

ZELBRITE

Advanced Filtration Media

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The Very Latest in Swimming Pool Filter Media Keeps your pool sparkling clear Superior water quality with enhanced pool aesthetics

Superior performance—better than Diatomaceous Earth (DE) or active carbon/sand combination filters

ZELBRITE

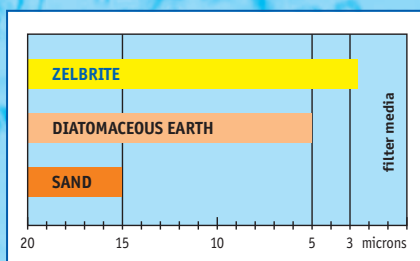
- Zelbrite active filter media is made from the unique natural mineral called Zeolite. This environmentally friendly mineral has a 3-dimensional structure of microscopic apertures and channel ways like a hard, but porous sponge. Zelbrite's porous structure provides a huge surface area which traps the smallest particles, down to 3 microns, and removes them from your pool.
- No special equipment needed, simply replace the sand in your filter with Zelbrite
- The unpleasant effects of stinging eyes, irritating or dry skin, acrid chemical smells are mostly eliminated. These are generally caused by mono-and di-chloramines formed by the reaction of ammonia/ammonium and the chlorine used for disinfection. Zelbrite by removing ammonia/ammonium from the water prevents the formation of these irritating and dangerous compounds.
- The more efficient use of chlorine leads to very significant reduction in chlorine usage. Typically chlorine usage reductions of 35% are achieved.
- By using Zelbrite, the frequency of backwashing is lower. This can give you considerable savings in water cost. As the backwash water contains "heat" and chemicals that have been applied, these have to be replaced. Therefore there are immediate savings from less frequent backwashing in water cost, heating cost and chemical cost. Backwashing has often been reduced by up to 50%.
- The less frequency of backwashing hence less discharge of wastewater to the environment. The chemical action of Zelbrite and its buffering capacity results in a more efficient use of chlorine and reduction in other chemicals used for pH control. As a result the total dissolved solids (TDS) discharge to the environment is lower.

No other filtration medium on the market provides 3 mechanisms for cleaning pool water:

- Physical Filtration + Surface Adsorption + Chemical Capture
- Macro Filtration + Micro Filtration + Ion Exchange

ZELBRITE—call your pool shop or pool service today!
Use as directed on the packaging label!

Packaging: 15 kg bags, 1 bag replaces 20 kg of sand by volume.



mehr info



Weltneuheit bei der Filtration von Schwimmbadwasser Erhöht die Ästhetik ihres Schwimmbadpools und bildet für sie und ihre Familie ein gesundes und sicheres Umfeld

Das Filtermedium, das durch seine Leistung alle bisher angewandten Filterstoffe, wie DE (Diatomaceous Earth), kombinierte Filter mit Aktivkohle und hochschichtige Sandfilter, übertrifft.

ZELBRITE

- erfordert keine technisch anspruchsvollen Filter oder spezielle Anlagen. Sie ersetzen mit ZELBRITE den Sand im Filter,
- durch die Verwendung von ZELBRITE erhöht sich einerseits die Effektivität der Wasserreinigung bedeutend andererseits kann die benötigte Chlormenge bis zu 35 % reduziert werden,
- eliminiert effektiv den Geruch im Pool und die Reizung der Augen und Haut dadurch, dass es Ammoniak und andere organische Verunreinigungen, die für die Entstehung von Chloramin verantwortlich sind, wirkungsvoll aus dem Wasser herausfiltert,
- beseitigt effektiv auch die kleinsten Verschmutzungsteilchen – bis zu 2 Mikromillimeter – Resultat ist kristallklares Wasser in ihrem Pool – keinerlei trübes Wasser bei der Beleuchtung mit Unterwasserstrahlern,
- garantiert Einsparungen bezüglich der Kosten ihrer Schwimmbadwasserpflge – die Häufigkeit der Filterrückspülung sinkt bis zu 50 %, Kostensenkung auch bei der Poolbeheizung – Das ist bares Geld.
- ZELBRITE schont die Umwelt: durch Energieeinsparung und die Abgabe einer geringeren Menge verunreinigten Wassers in das Abwasser.

Kein anderes, auf dem Swimmingpool-Markt zugängliches Filtermedium weist eine 3-Stufen-Filtration in einem Prozess auf:

- Mechanische Filtration + Oberflächenabsorption + Chemische Adsorption
- Makrofiltrierung + Mikrofiltrierung + Ionenaustausch

ZELBRITE – Fordern sie es bei ihrem Pool-Lieferanten oder bei dem Kundendienst an.

Die Gebrauchsanweisung auf der Verpackung ist einzuhalten!

Packaging: 15 Kg Säcke-Eine Verpackung ersetzt 20 kg Sand.

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The Product

Zelbrite is manufactured to exacting standards from natural zeolitic material sourced from our mine at Werris Creek in New South Wales. This natural material was formed over 300 million years ago as a result of volcanic activity in the vicinity of a large freshwater lake. Over the passage of geological time, this material was overlain by hundreds of meters of other material giving rise to a zeolitic material of exceptional hardness and durability. In fact, a material exceptionally suited to "filtration" applications.

The active ingredient of the zeolite is "clinoptilolite", a mineral with very special properties. These include an exceptionally high surface area, an infinitely extending three-dimensional "cage"-like structure with large internal pore spaces, and the ability to chemically capture pollutants by a mechanism called "cation-exchange".

Exceptional Filtration Capability

These properties enable three mechanisms to interact to produce superior filtration.

First there is physical capture between particles as occurs in conventional sand filtration. Secondly there is capture of pollutants onto the very extensive surface area of Zelbrite by adsorption. Chemical pollutants such as ammonia are captured by the third mechanism of cation exchange. The result these three mechanisms working together is superior water quality not matched by traditional methods of pool filtration.

Benefits to the user

Health/Aesthetic

- Dramatically reduced pool odour and eye and skin irritation form marked reduction of chloramine formation
- Superior water quality resulting from additional surface capture of contaminants and chemical capture by cation-exchange
- Superior water quality enhances the effectiveness of disinfection to eradicate micro-organisms (bugs)

Environmental

- Greater dirt-holding capacity results in less frequent backwashing with savings in power and less discharge of backwash water to the environment.
- The "buffering" capacity and cation-exchange capabilities result in more efficient use of chlorine and reduction of chemicals used for pH control

Economic

- Savings from significant reduction in chemical addition
- Savings in power due to less backwashing and lower pump head due to lighter filtration material

Summary

This is a new and exciting product which offers significant advances in the art of pool and spa filtration.

The Zelbrite advanced media offers the performance of

diatomaceous earth, or better, with the convenience of a sand filter. The ultimate benefit for the user is a superior swimming-pool water environment which is both safer and more pleasant to swim in.

What is Zelbrite

ZB is an advanced filtration material that outperforms the traditional pool filtration mediums of sand and Diatomaceous Earth.

It is manufactured from zeolitic material which is formed as a result of volcanic activity. There are a range of different zeolitic materials produced with varying properties. The key active ingredient in Zelbrite is the mineral clinoptilolite. Clinoptilolite has a proven scientific track record in water treatment and Zelbrite now brings these advanced filtration features which produce superior water quality and economic benefits, to the pool and spa industries.

The active ingredient Clinoptilolite

Clinoptilolite is a mineral with very special properties.

One of its properties is that it has an infinitely extending "cage" like structure resulting in large internal pore spaces. It also has a very high surface area, in the range of 20 to 30 m² per gram. This is best appreciated as a teaspoon of Zelbrite having enough surface area to cover a football field. Imagine the effective surface area in a Zelbrite filter! A further amazing property of clinoptilolite is that it is chemically active. Within its structure it has calcium, magnesium and sodium ions which it can exchange for pollutants such as ammonium which will be present in the pool water. This process is called "ion-exchange" and is an important mechanism in Zelbrite providing a chemical treatment action in tandem with physically trapping pollutants in water.

In addition to Zelbrite's ion-exchange capacity, it also has the ability to adsorb a range of pollutant organic-molecules present in swimming pool water. This ability results from its unique surface structure and surface electrical charge.

Why Zelbrite works as a superior filter

With all the unique properties of clinoptilolite working in Zelbrite, the pool water not only gets a superior "physical" treatment but an additional "chemical" treatment, resulting in cleaner pool water. No other filtration medium on the market (such as sand and DE) can produce this "double whammy" treatment of pool water!

The difference in "physical" performance can be explained by the fact that the surface of sand is quite smooth and non-porous. Contaminants can only be trapped between the sand grains. Zelbrite not only traps contaminants between grains, but additionally traps contaminants onto its vast pitted surface area and within its porous structure. Thus its ability to attract, capture and hold dirt and other contaminants is far greater than conventional filtration materials. It also traps

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finer particles such as colloids and can filter to diatomaceous earth standards or better. This translates to exceptional pool-water clarity and sparkle.

From the "chemical" perspective, it is important to understand that most contaminants in pool water are of organic origin produced by bathers (human detritus from skin cells to urea). These complex organic substances containing nitrogen eventually breakdown to ammonia/ammonium. Chlorine, used for disinfection, combines both with the ammonia and with these organic pollutants, to form both irritating and dangerous compounds.

For example, when ammonium ions mix with chlorine, chloramines are formed (these register as combined chlorine in testing). Chloramines are the compounds generally responsible for the acrid odours and burning eyes in pools. By removing ammonium by ion-exchange, Zelbrite significantly reduces the propensity to form these compounds. Additionally, the chemical adsorption qualities of Zelbrite, remove harmful organic pollutants and again lessen their interaction with chlorine.

Besides the superior water quality produced for bathers, chlorine usage is markedly reduced as ammonium and organic contaminants are removed, and the chlorine is utilised in disinfection (free chlorine) rather than combining (combined chlorine) with contaminants.

As a consequence the ancillary chemical requirements are reduced and total dissolved solid (TDS) build-up is also reduced.

How long does Zelbrite last

The active component clinoptilolite is encased in a very solid and stable mineral complex which results in a very robust Zelbrite filtration particle.

In fact most zeolitic material around the world is quite soft and would be totally unsuitable to withstand the rigours of filtration, backwashing and constant contact between particles.

As a result Zelbrite has a prolonged life, similar to sand, due to its exceptional hardness and resistance to attrition.

The physical properties of a Zelbrite filter keep working year after year with normal filter maintenance such as backwashing.

On the chemical side, the Zelbrite can be considered as a "chemical sponge". Once the sponge is fully saturated, it needs to be regenerated if all the chemical benefits are to be retained.

Regeneration of Zelbrite

In order to restore the "chemical" capacity of Zelbrite, the ion-exchange process is effectively reversed. This is achieved by making sodium ions displace the captured ions such as ammonium.

In practice, this is simply carried out by fully soaking the Zelbrite filter with a 10% salt solution (1kg of NaCl for every

10 liters) for 6 to 12 hours, or simply overnight.

After soaking for the required time, the recharged filter should be backwashed and rinsed in the normal way before bringing it back to service.

For detail on regeneration for large commercial installations, please contact our company for additional information.

A summary of the benefits of this amazing filtration material

The benefits can be grouped into the following general areas: Water quality, Health benefits, Environmental and Economic benefits.

Water quality benefits

- Higher dirt holding capacity and removal of finer particles (down to diatomaceous earth standards or better) provides cleaner pool water which can be measured as lower suspended solids (SS).
- Chemical ion-exchange and also adsorption lead to a marked reduction of ammonia/ammonium and a reduction in a range of organic contaminants. This can be measured by taking ammonia readings and combined chlorine readings which will be lower.
- As a result of lower chemical usage, pool water total dissolved solids (TDS) will be significantly lower. This can be confirmed by the measurement of TDS

Health Benefits

- The unpleasant effects of stinging eyes, irritating or dry skin, acrid chemical smells are mostly eliminated. These are generally caused by mono- and di-chloramines formed by the reaction of ammonia/ammonium (present from the breakdown of human organic detritus) and the chlorine used for disinfection. Zelbrite by removing ammonia/ammonium from the water prevents the formation of these irritating and dangerous compounds.
- Water quality and health specialists believe that some of the compounds formed between the interaction of ammonia/ammonium, organic contaminants and chlorine are potentially carcinogenic. By removing ammonia/ammonium and organic contaminants with Zelbrite filtration media before they interact with chlorine, the risk of forming these dangerous compounds is dramatically reduced.
- Bacteria causing infections and disease seek protection wherever they can. They will inhabit the dirt particles in a pool and to some extent be protected from chlorination. By providing a cleaner pool, Zelbrite enhances the effectiveness of chlorination to eradicate these bugs and provide a safer and healthier swimming pool.

Environmental

- The greater dirt-holding capacity of Zelbrite means that there is less frequency of backwashing and hence less discharge of wastewater to the environment.
- The chemical action of Zelbrite and its "buffering" capacity

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results in a more efficient use of chlorine and a reduction in other chemicals used for pH control. As a result the total dissolved solids (TDS) discharged to the environment is lower.

Economic

Although Zelbrite will initially cost more than filter sand, a consideration of economic benefits shows that 'life-cycle' costs are in fact much lower. Key economic benefits include: As the frequency of backwashing is lower, this can give considerable savings in water costs. As the backwash water contains 'heat' and chemicals that have been applied, these have to be replaced. Therefore there are immediate savings from less frequent backwashing in water costs, heating costs and chemical cost. Backwashing has often been reduced by up to 50%.

- The more efficient use of chlorine (resulting from the removal of ammonia/ammonium and organic contaminants) leads to very significant reduction in chlorine usage. Typically chlorine usage reductions of 30% or greater are achieved.

Media comparison

CHOOSE ZELBRITE – THE BEST FILTRATION MEDIUM!

Your pool filtration system is arguably the most critical component of your pool – after all, it is the part that keeps your pool clean. Shouldn't you have the best available?

- The natural 'buffering' characteristics of Zelbrite and lower use of disinfectants results in lower use of chemicals (such as carbon dioxide) for pH control.
- The less dense nature of the Zelbrite filtration particle and its specific structure results in the filter medium being less restrictive to water flow than sand. This manifests ultimately as a saving in power/electricity.
- With specific equipment such as salt chlorinators (installed downstream of the Zelbrite filter) the electricity consumption is less. This results in the extension of the plate life of the chlorinator.

THESE REMARKABLE ECONOMIC SAVINGS IN THE USE OF THE ZELBRITE FILTRATION MEDIUM ARE NOT ACHIEVED WITH ALTERNATIVES SUCH AS SAND AND D.E.

THERE ARE COMPELLING REASONS FROM THE POOL AESTHETIC, WATER QUALITY, HEALTH AND SAFETY, ENVIRONMENTAL AND ECONOMIC POINTS OF VIEW TO NOW USE THIS ADVANCED FILTRATION TECHNOLOGY IN SWIMMING POOLS AND SPAS.

MEDIUM	ZELBRITE	SAND	DE
CHARAKTER	"Zelbrite" Used continuously for many years	Sand Used continuously for many years	Diatomaceous Earth Replaced after every backwash
FILTRATION EFFICIENCY	Excellent	Good	Excellent
FILTERS TO	2–3 microns	15 microns	5 microns
MULTIPLE MECHANISMS	Yes	No	No
REMOVES AMMONIA	Yes	No	No
REDUCES CHLORAMINES	Yes	No	No
CONVENIENCE	Excellent Simple backwash	Excellent Simple backwash	Not so convenient Backwash to also remove unused DE
OPERATING COST	Low as virtually permanent medium*	Low as virtually permanent medium	Medium Requires regular replacement of DE

* Additional operating advantages of
Less backwashing (water saving)
Less power
Less pool chemicals

ZELBRITE: ADVANCED FILTRATION MEDIUM WITH THE PERFORMANCE OF DE (OR BETTER), BUT THE CONVENIENCE OF SAND.

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Weltneuheit bei der Filtration von Schwimmbadwasser



Bisher wurden Sandfilter, kombinierte Sandfilter mit Aktivkohle und DE (Diatomaceous Earth) als traditionelle Filtermedien bei der Filtration von Schwimmbadwasser verwandt. Die Eigenschaften und die Qualität dieser Filter werden jedoch durch die derzeit auf dem europäischen Markt eingeführte Neuheit ZELBRITE übertroffen.

Grundbestandteil

Schlüsselkomponente dieses Produkts ist das zeolithische Mineral Clinoptilolite, dessen Struktur mit einem unendlichen Gitter von ausgedehnten Innenräumen - Poren verglichen werden kann. Seine Oberfläche ist sehr breit 20-30 m²/g. Zur anschaulichen Illustration kann man sich vorstellen, dass ein Esslöffel ZELBRITE soviel Fläche umfasst, wie die Größe eines Fußballplatzes. Wenn wir die übliche Filtergröße für die Schwimmbadwasserpfege bedenken, können wir uns vorstellen, was für eine effektive Filterfläche mit dem neuen Filtermedium ZELBRITE gewonnen werden kann. Eine weitere angenehme Eigenschaft des Minerals

Clinoptilolite ist seine chemische Aktivität. Seine Struktur besteht aus Calcium-, Magnesium-, und Natrium-Ionen, diese binden bei der chemischen Reaktion die Polutanten Ammoniak und Chloramin. Diesen Prozess nennt man Ionenaustausch. ZELBRITE ist auch in der Lage, mechanischen Verunreinigungen sehr gut zu absorbieren. ZELBRITE wird aus Ablagerungen zeolithischer Mineralien in unserem Bergwerk Werris Creek, NSW, Australien, gem. der Abbaunormen gefördert. Das zeolithische Mineral entstand durch vulkanische Tätigkeit in der Nähe eines prähistorischen Süßwassersees vor mehr als 300 Mio. Jahren. Im Verlauf der geologischen Perioden wurde dieses Material von anderen Gesteinen mit einer Mächtigkeit von Hunderten Metern überdeckt. Diese einmaligen geologischen Bedingungen trugen zur Entstehung eines solchen zeolithischen Material bei, welches sich durch seine außergewöhnliche Härte und Widerstandskraft auszeichnet. Dadurch ist das Material zu Filterzwecken außerordentlich gut geeignet.

Vergleich der Wirksamkeit der verschiedenen Filtermedien

MEDIUM	ZELBRITE	SAND	DE	SAND und AKTIVKOHLE
CHARAKTER	Verwendung über mehrere Jahre	Verwendung über mehrere Jahre	Austausch nach jeder Rückspülung	häufiger Austausch der Aktivkohle
FILTRATIONSWIRK.	hervorragend	gut	sehr gut	sehr gut
MECHANISCHE FILTRATION	2-3 Mikronen	15 Mikronen	5 Mikronen	15 Mikronen
MEHRFACHFILTR.	ja	nein	nein	ja
AMMONIAK-ABSORPTION	ja	nein	nein	teilweise
CHLORAMIN-REDUKTION	ja	nein	nein	teilweise
AUFWAND BEI DER BEDIENUNG	niedrig, einfache Rückspülung	niedrig, einfache Rückspülung	hoch, bei Rückspülung Verlust des Filters	hoch
BETRIEBSKOSTEN	niedrig, permanentes Filtermedium	niedrig, permanentes Filtermedium	Austausch des Filtermediums bei jeder Rückspülung	hoch

Filtermedium

ZELBRITE verfügt über alle die einzigartigen Eigenschaften von Clinoptilolite, wie bereits beschrieben. Verwendet man den ZELBRITE - Filter erhält man am Ende des Filterprozesses unvergleichbar sauberes und gesünderes Wasser, als bei der Anwendung der bisher bekannten Filtermedien. Der Unterschied der physikalischen Eigenschaften bei der Aufnahme von festen Verunreinigungen wird im Vergleich mit einem Sandfilter, dessen Körner glatt und nicht porös sind, besonders deutlich. Dort werden die Schmutzteilchen nur zwischen den Sandkörnern aufgefangen. Im Gegensatz dazu arbeitet ZELBRITE mit einer feingliedrigen Kornfläche

und seiner Hohlstruktur. Seine Fähigkeit, viele Verunreinigungen aufzunehmen, ist deshalb um ein Vielfaches größer, als bei anderen Materialien. Es fängt gleichzeitig kolloide Partikel auf. Aus chemischer Sicht muss bedacht werden, dass die Verunreinigung von Schwimmbadwasser überwiegend organischer Herkunft ist und vom Menschen verursacht wird (Hautpartikel, Urin usw.). Diese Partikel, die Stickstoff beinhalten, zersetzen sich allmählich und es entsteht Ammoniak. Chlor, das zum Desinfizieren des Wassers eingesetzt wird, verbindet sich mit dem Ammoniak und organischen Polutanten und so entstehen gefährliche Reizstoffe. Bei der Reaktion von

ZELBRITE

Weltneuheit bei der Filtration von Schwimmbadwasser

Ammoniak und Chlor entstehen Chloramine (bei der Wasserprobe erscheint diese Verbindung als Chlor), die allgemein für den abstoßenden Geruch, Augen – und Hautreizungen verantwortlich sind. ZELBRITE mit seiner Eigenschaft, durch den Ionenaustausch das Ammoniak zu absorbieren, vermindert die Bildung solcher Verbindungen. Es absorbiert die ungewollten organischen Polutanten, wodurch sich die Möglichkeit einer Reaktion mit Chlor verringert.

Die Regenerierung von ZELBRITE

Aus der Sicht der chemischen Eigenschaften kann man ZELBRITE als „chemischen Schwamm“ bezeichnen. Sobald der Schwamm gesättigt ist, muss er regeneriert werden, um seine guten chemischen Eigenschaften zu erhalten. Zur Erneuerung der chemischen Kapazität von ZELBRITE kehrt sich der Prozess des Ionenaustausches um: Natrium-Ionen pressen die festgesetzten Ionen, z.B. Ammoniak-Ionen, heraus. In der Praxis verläuft dieser Regenerierungsprozess ganz einfach. Der ZELBRITE-Füllung im Filter wird für 8 – 12 Stunden eine 10%ige Salzlösung (1 kg NaCl / 10 l) hinzugefügt. Danach erfolgt die übliche Rückspülung des Filters. Der Filter ist sofort bereit für den weiteren Betrieb. Die Häufigkeit der Filterregenerierung hängt vom Zweck der Verwendung ab (Charakter des Schwimmbeckens und Art der Belastung). Aufgrund von Erfahrungen in der Praxis lässt sich sagen, dass bei privaten Familienschwimmbädern die chemische Regenerierung erst nach 2 Jahren notwendig ist.

Vorteile des Produkts ZELBRITE

Das neue Produkt hat eine Reihe von wirtschaftlichen, gesundheitlichen, ökologischen und betriebswirtschaftlichen Vorteile, das sind:

- Anspruchslosigkeit bei der Bedienung, erfordert keine technisch anspruchsvollen Filter oder spezielle Anlagen,
- Einfacher Austausch: der Sand im Filter wird durch die gleiche Menge von ZELBRITE ersetzt,
- Erhöhung der Chlorierungswirkung, dadurch Reduzierung der aktiven Chlormenge um bis zu 35 %,
- Effektive Eliminierung des Geruchs im Pool und die Reizung von Augen und Haut dank der Reduzierung von Chloraminen,
- Unvergleichliche Wirkung im Vergleich zu anderen Filtern und dadurch Einsparung der Kosten für die Schwimmbadwaspflege,
- Effektiver Einsatz der Desinfektionsmittel bei der Vernichtung von Mikroorganismen und Bakterien im Wasser,
- Seltenerer Rückspülung – bis zu 50 %, dadurch Energie – und Wasserersparnis,
- Schonung der Umwelt – Verringerung der zum Einsatz zu bringenden Chemikalien und Energieersparnis,
- Höhere Investitionskosten stehen niedrigen Betriebskosten gegenüber,

Kein anderes, auf dem Swimmingpool – Markt zugängliches Filtermedium weist eine 3 -Stufen-Filtration in einem Prozess auf: mechanische Filtration + Oberflächenabsorption + chemische Absorption.