

EXECUTIVE SUMMARY:

IFF is seeking approval for a “Prolyl oligopeptidase (EC 3.4.21.26)” enzyme for use as processing aid in brewing application. The enzyme is designated as “Prolyl oligopeptidase” throughout the dossier.

The enzyme Prolyl oligopeptidase is derived from a selected non-pathogenic, non-toxicogenic strain of *Trichoderma reesei* which is genetically modified to express the Prolyl oligopeptidase gene from *Aspergillus niger*.

The enzyme is intended for use in the production of brewed beverages. In brewing, Prolyl oligopeptidase performs its function typically during the fermentation step of the brewing process.

In all of these applications, Prolyl oligopeptidase will be used as a processing aid where the enzyme is either not present in the final food or present in insignificant quantities having no function or technical effect in the final food.

To assess the safety of the Prolyl oligopeptidase for use in these applications, IFF vigorously applied the criteria identified in the guidelines as laid down by Food Standards Australia New Zealand (FSANZ) and U.S. Food and Drug Administration (FDA) utilising enzyme toxicology/safety data, the safe history of use of enzyme preparations from *T. reesei* and of other enzymes in food, the history of safe use of the *T. reesei* production organism for the production of enzymes used in food, an allergenicity evaluation, and a comprehensive survey of the scientific literature.

In addition, different endpoints of toxicity were investigated, and the results are evaluated and assessed in this document. In genotoxicity studies, Prolyl oligopeptidase is not mutagenic, clastogenic or aneugenic. Daily oral administration of Prolyl oligopeptidase up to and including a dose level of 1000 mg TOS/kg bw/day does not result in any manifestation of systemic, hematologic, or histopathologic adverse effects.

Based on a worst-case scenario that a person is consuming Prolyl oligopeptidase from a brewed beverage, the calculated Theoretical Maximum Daily Intake (TMDI) will be 0.31 mg TOS/kg body weight/day. This still offers a 3226-fold margin of safety.

Based on the results of safety studies and other evidence, Prolyl oligopeptidase has been demonstrated as safe for its intended applications and at the proposed usage levels. Approval of this application would provide manufacturers and/or consumers with benefits of facilitating the brewing process.