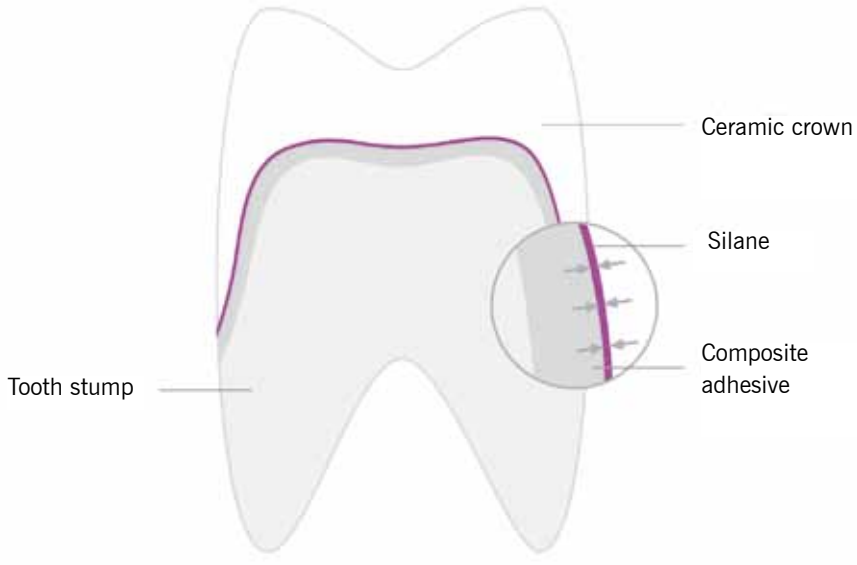
Colophony, bees wax, carnauba wax

Areas of application

- Blocking out undercuts on the model
- Fixation of parts to be soldered before making the soldering model
- Crown and bridge modellation: Fixation of model to a casting funnel, blocking and securing the cap to a bridge
- Re-fixation of severed bridge modellations in order to prevent tension in the wax
- Fracture repairs of prostheses: Fixation of broken denture bases or chipped teeth for subsequent making of model or matrix
- Fixation of the maxilla and mandible for insertion in an articulator

Benefits of Hoffmann's adhesive wax

- Particularly suitably for the traditional direct wax technique
- Stick shape very easily workable by heating the wax directly over a flame (drips) or controlled melting on a hot instrument
- Excellent adhesive properties; adheres to gypsum or other dental materials
- Made of pure natural raw materials
- 100% error control, no undetected warping of modellations or fixations: the material is hard and brittle at room temperature; the wax does not bend but breaks under load
- Easy removal using steam
- Residue-free combustion – with the pleasant smell of beeswax



In clinical use for a quarter of a century (Roulet 1989 Theiss 2009)

HOW IT WORKS

The reagents A and B of Hoffmann's silane are mixed 1:1, which creates silanol, the reactive agent. Silicate-based ceramics, such as leucite glass ceramic (IPS Empress) and fluoroapatite-ceramic (IPS-e. Max ZirPress) are first etched with hydrofluoric acid to form a micro-retentive, crystalline surface structure.

During silanization of the silica surface, a chemical bond between silanol and ceramic is formed through the reaction of the methoxy group of the silanol with the silicon oxide group of the ceramic with the formation of Si-O-bridges.

The short hydrocarbon rests of the silanols have a reactive double bond, which can then polymerize onto the adhesive composite.

HOFFMANN´S SILANE HOFFMANN´S

SILANE		
Order No.	Package size	Colour
82101	Component A, 5 ml Component B, 5 ml	---

Composition

Acetic acid in ethanol solution, 3-methacryloyloxy-propyltrimethoxysilane in ethanol solution

Areas of application

- To increase the chemical bonding force during adhesive cementation of silicate ceramics, silicated oxide ceramic or metal restorations with meth-acrylate bearing cementation materials (composites, compomers and ormocers)
- As a ceramic-composite bonding agent for ceramic repairs

Benefits of Hoffmann's two-component silane

- Full reaction force as the reagents are mixed freshly before each use
- Longer shelf life after opening the bottle
- Optimal chemical bonding surface with simultaneous good surface wettability
- Prevention of adhesion defects

HOFFMANN´S ULTRA VIOLET BASE PLATES - LIGHT CURE

ULTRA VIOLET BASE PLATES	
Order No.	Package size
828300	50 plates, maxilla

Areas of application

- Base plates for wax-ups
- For making individual impression trays
- Functional impression taking for crown and bridge restorations
- Bite plates and plates for intraoral support pin registration

Safety note

UV base contains methacrylates, which are potential contact allergens. In order to avoid direct skin contact, the plates must be provided with an inhibition layer out of Vaseline. After hardening in a light oven, this can be seen as a smear layer on the plates. The layer can be wiped off after light curing with a cloth soaked in alcohol. An additional step to protect the skin.

Composition

Matrix of multi-functional methacrylates and inorganic fillers

Characteristics of Hoffmann's ultraviolet base

- High dimensional stability, break-proof
- Low and uniform plate thickness of 2.2 mm
- Very low shrinkage (2.08 vol%)
- Low water absorption (<0.1%)
- Long processing time at normal room lighting and daylight
- Complete light curing in just a few minutes in all customary light ovens (halogen and UVA light)

As an environmentally friendly alternative we recommend Hoffmann's shellac base plates.

Video on the subject:
www.hoffmann-dental.com

Allergy-free and sustainable work in a dental laboratory with natural shellac base plates

HOFFMANN´S SHELLAC BASE PLATES - PINK

SHELLAC BASE PLATES	
Order No.	Package size
82824	8 plates maxilla + 4 plates mandible
82825	12 plates maxilla
82826	12 plates mandible
8282104	50 plates maxilla + 50 plates mandible
8282105	100 plates maxilla
8282106	100 plates mandible

Areas of application

- Individual impression trays
- Making dentures: Base material for bite impressions and tooth lineups

Features

- Easily and uniformly processed with heat
- Dimensionally stable (retains shape during try-in in patient mouth)
- Available in two versions for maxilla and mandible
- Material thickness approx. 1.3 mm

Composition

Shellac, stearin, talc, mica

Advantages compared to light-curing and autopolymerizing materials

- Corrective measures can be taken without material-loss through re-heating
- Natural raw materials with a high degree of pharmaceutical-grade purity
- Physiologically harmless
- Biodegradable
- Skin-friendly – no known allergies
- Pleasant odour

Processing recommendations

Hoffmann's shellac base plates should be heated very gently with a customary CE certified hot air blower. Hot air provides a uniform spreading of heat and thus reduces the risk of burning.

TIP On hot summer days
put a cool pack under the glass plate!

HOFFMANN´S EXPERT MIXING TOOLS

TIP

EXPERT MIXING TOOLS		
Order No.	Tool	Dimensions and weight
82900	Mixing block made of crystal glass, solid	150 x 75 x 20 mm, 596 g
82908	Cement spatula, heavy version	approx. 17.2 mm, approx. 23 g

Glass mixing block – solid crystal block

Shatter-proof, resistant to abrasion even from metal spatulas, and easy to clean. The perfect basics for mixing all Hoffmann's cements.

Throughout the entire mixing process the glass maintains a constant temperature even in the case of heat from reaction. The glass block provides plenty of space for spreading and allows safe and ergonomic handling.

Cement spatula – heavy version

The cement spatula provides high work comfort and facilitates the mixing of cements – even with very solid, packable lining consistencies.

NOTES:

Contact

For detailed information on materials, processing and sources of supply, please contact our medical product advisers:

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