Palladium(II) di(4-oxopent-2-en-2-oate): Classification for Skin Sensitisation Potential

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Under Article 5 of the CLP Regulation, relevant available information for the purposes of determining whether a substance entails a physical, health or environmental hazard shall be identified. This includes data generated, or information from human epidemiological, occupational or accident databases. In addition Article 9.3 states that where the criteria cannot be applied directly to available identified information, manufacturers, importers and downstream users shall carry out an evaluation by applying a weight of evidence determination using expert judgment in accordance with section 1.1.1 of Annex I to this Regulation, weighing all available information having a bearing on the determination of the hazards of the substance or the mixture, and in accordance with section 1.2 of Annex XI to Regulation (EC) No 1907/2006.

The substance **Palladium(II) di(4-oxopent-2-en-2-oate)** has been assigned to the Pd II Category of palladium substances on the basis of oxidation state since the speciation and behaviour of the metal components of the substances in environmental waters and biological fluids is likely to be similar for compounds with the same oxidation state. It is therefore appropriate to read-across toxicological and other relevant data within members of the Category. In addition there is no harmonised classification for palladium substances in Annex VI of the CLP Regulation.

From the wca/bibra Phase II report (ADD VERSION and DATE), it can be summarised that there is an extensive database, from both human and laboratory animal studies, on sensitisation in relation to exposure to soluble palladium ~~metal and its~~ compounds. For example, Palladium dichloride, a member of the Pd II category, has been shown to be a potent sensitiser in guinea pigs. Human patch testing with palladium dichloride (24/48-hr covered contact with 1% or 2% in petrolatum or water) has become increasingly standard practice at contact dermatitis clinics. Such patch testing has elicited allergic skin reactions in proportions of patients tested.

There is no data publicly available on the skin sensitisation potential of **Palladium(II) di(4-oxopent-2-en-2-oate)** itself, or for several other substances in this Category. On the other hand, two substances in the Pd II category (ADD NAMES OF BOTH SUBSTANCES AND INDICATION OF SOLUBILITY – DIFFERENCE MAY BE DUE TO SOLUBILITY PROFILE) showed no evidence of sensitisation in the guinea pig maximization test (Klimisch 1). Only data submitted to wca or bibra, or obtained by literature searches, has been included in this review.

~~The common elicitation of allergic skin reactions to palladium has led to the suggestion that some apparent responses to palladium compounds may have been due to solution~~

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~~contamination with nickel, a known allergen with wide exposure. However, recent investigations showed the nickel contamination levels to be extremely low (where specified, <0.2-<20 ppm) and that these levels were unlikely to provoke other than a very rare reaction in a nickel-sensitive patient.~~

~~Other evidence suggests that reactions to palladium may be indicative of cross-reactivity with nickel. Nevertheless, some individuals have been observed with palladium-positive and nickel-negative patch test results. Certain investigators suggest that the co-existence of palladium and nickel sensitivities is probably due to genuine palladium sensitivity and the co-occurrence of the two metals in alloys.~~

The ECHA Guidance on Information Requirements and Chemical Safety Assessment, Chapter R.7a provides an Integrated Testing Strategy for sensitization assessment. The key aspects of this are:

1. Gather and evaluate existing information (human-, animal-, *in vitro*-, (Q)SAR, read across and chemical category data) on skin sensitisation according to Annex VI, step 1.

2. Does available information provide sound conclusive evidence indicating that the substance is a skin sensitiser or non-sensitiser?

3. Consider classification for skin sensitisation or justify if no classification is considered necessary based on conclusive data.

On this basis, there is sufficient information to indicate that soluble substances in the Pd II group could be considered as dermal sensitisers and classified as such, unless there is conclusive data available to justify no classification.

Since there is no conclusive data available to demonstrate no sensitisation potential for **Palladium(II) di(4-oxopent-2-en-2-oate)**, then a default classification as a sensitiser is appropriate based on the Category information available and in accordance with the requirements of the CLP Regulation. On the basis of acceptance of this classification, there is no necessity to perform a study in vertebrate animals (mouse local lymph node assay).

Skin sensitization, category 1. H317: May cause an allergic skin reaction. P261, 272, 280

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