

THE THEORETICAL IMPACT HOW MICRO-ENCAPSULATION COULD AFFECT THE EARTH AND ITS OCEANS

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Abstract: Micro encapsulation is a technology and process in which chemical substances are introduced into an environment by the use of microcapsules the process has been known at least since the 1970's and in the 1980's when serious environmental impact due to petroleum spills on land and also Earth's oceans, ravaged Earth's oceans like the Exxon-Valdez oil spill near Alaska. However, today's current micro-encapsulation technologies lack the technological rapid advancements and prowess they exhibited in the 1980's, and do not address the current and future cellular, molecular and even atomic structural applications of the polluted conditions seen in Earth's soils and oceanic conditions, in order to address the pollution problems at these levels to help eradicate the affects of pollution at these levels which could affect all life, soil, and oceanic conditions on Earth.

Key words: Micro-encapsulation, pollution, soil, oceans, pollination.

1 Affects of Pollution Upon Earth's Soil Conditions in the Use of Herbicides and Pesticides

This paper first refers to Sopeña [3] which discusses the use of herbicides and pesticides in the treatment of pest infestation on crops of food around the world. Where in when all of the factors are considered that the release of

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herbicides and pesticides into the treatment of pest infestation is generally of a psychological state of mind, for some reason human beings believe the more pesticides that are placed on crops the better it is to keep away infestation. However, what is not fully recognized and realized is that over treatment of pesticides on crops permeates itself and leaches down into the Earth's soil and may also affect other criteria such as Earth's fresh water supply, and soil conditions for future crops of food needed, which is a necessity for mankind to survive. For instance; Ramesh reports results [1] about how the use of micro encapsulated alachlor are at time contradictory because its affects vary greatly depending on the variable experimental conditions of the scientific study used, and the polymer system employed for attaining the alachlor micro-system and it's application to weeds varies too much to depend on a balanced ecological impact to the Earth's soil in such situations.

However, system employed for attaining the alachlor micro-system and it's application to weeds varies too much to depend on a balanced ecological impact to the Earth's soil in such situations. However, this not only affects soil conditions on an earth wide basis because of because of the international use of herbicides and pesticides in the world's food supply, but when it rains the eventual seepage into fresh ground water supplies can be devastating, and the run-off of these pesticides into lakes, streams, rivers, eventually also find their way into earth's oceans as well.

In the observation, study, and experimentation of using micro-encapsulation especially in the production of pesticides microsphere production and characterization encapsulation efficiency (EE) and loading of the pesticide in the microsphere were calculated. However, the use of an scanning electron microscope (SEM) was employed and sieving of the micro spheres was accomplished by sieving into several categories of ISO standard sieves. Later tests were implemented to see and determine how the micro-encapsulated pesticides affected the soil sample and tests derived from that were able to determine that the use of alachlor has a strong persistent affect upon soil conditions.

2 Micro-encapsulation of Natural Compounds Instead of Synthetic Micro-encapsulated Chemical Constituents

The Colony Collapse Disorder (CCD) Steering Committee consists of scientists from the Department of Agriculture's (USDA), Agricultural Research Service (ARS), National Institute of Food and Agriculture (NIFA), Animal Plant Health Inspection Service (APHIS). Who correspondingly combined their scientific and analytical resources together to bring about some of the finest minds in these governmental and scientifically based organization to solve the ever growing problem that pesticides and herbicides cause more and more pollution to not only the soils, groundwater, and eventual runoff into the oceans, but all of these U.S.A. agencies concur the introduction and use of more and more naturally based pesticides should be pursued to try to combat the pollution problem.

3 Discussion and Conclusion

Ramesh [1] also reports that the accumulation of the pesticide alachlor in fish in both fresh and saltwater conditions as would be found in the oceans and seas as well. There are many micro-encapsulation examples that could be given as presented and aforementioned in this paper. However, it does not appear that today there is an alternative to the problems associated with micro-encapsulation except for the introduction of new technologies that may be able to introduce new alternative solutions.

One of these in two new technologies in micro-encapsulation instead is entitled nano-encapsulation. Which would be where chemical substances are introduced into an environment by the use of nano-sized-micro-capsules. Which would be able to deliver in theory nano encapsulated spheres down to the molecular level. Whereas pico-encapsulation would be the next generation of encapsulation down to the size of a mere atom at the atomic level.

Theoretically, if such technologies could be attained the control of the residual levels of pollution that micros-encapsulation cannot address would seem in theory to be able to help solve the trace amounts and residual affects of pollution down to the smallest levels of microscopic scale measurement that in all likeli-hood that the laws of physics would allow.

It is here that in Pico-Encapsulation would of course have to be developed and eventually manufactured under microscopic instrumentation much more powerful than an SEM, transmission electron microscope (TEM) and even any of the six available super-microscopes on the earth today. Whereas the Ångström Microscope (AM) would be the only known microscope capable of performing these kinds of advancements in these encapsulation technologies. As stipulated in reference [2], this paper discusses recent advancements in development of nano-encapsulation is not just a theory, but ha actually become a reality. Where a novel delivery system wherein conventional configures new delivery modalities in the macro, micro, nano and pico scales-ranges. More will be written on this technology in future papers. However, the nano-encapsulation system will use natural and not synthetic compounds in its nano-encapsulation delivery system.

3.1 Acknowledgements

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