

Commercializing Graphene for Everyday Use: The Critical Role of Regulation

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Abstract

The historical challenge for the commercialization of graphene has always been about how to produce it at large volume and at low cost. The graphene players fascinated by its unique performance often forget that the industrial adoption of graphene, like any other new nanomaterial, can never happen if the material is not regulated. The regulatory agencies require very specific toxicological study reports (in accordance to OECD guidelines) to be able to regulate the material. Such studies could cost millions of dollars and impede many graphene producers from fully engaging in the exhausting regulatory activities. In 2020, NanoXplore Inc. completed five major studies on acute inhalation, dermal sensitization, dermal irritation, in-vitro gene toxicity and in-vivo gene toxicity on a few-layer graphene in accordance with OECD 436, 406, 404, 473 and 474-489, respectively [1]. The results revealed much lower health risk than what were usually anticipated for graphene.

REFERENCES

- [1] N. Moghimian, S. Nazarpour, *Crystals*, 10 (2020) 718.