Primary aromatic amines (PAA) are chemical compounds, of which some are carcinogenic and allergenic, while others of these compounds are suspected carcinogens. PAA may arise in materials intended for food contact as a result of the occurrence of impurities or degradation products of e.g. aromatic isocyanates used in lacquers and adhesives in azocoulorants.

According to the regulation on plastics EC 10/2011:

'Plastic materials and articles shall not release primary aromatic amines, excluding those appearing in Table 1 of Annex I, in a detectable quantity into food or food simulant. The detection limit is 0.01 mg of substance per kg of food or food simulant. The detection limit applies to the sum of primary aromatic amines released’

Since July 1st 2011, an additional EU regulation has come into place, which states that each consignment of polyamide (nylon) kitchen utensils from China and Hong Kong shall be accompanied by appropriate documentation, including analytical results showing that it meets the requirements concerning the release of primary aromatic amines.

25 samples of black nylon kitchenware each of three articles were tested for migration of primary aromatic amines (PAA), using 3% acetic acid as food simulant at an exposure temperature of 100°C and time from ½-4 hours, depending on the foreseeable use of the utensil. The samples were collected by the Norwegian Food Safety Authority at importers and retail shops.

Of the 20 PAAs analysed, four PAAs were detected, being aniline (ANL) in 11 samples (0.6-2.3 μg/kg), 4,4'-Methylenedianiline (4,4'-MDA) in 11 samples (0.6-14μg/kg), 2,4-Toluenediamine (2,4-TDA) in one sample (2.3 μg/kg) and 2,4-Dimethylaniline (2,4-DMA) in one sample (0.45 μg/kg).

11 samples did not contain PAAs, 14 samples contained PAAs, where the sum (ΣPAA), however did not exceed the specific migration limit of 10 μg/kg food simulant after the expanded uncertainty is subtracted from the sum of PAA. The highest content of ΣPAA migrants was from a frying spatula originating from China containing ΣPAA of 16.0 μg/kg before correction for expanded uncertainty, however after correction the content of 9.7 μg/kg was compliant.