



ZEOLITE KEY ROLE IN HEALTHCARE & WATER TREATMENT

YOUR SOURCE FOR HIGH-QUALITY NATURAL ZEOLITE

Agriculture Green Zeolite Co. is a Jordanian company that specializes in extracting and mining high-quality natural zeolite sourced from our mine in northern Jordan and delivering this premium product to our customers within and beyond Jordan.

Zeolite is a valuable mineral known for its unique physio-chemical properties that have proven its effectiveness in almost all sectors: plant and animal production, water purification, fish farming, and various industrial and medical fields. Being a safe, sustainable, and cost-effective mineral, it has gained significant attention in the past years as it is considered an effective alternative solution to address the various challenges faced by the aforementioned sectors.

ZEOLITE IN HEALTHCARE

1. Detoxification and Antioxidant Action

Zeolite is one of rare minerals that is capable of attracting negatively charged toxins and free radicals, which allows our body cells to function and repair themselves optimally. Over time, the efficiency of the antioxidant network in our bodies may deteriorate, thus cells start mutating and causing cancer or creating tumors. Zeolite becomes part of an antioxidant network of our body, thereby breaking the chain of reactions causing oxidative damage and increasing oxidative stress.

2. Elimination of Heavy Metals

Our exposure to environmental pollution causes the introduction of certain poisonous heavy metals in our bodies, thereby causing their abnormal accumulation in our organs and tissues. These heavy metals degrade the liver's ability to metabolize such compounds and carry out body purification or detoxification optimally. However, zeolite with a high affinity to trap such metal compounds, has a huge effect in reducing the risk of developing certain cancers and heart ailments caused by such metal depositions in our body.



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3. Strengthening the Immune System

The lymphatic fluid which carries the protective lymphocytes and the leukocytes (white blood cells) plays a vital role in the immune system's communication process including detecting, hindering/engulfing/killing and eliminating various potent pathogens, mutagens, antigens, and carcinogens (including damaged cells.) Zeolite with antiviral and detoxification activity helps in eliminating such harmful substances and preventing their associated destructive attacks.

4. Enhancing Brain Health

Oxidative damage is the major cause of life-threatening strokes. Zeolite being an antioxidant can prevent such devastating events to a great extent by becoming an integral part of the "antioxidant network" formed by vitamins A, C, E, and selenium in our body.

5. Balancing Gut pH Levels

Zeolite helps rectify the overall buffering effect of our body fluids by optimizing ion exchange, thereby regulating the pH to near-physiological levels.

Which supplement we should purchase, powdered or liquid zeolite supplements? The answer lies in the size of the particles of the formulation. The particle sizes in the liquid formulation are usually around 2 microns (Nano-sized) or even less. These nanoparticles have the potential to cross the blood-brain barrier easily and provide a thorough detoxification of our body including the brain. While most of the powdered supplements of this mineral compound that contain comparatively larger particles have the ability to detox only the gut. Moreover, being smaller in size, liquid zeolite particles get readily absorbed in the bloodstream in comparison to the powdered ones containing larger particles.



ZEOLITE ROLE IN WATER TREATMENT

Powerful Properties for Effective Purification

1. Removing Contaminants from Drinking Water

Natural zeolites excel at removing harmful contaminants from drinking water. With their cation-exchange selectivity, they can selectively remove radioactive cations like Cs^+ and Sr^{2+} and heavy-metal cations like Cu^{2+} , Cd^{2+} , Zn^{2+} , Ni^{2+} , and Pb^{2+} . By harnessing their ion exchange capabilities, natural zeolites ensure the targeted removal of specific pollutants, resulting in cleaner and safer drinking water.

2. Enhancing Ion-Exchange and Filtration Bed Efficiency

Natural zeolite has an effective role in filtration processes due to its unique properties, represented by the large surface area, which is higher than other filtration media like sand. This increased surface area provides additional capacity for the adsorption of suspended solids, microorganisms, and other dissolved materials. By incorporating zeolite into the filtration process, it acts as a powerful adsorbent for improved removal of impurities, resulting in enhanced water clarity and quality.

Zeolite can serve as a habitat for nitrifying bacteria that convert ammonium ions (NH_4^+) to nitrate ions (NO_3^-). Thus, zeolites not only provide effective filtration but also contribute to water purification through the removal of ammonium ions and the subsequent conversion of NH_4^+ to NO_3^- .

3. Grey Water Treatment

The unique matrix of contaminants present in greywater treatment sets it apart from other wastewater types. Greywater composition can vary significantly depending on the source, It's generally less polluted than municipal wastewater. However, it contains higher chemical and microbiological contaminant levels which tend to proliferate within greywater systems' collecting, treatment, and distributing pipelines. The potential use of natural Zeolite in greywater treatment can help address these challenges by effectively adsorbing and removing chemical pollutants and certain microorganisms, thus improving the quality of treated greywater.



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Key Advantages of Natural Zeolite Over Other Water Treatment Approaches

- *Cation-exchange selectivity allows for the targeted removal of specific contaminants, that is not easily achievable with conventional methods.*
- *Chemical, physical, and thermal stabilities make it reliable and long-lasting in water treatment systems.*
- *pH stability enables Zeolites to perform optimally in various pH environments.*
- *Enhanced filtration efficiency as Zeolite act as potent adsorbent, capturing a wide range of impurities and surpassing traditional filtration methods*
- *Zeolite can be regenerated and reused, enhancing its cost-effectiveness and sustainability in water treatment applications.*