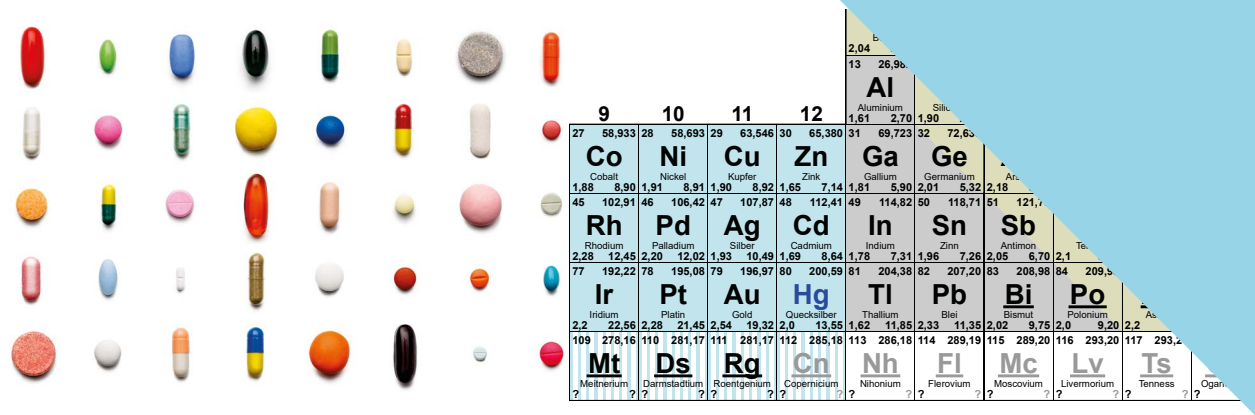
ICH Q3D Elemental impurities



Elemental impurities in phytopharmaceuticals - Risk assessment and analysis

Background

ICH Guideline Q3D on elemental impurities outlines a process for the evaluation of toxicity data for potential elemental impurities, the establishment of a permissible daily exposure (PDE) level for each element of toxicological concern, and the application of a risk-based approach to control such impurities in medicinal products. European Pharmacopoeia (Ph. Eur.) monograph Pharmaceutical Preparations (2619) and the statements made in the "Questions & answers on quality of herbal medicinal products/traditional herbal medicinal products" (EMA/HMPC/41500/2010 Rev.6) make it clear that a risk-based control strategy for elemental impurities must also be available for herbal medicinal products. The second revision of ICH Guideline Q3D, with corrections for nickel, gold and silver in Appendices 2 and 3, has been in force since September 2022. Furthermore, the new Appendix 5 has also introduced specific limits for topical and transcutaneous medicinal products with effect from 24 September 2022.

Strategic evaluation

There are two different approaches, which may be adopted for a risk assessment:

1. An evaluation of the components used, including materials, equipment and packaging materials throughout the manufacturing chain.
2. A product-specific approach based on analytical data of representative batches.

If the level of an elemental impurity is not below the threshold of 30% of the PDE consistently, a monitoring strategy must be established to ensure that the level in the daily dose does not exceed the PDE level.

Analysis

ICH Guideline Q3D divides the listed elements into four categories according to toxicity and probability of occurrence. PhytoLab deploys a multi-element method by means of inductively coupled plasma mass spectrometry (ICP-MS) for product-specific screening of these elements and to monitor elements, which have been assessed as being critical. ICH-compliant validation documentation is available and PhytoLab offers product-specific method verification procedures as and when required.

Risk assessment

The experts in our Medical Affairs team perform guideline-compliant risk assessments and give you support for the re-evaluation of your topical medicinal products in accordance with Appendix 5. In this context, particular attention must be given to the sensitising elements nickel and cobalt, for which lower PDE levels have been defined than for Oralia.

We would be happy to advise you and create an individual offer for the evaluation and analysis of your products. Contact us:

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