

Toxic Toys

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**Centre for Science and Environment
New Delhi**



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





The study

- Presence of phthalates 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 six 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 under three years 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 voluntary standards on toys (IS 9873 part I, II and III). They cover safety aspects and also specify the maximum acceptable levels for eight heavy metals. None covers phthalates.
- 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 placed in mouth by children 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 – **especially those toys that children are more likely to chew and suck**
 - 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 8062 A adopted – internationally recognised
- GC-ECD used to detect phthalates
- Presence of Phthalates confirmed by GC-MS



The result

- 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



The result

- Only one toy manufactured in India, out of the seven tested, exceeded the limits.
- But this toy manufactured by Funskool (India) Ltd – Pip Squeaks Toy for 3-18 months old – had highest levels of Phthalates. It exceeded the standards by 162 times.
- 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



The result

- 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
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- **In totality, 60 per cent of soft toys and 20 per cent of hard toys exceeded the safe limits**



The result

- 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 **January 23, 2010.**



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**