

## Bisphenol A (CAS no. 80-05-7)

[Current status]

Finished Tier 2 *In vivo* tests



### Results of Reliability Evaluation (based on literature information)

Suggested Effects							
Estrogenic	Anti-estrogenic	Androgenic	Anti-androgenic	Thyroidal	Anti-thyroidal	Ecdysone	Others*
P	P	P	P	-	P	-	P

P: Effects suggested by existing information

-: Effects NOT suggested by existing information

\*Others: Hypothalamic-Pituitary-Gonad Axis etc.

\*\* : Effects suggested by USEPA EDSP

### Results of Tier 1 *in vitro* tests

Tested Mode of Actions							
Estrogenic	Anti-estrogenic	Androgenic	Anti-androgenic	Thyroidal	Anti-thyroidal	Ecdysone	Others*
P	N	N	To be implemented	-	N	-	-

P: EC<sub>50</sub> or IC<sub>50</sub> values were detected

N: EC<sub>50</sub> or IC<sub>50</sub> values were not detected

\*: etc.

To be implemented: Mode of actions selected but not tested yet

-: Mode of actions not selected for testing

### Results of Tier 1 *In vivo* tests

#### Fish Short Term Reproduction Assay (FSTRA: OECD TG229) using Medaka

An increase in male hepatic vitellogenin was recognized, and a significant decrease was observed total number of eggs and fertility rate for female, suggesting adverse reproductive effects on Medaka. However, due to the high mortality rate, it was not concluded in this study.

## **Results of Tier 2 *In vivo* tests**

### **The Medaka Extended One-Generation Test (MEOGRT: OECD TG240)**

Fish were exposed to 28, 93, 330, 1,000, 3,700 µg/L (measured mean concentrations) for 19 weeks. At levels where mortality was not dose-dependent (1,000 µg/L and lower), a significant increase in male liver vitellogenin level was observed. Thus, bisphenol A was identified as estrogenic.

At 1,000 µg/L and higher, a significant decrease was observed in total egg and fertile egg, indicating reproductive toxicity to Medaka. This lowest observed effect concentration (LOEC) was ca. 3,570 times as high as the highest environmental water concentration of 0.28 µg/L that was measured in MOE's Environmental Survey and Monitoring of Chemicals in FY2014.

The exposure level which did not indicate reproductive toxicity to Medaka was 330 µg/L and ca. 1,180 times as high as the highest environmental water concentration of 0.28 µg/L that was measured in MOE's Environmental Survey and Monitoring of Chemicals in FY2014.