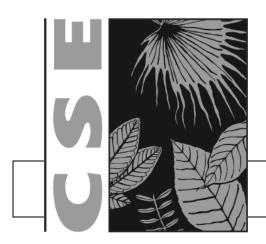
Toxic Toys

15 January 2010



Centre for Science and Environment New Delhi

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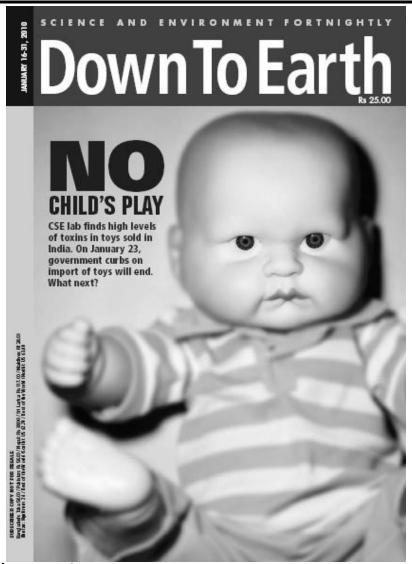


CSE's Pollution Monitoring Lab

 Set up in 2000, with state-of-the-art equipment for testing pesticide residues and other organic and inorganic chemicals, heavy metals and for air pollution monitoring.



Toxic Toys



Centre for Science and Environment



The study

 Presence of <u>phthalates</u> in randomly purchased toys



What are Phthalates?

- Phthalates are organic chemicals, odourless and colourless liquids, produced from petrochemicals
- They are essentially used for making plastics (mainly PVC) soft and flexible.



What are Phthalates?

- Over 20 different types of Phthalates, but <u>six</u> are important from the point of view of toxicity to children.
- These six Phthalates are banned or restricted in toys.
 - Di-2-ethylhexyl phthalate (DEHP)
 - Di-n-butyl phthalate (DBP)
 - Benzyl butyl phthalate (BBP)
 - Di-isonoyl phthalate (DINP)
 - Di-isodecyl phthalate (DIDP)
 - Di-n-octyl phthalate (DNOP)



Health impacts

- Exposure to Phthalates can damage the reproductive system -- premature breast development in females and poor semen quality in men have been linked with phthalates
- Phthalates can trigger asthma and allergies and impair the lungs
- Linked with pre-term birth in humans
- Studies on mammals have also linked some phthalates with increased skeletal retardation and malformations



Health impacts

 Children <u>under three years</u> more likely to be exposed to phthalates because they tend to chew and suck on plastic toys – and since their metabolic, endocrine and reproductive systems are immature, they are more vulnerable as well



Regulations

- No regulations in India and China
- BIS has <u>voluntary standards</u> on toys (IS 9873 part I, II and III). They cover safety aspects and also specify the maximum acceptable levels for eight heavy metals. <u>None covers phthalates</u>.
- European Union and the US have similar regulation -- regulate six most toxic phthalates in toys



Regulations

Group 1:

- Di-2-ethylhexyl phthalate (DEHP)
- Di-n-butyl phthalate (DBP)
- Benzyl butyl phthalate (BBP)

Standard:

 Ban on sale of all childcare articles, toys with over 0.1 per cent concentration by mass of plasticized material of above chemicals



Regulations

Group 2:

- Di-isonoyl phthalate (DINP)
- Di-isodecyl phthalate (DIDP)
- Di-n-octyl phthalate (DNOP)

Standard:

 Ban on sale of toys, childcare articles meant to be <u>placed in mouth by children</u> with concentrations over 0.1 per cent (1000 ppm or 1 gm per kg)



The samples

- 24 toys randomly purchased from different parts of Delhi – <u>especially those toys that</u> <u>children are more likely to chew and suck</u>
 - -Toys put in mouth (Teether etc.): 7
 - Soft squeeze toys: 9
 - Hard rattle toys: 3
 - -Others (dolls etc.): 5
- 15 soft toys and nine hard toys



The samples

- Manufactured in four countries:
 - China (14)
 - India (7)
 - -Taiwan (2)
 - Thailand (1)
- From 19 brands (2 unknown)
- Sample includes major brands like Funskool and Mattel



The methodology

- Tested for 8 Phthalates including six most toxic ones – DEHP, DBP, BBP, DINP, DIDP and DNOP.
- US EPA method <u>8062 A</u> adopted internationally recognised
- GC-ECD used to detect phthalates
- Presence of Phthalates confirmed by <u>GC-MS</u>



- One or more phthalates detected in all toys
- 46 per cent (11 out of 24) samples exceeded the EU and the US limit
- Taiwanese and Chinese toys found to be most contaminated
- The two toys manufactured in Taiwan exceeded the limits (100%)
- 8 out of 14 toys (57%) manufactured in China exceeded the limits



- Only one toy manufactured in India, out of the seven tested, exceeded the limits.
- Worse, the label of toy says: 'non-toxic, suitable for age 3-18 months'
- Many toys in which the claim on labels were fraudulent – no one checks



- Toys put in mouth (Teether etc.): 2/7 exceeded
- Soft Squeeze toys: 6/9 exceeded
- Hard rattle toys: 3 tested, none exceeded
- Others (dolls etc.): 3/5 exceeded
- In totality, 60 per cent of soft toys and 20 per cent of hard toys exceeded the safe limits



- DEHP (1st group) the most toxic phthalate found in 96 per cent samples (23/24). In 3 samples it exceeded the limits (including in one teether: Taiwanese: PIYO-PIYO)
- DINP (2nd group) found in 42 per cent samples (10/24) – in seven samples it exceeded the limits.
- DBP (1st group) found in four samples in one sample it exceeded the limits
- BBP (1st group) found in 3 samples in none it exceeded the limits



Trade Matters

Jan 2009:

 India prohibits import of toys from China on safety and toxicity grounds for six months

Mar 2009:

 Allows imports of Chinese toys if they show independent lab certificate that they meet the Indian standards or international standards (ASTM standards or ISO standard)

June 2009:

 Following threat from China to go to the WTO, India expanded the restrictions to cover toy imports from all countries. This restriction extends till <u>January 23, 2010</u>.



Trade Matters

- However, no system put in place to check that imported toys meet standards. Only self-certification
- Now concern that this is discriminatory and constitutes non-tariff barrier under WTO.
- The government has two options:
 - Either regulate all toys, both domestic production and imports.
 - Second, and the easier option, let the order expire and leave the entire market unregulated,
 endangering the health and safety of children



What we need

- Improve standards, set standards for toxins like Phthalates
- Regulate all toys apply mandatory standards for all toys, domestic and imported
- Set up testing systems to check that toys meet standards
- Government must take health-related product standards seriously
- Not play with our and our children's health