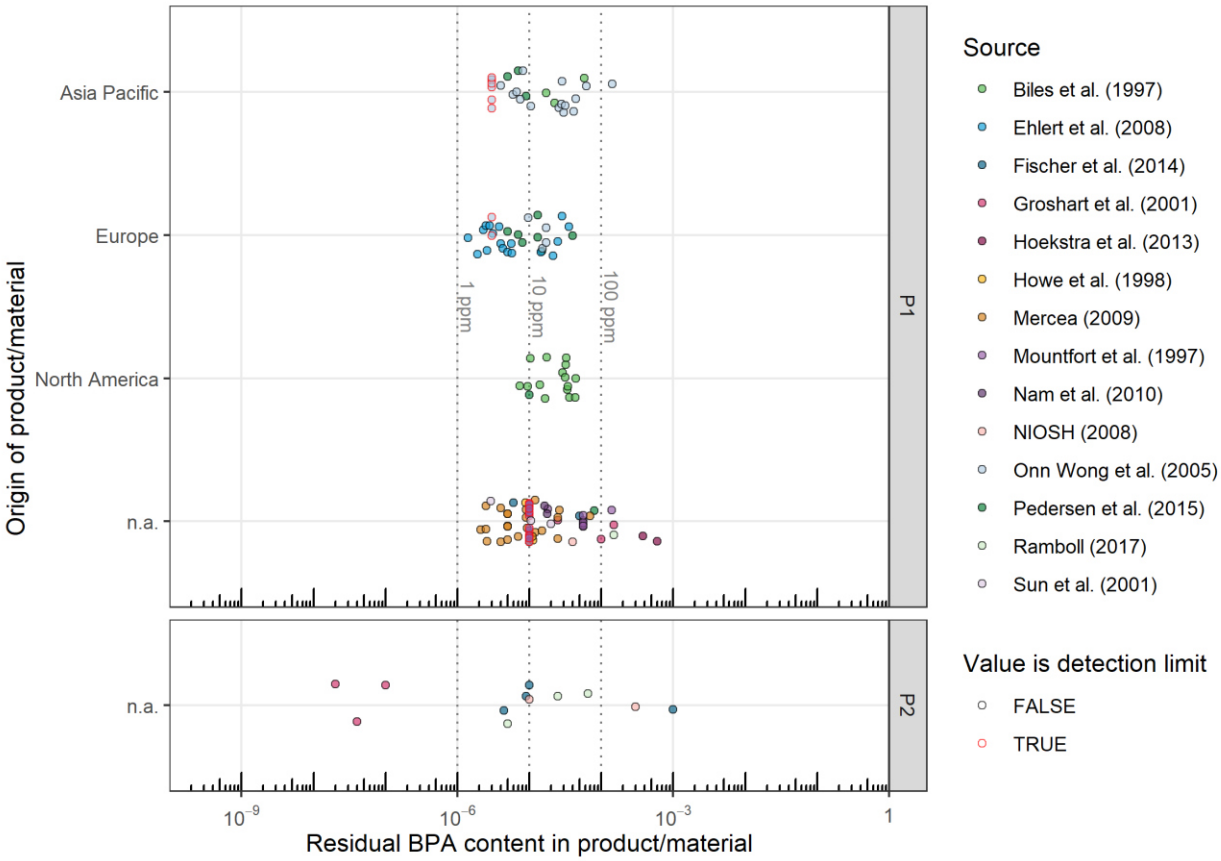
3.3.8 Residual BPA contents

As pointed out in 5.1.5.7, ascribing the fraction of measured BPA emissions from BPA-based polymers to either residual or polymer-bound BPA is not necessarily clear-cut and straightforward. Nevertheless, data was extracted whenever any of the identified sources provided information on the residual BPA as an amount of BPA per amount of product. Thus, most of the extracted values result from studies where the authors state that the results represent estimates of the residual BPA content of the respective polymer. It must be kept in mind, however, that the methods differ between studies and some of the extracted data are not study results at all but based on statement from the industry. Nevertheless, Figure 21 shows that most measurements for residual BPA in P1 and P2 lie below 100 ppm. These findings are thus in (more or less) in agreement with the statements in e.g. Fischer B; Milunov M; Floredo Y et al. (2014) that the residual content in P1 is typically < 10 mg/kg (i.e. < 10 ppm) or in EC JRC (2010) where it was reported by industry that there is a maximum of 100 ppm residual BPA in P1.

Figure 21: Extracted data on residual BPA content in BPA-based polymers



For every BPA content reported as non-detectable, the detection limit of the respective detection method was assumed instead - these values are shown as circles with a red outline and may thus in reality be lower than displayed. Sources: Biles JE; McNeal TP; Begley TH et al., 1997, Ehlert KA; Beumer CW; Groot MC, 2008, Fischer B; Milunov M; Floredo Y et al., 2014, Groshart CP; Okkerman PC; Pijnenburg AM, 2001, Hoekstra EJ and Simoneau C, 2013, Howe SR and Borodinsky L, 1998, Mercea P, 2009, Mountfort KA; Kelly J; Jickells SM et al., 1997, Nam S-H; Seo Y-M; Kim M-G, 2010, NIOSH, 2008, Onn Wong K; Woon Leo L; Leng Seah H, 2005, Pedersen GA; Hvilsted S; Højslev Petersen J, 2015, Ramboll, 2017, Sun Y; Wada M; Kuroda N et al., 2001

There were further sources that provide information on this matter, but were not directly transferrable to be used in Figure 21. Ali M; Jaghbir M; Salam M et al. (2019) found 0.04 ± 0.07 ng residual BPA / ml 50 % ethanol in water after shaking the solution inside 15 P1 baby bottles