Following a request from the European Commission, the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) was asked to deliver a scientific opinion on the safety of astaxanthin-rich ingredients AstaREAL A1010 and AstaREAL L10 as novel food ingredients (NFIs) in the context of Regulation (EC) No 258/97. The NFIs are produced from astaxanthin-rich alga Haematococcus pluvialis. Astaxanthin content is 5.0–5.6 % in AstaREAL A1010 powder, 10.0–12.0 % in AstaREAL L10 oil and 2.5–2.7 % in AstaREAL L10 encapsulated oil. Sufficient information was provided regarding the composition, specification, manufacture and stability of the NFIs. The NFIs are intended to be used in fermented liquid dairy products, non-fermented liquid dairy products, fermented soya products and fruit drinks for healthy adults. The applicant recommends a maximum consumption of astaxanthin from the NFIs of 4 mg/day. Mean and high-level (95th percentile) daily intakes of 0.106 mg/kg bw and 0.256 mg/kg bw astaxanthin from the NFIs were estimated, based on European consumption data of the proposed food categories. The consumption of the NFIs is not considered to be nutritionally disadvantageous. There are no safety concerns regarding genotoxicity. There is no indication from the available toxicological data that the NFIs would be more toxic than astaxanthin. Therefore, the Panel bases the evaluation of the NFIs on the acceptable daily intake (ADI) of 0.034 mg/kg bw for astaxanthin derived by the FEEDAP Panel. The Panel notes that the maximum recommended intake of 4 mg astaxanthin per day (0.06 mg/kg bw) and the estimated mean intake based on the use levels in the proposed food categories (0.106 mg/kg bw per day) exceed the ADI by approximately two- and three-fold, respectively. The Panel therefore concludes that the safety of the NFIs at the proposed use and use levels has not been established.