

The Life Cycle of Nanomaterials; Current legislation and waste management issues

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The exponential growth in the use of engineered nanomaterials in consumer products has raised discussion about their health and environmental safety. The data gained from the studies so far is diverse and dispersed which makes it hard to make a proper evaluation of nanomaterials' environmental effects. Because of the lack of nano specific legislation the mandatory obligations are hard to find and obey. The manufacturers of nanomaterials face these problems every day. One still somewhat neglected issue is the problem of the waste containing nanomaterials, nanowaste. At the moment there are no instructions or legislation on handling nanowaste and no monitoring system to follow the nanoparticles containing products during and in the end of their life cycle. Thus, most of these materials sooner or later end up in normal waste handling processes. The shortage of data on quantities and qualities of nanowaste as well as the lack of classification system for it makes the management of nanowaste challenging. The current awareness and approaches on handling nanomaterials by the Finnish, Portuguese, Spanish and Romanian companies working with nanomaterials have been charted and the results imply that there is demand for more open discussion on the topic.

Current EU legislation has only few nanospecific directives. The ongoing debate is that is more nano-lex needed or would it be enough to update the current legislation to cover nanomaterials and –technologies? The legislation is developing fast and around the Europe a lot of effort is put on developing sufficient analysis methods for measuring the environmental impacts of different nanomaterials. For companies working with nanomaterials a database covering the current legislation and possible analysis/characterization methods would be beneficial for them to stay up to date with what is going on on the legislative sector as well as for minimizing the environmental impacts of their activities.