Kjaerstad et al, 2010

Guidelines/Criteria	
Reference:	Kjaerstad MB, Taxvig C, Andersen HR, Nellemann C. 2010. Mixtures effects of endocrine disrupting compounds *in vitro*. Int J Androl 33:425-433.
***In vitro* Study Type** Route of Administration Species & age of animals	AR reporter gene assay + steroid synthesis assay
Study Duration	
Type of Mixture Binary >2 components Similar acting or dissimilar What Mode of Action was investigated?	 3 and 4 3x strong AR-antagonists, model compounds, 5x weak AR-antagonists (parabens), 3x azole fungicides. AR-transactivation, steroid biosynthesis (only azoles).
Parameters/End points Measured Target organs/Critical effects Pharmacological changes or adverse effects *In vitro*	 AR-transactivation, steroid biosynthesis (only azoles).
Individual Components Characterisation of individual compounds Name, exact chemical name, CAS no. Were dose responses established for individual components? Were no effect levels established? Were doses below the NO(A)ELs investigated?	 epoxiconazole (135319-73-2 propiconazole (60207-90-1) yes for azoles in AR-assay; in steroid synthesis assay, only equimolar mixture was tested in different dilutions. yes, by extrapolation no (yes only for parabens as they do not act as AR-antagonists below cytotoxic concentrations)
Mixtures Investigated Number of dose levels How does the mixture make-up compare to individual components? (e.g. low dose) equivalents used?) No. of technical replicates per exposure condition (*in vitro*) No. of animals per dose group (*in vivo*)	 5 to 12 equimolar mixtures, micromolar concentrations 4
Observations/Findings	
Overall opinion (e.g. sufficient numbers of groups investigated, group sizes adequate, observations reproducible, low dose levels used investigated)	 Mixtures tested were equimolar instead of consisting of equipotent concentrations. Only additivity observed.