

Bisphenol A

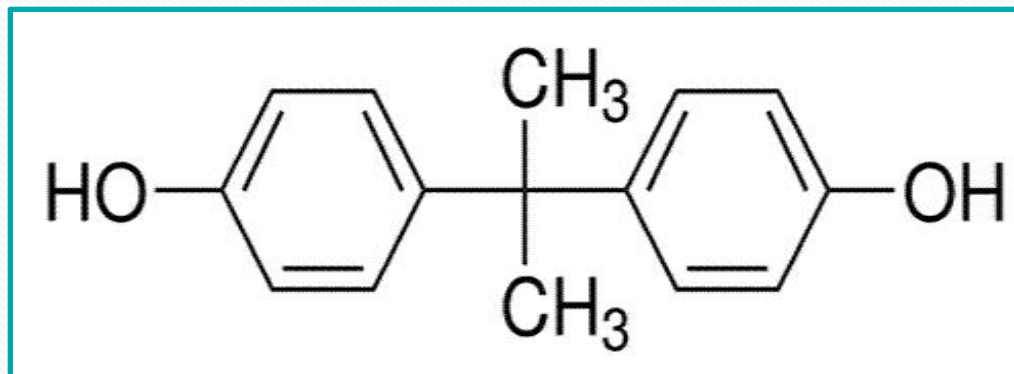
And

Health effects

Environmental Toxins CU Boulder Jun 2013

What is BPA

- BPA is a chemical that is used primarily to make polycarbonate plastic and epoxy resins.
- The synthesis of PBA from Phenol and acetone based on chemical reaction.
- Purity of BPA > 99%
- Chemical formula : $C_{15}H_{16}O_2$



Uses of BPA

➤ Polycarbonate plastic
lightweight substance and has
good temperature and electric
resistance and high performance.
It uses in wide variety of
common products.

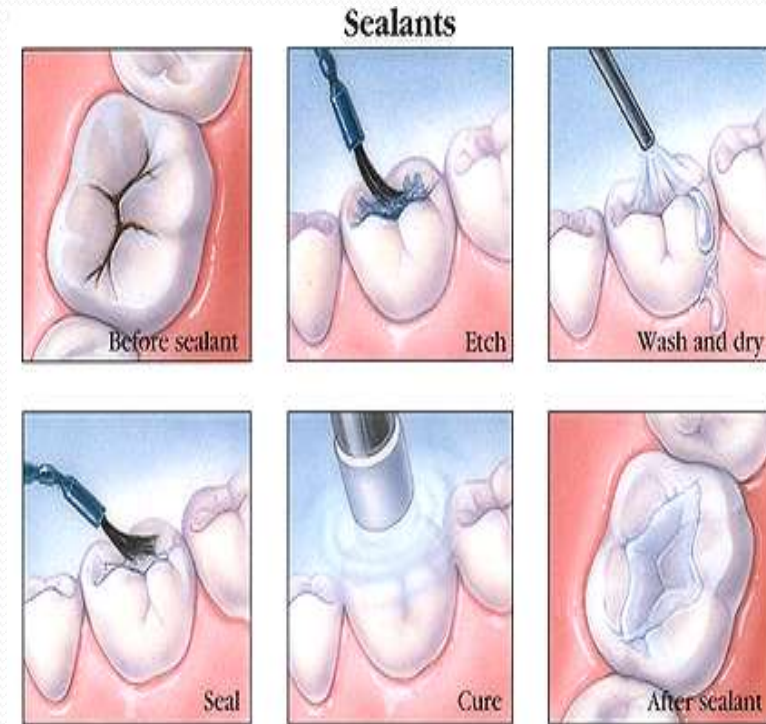


➤ Epoxy resins
It is inert material used
as protective coating.



Uses of BPA

- Dental sealants
 - protective barrier on teeth
 - cement of crown
 - alternative of mercury amalgam



How gets exposure

- dietary food and beverages
- dental sealants
- air, dust and water
- skin contact and inhalation
- occupational exposure

Does

Society of the plastics industry(SPI) estimated daily intake dietary exposurer

- For infants 0.2 – 0.4 $\mu\text{g/kg bw/day}$
- for children 0.1 – 0.2 $\mu\text{g/kg bw/day}$
- Does reference 50 $\mu\text{g/kg bw/day}$

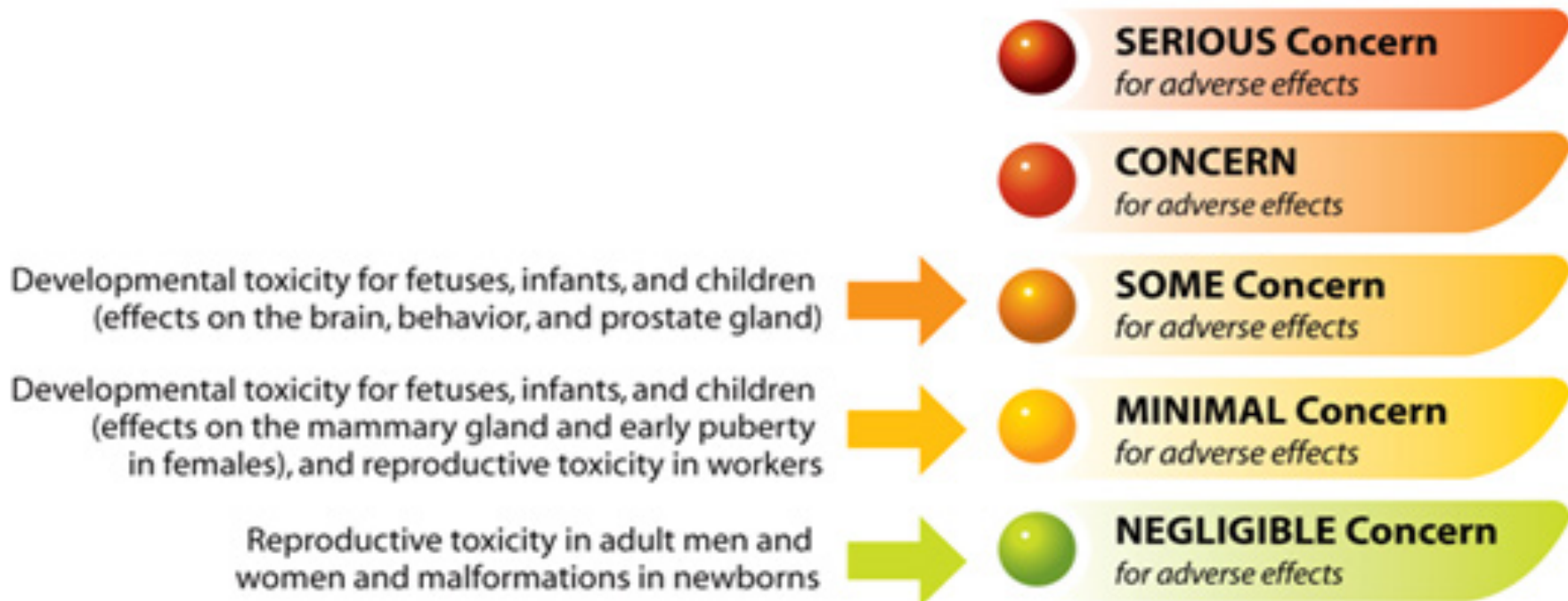
European Scientific Committee for food (SCF) estimated daily intake dietary exposure

- 0.48 – 1.6 $\mu\text{g/kg bw/day}$
- Does reference 10 $\mu\text{g/kg bw/day}$

Concerns

National Toxicology Program Conclusions

NTP conclusions regarding the possibilities that human development or reproduction might be adversely affected by exposure to bisphenol A. The NTP uses a five-level scale of concern:



Prevent exposure

- use baby bottle that free BPA
- don't microwave polycarbonate plastic containers
- use glass, porcelain, or stainless steel containers
- avoid using plastic container with #7 on the bottom
- don't wash polycarbonate container in dishwasher with harsh detergent
- reduce eating canned foods



References

- https://en.wikipedia.org/wiki/Bisphenol_A
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- <http://www.breastcancerfund.org/clear-science/innovative-research/food-packaging-study/fact-sheet.html>
- <http://www.bisphenol-a.org/human/herLowDose.html>
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Questions