



DECONTAMINATION

FUKUSHIMA and ZEOLITE

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## Fukushima: Zeolite and Decontamination

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The main problem with the currently collapsing Fukushima Daiichi mega nuclear site is the radioactive particles contamination worldwide, and especially in Japan. This is a long-term and very long-term contamination of the soil, water and air, which is linked to a multitude of dispersed emitters generating radioactivity from the radionuclides (or radioisotopes) that make up the particle. [\[interview of the leading expert Hirose Takashi\]](#)

Whereas Tchernobyl and Fukushima are two major nuclear catastrophes, one of their differences is meaningful: contrary to Tchernobyl, located in Ukraine, Fukushima is in Japan. The values, the innovation and the drive to win associated with the Japanese "genius" are causing totally unexpected findings. For the last few days, the Japanese media have been mentioning a word hitherto unknown to the public: zeolite, a mineral currently undergoing test phase in the ocean and on the ground, in order to... decontaminate – though *absorb* would be more like it.

Who, except geologists, knows about zeolite? Who knows about the encyclopedia-long list of properties of the 48 different known natural forms of zeolite?

The [Wikipedia article](#) about zeolite tells us that "**zeolites are microporous**, aluminosilicate minerals commonly used as commercial adsorbents." It has a negatively charged tridimensional framework because the silicon is replaced by aluminum in the [tetrahedrons](#), and that is compensated by cations (positively charged ions) **in the cavities of the structure** (K, Na, Ca, Ba, Li...)."

Since ionizing radiations, notably X and gamma rays, are electromagnetic fields, it's easy enough to understand how zeolite can positively interfere with ionic exchange mechanisms.

For a more complete approach of what we know about paramagnetic zeolite with an unusual structure and how it can be used, we strongly advise you to read two of Dominique Guillet's recent articles on KOKOPELLI (in French): "[Détoxification par les zéolites](#)" and "[Les poudre de roches de la classe des zéolites](#)".

On the field in Japan, the TEPCO operator of the Fukushima Daiichi nuclear site has started to immerse bags filled with zeolite into the ocean near the nuclear power plant. They hope to absorb as much of the radioactive cesium contamination as possible, notably cesium 137, whose half-life is about 30 years.

Currently under test phase: ten 100-kilogram (220-pound) bags of zeolite crushed into sand have been dropped off by TEPCO. They plan to increase the quantities and to carry out regular samplings in order to check the mineral's radiation harnessing a real value.

At the same time, the NHK Japanese television channel broadcasted a report about the first experiments that will be carried out as an attempt to decontaminate the soil. One of the tested methods is flooding not only the paddyfields, but also the surfaces in general, by setting up drainage canals containing zeolite, in order to absorb the radioactive materials.

Nonetheless, the current problem is that 3, or even 4 collapsing reactors in the Fukushima Daiichi nuclear power plant are spewing out a whole range of radioactive particles into the atmosphere, and highly radioactive discharge into the subsoil and the ocean.

Regrettably, this situation, which could endure or most probably get worse, currently cancels out all these praiseworthy, groundbreaking decontamination experiments for the recovery of the soil.

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[\[French version\]](#) Translation Marianne and Jean-Luc.