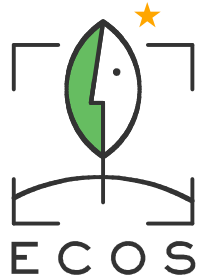


# **The Case against Candle Resistant Electronics**

Stamatis Sivitos, 29.06.2010

ECOS - EFTA Workshop

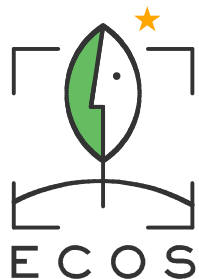




# Outline

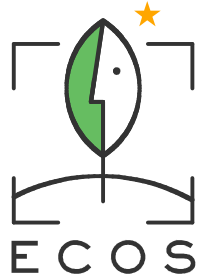


1. IEC 62368 and external ignition requirement
2. Brominated and chlorinated flame retardants
3. Health and environmental impacts
4. ECOS work and results
5. Conclusions



# Background

- New requirement in IEC 62368: Audio/Video, Information and Communication Technology Equipment -Safety - Requirements
  - **external housing of electronics would have to withstand a three-minute contact with a candle flame without catching fire.**
- Initiated by the U.S. National Association of State Fire Marshals - supported by the Alliance for Consumer Fire Safety in Europe (ACFSE), front group for the bromine industry (secretariat by Burston Marsteller)...
- Justification: an extraordinarily large number of TV fires in the 1990s in a suburb of Stockholm. A statistical outlier used to predict the expected fire rate in all of Europe and beyond...
- The proposed requirements were not designed to protect against fires the size of a wastebasket or larger, only a candle flame!



# Views of US organisations

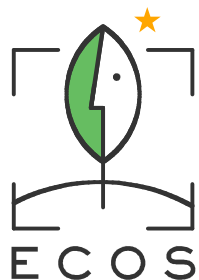
Study by John Hall, NFPA, 2002

=> Not enough data to support such a scenario.

- Consumer Product Safety Commission (CPSC)
- National Fire Protection Association (NFPA)
- Consumer Electronics Association (CEA)
- Telecommunications Industry Association (TIA)

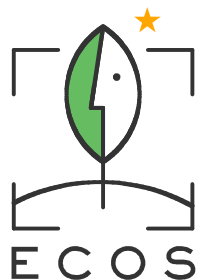
***“potential risk was too low to justify the implementation of a candle flame ignition requirement”***



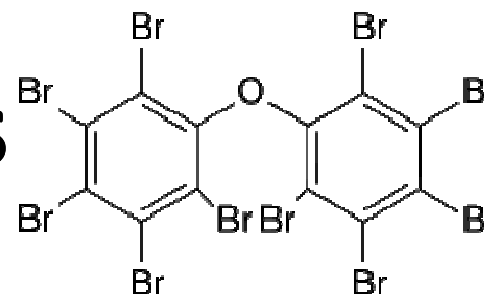


# Products affected

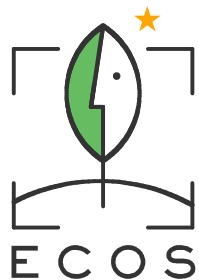
| Standard   | Example Products Affected  |
|--|--|
| <b>IEC 60065:</b> Audio, video and similar electronic apparatus safety standard          | Televisions (TVs) including plasma TVs<br>Audio, CD/DVD players<br>Game machines<br>Video cameras<br>Electronic musical instruments.   |
| <b>IEC 60950:</b> Information technology and telecommunication equipment safety standard | Monitor, personnel computer<br>Printer, scanner, fax machine, copier, calculator<br>Photo-printing equipment<br>Monetary processing machines<br>Telephone sets, pager, modem |



## BFRs and CFRs



- The most cost effective and commonly used chemicals in plastic are brominated and chlorinated flame retardants (BFRs and CFRs).
- DecaBDE has been the one used most often as well as tetrabromobisphenol A (TBBPA).
- Since they are **added to rather than chemically bonded with the exterior plastic**, they can migrate out of the plastic into the surrounding environment.



# Environmental pathways

Found in increasing levels in dust, human fat, body fluids, and breast milk worldwide.

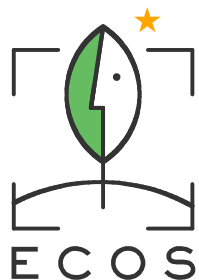


California has the highest levels of fire retardants in consumer products in the US



Much higher levels of BFRs in dust, food, and breast milk. US levels are 10 times than those in Europe.





# Health and env. impacts

They form hazardous chemicals (PBT) including halogenated dioxins and furans.

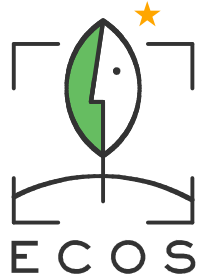
Serious adverse health effects in experimental animals and accumulation in humans - documented in **many hundreds of peer reviewed articles:**

### Most notable:

- reduced IQ in children,
- endocrine and thyroid disruption
- changes in male hormone levels and reduced fertility
- increased time to become pregnant
- adverse birth outcomes
- impaired development
- cancer

(Blum et al , 2008 – The Case against Candle Resistant Electronics)

|                                   |              |                                       |
|-----------------------------------|--------------|---------------------------------------|
| <b>AUTISM</b>                     | <b>10X</b>   | increase<br>early 80's-1996           |
| <b>MALE BIRTH DEFECTS</b>         | <b>2X</b>    | increase<br>hypospadias,<br>1970-1993 |
| <b>CHILDHOOD ASTHMA</b>           | <b>2X</b>    | increase<br>1962-1993                 |
| <b>ACUTE LYMPHOCYTIC LEUKEMIA</b> | <b>62%</b>   | increase<br>in children,<br>1973-1999 |
| <b>CHILDHOOD BRAIN CANCER</b>     | <b>40%</b>   | increase<br>1973-1994                 |
| <b>PRETERM BIRTH</b>              | <b>23%</b>   | increase<br>mid 80's-2002             |
| <b>INFERTILITY</b>                | <b>5-10%</b> | of couples                            |
| <b>BIRTH DEFECTS</b>              | <b>3-5%</b>  | of all babies                         |
| <b>SPERM COUNTS</b>               | <b>1%</b>    | decrease<br>yearly<br>1934-1996       |



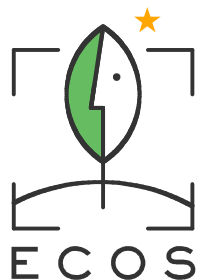
# EU legislation

- Conflict with the **RoHS directive**: ban of Polybrominated biphenyls (**PBBs**) and Polybrominated diphenyl ethers (**PBDPEs**).
- **DecaBDE** phased out in EEE by July 1, 2008 (ECJ ruling)
- Hard to recycle and achieve the 65% target (WEEE Directive)

# The coalition



(Blum et al , 2008 – The Case against Candle Resistant Electronics)

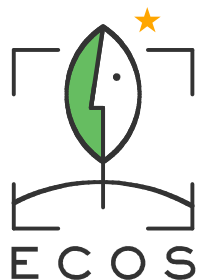


# ECOS work

- Alerted CENELEC and the IEC

⇒ Discussion at the CENELEC BT and circulation of documentation

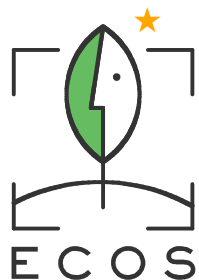
- Contacted the national members of IEC and CLC, providing the relevant scientific input and urging to vote against the draft IEC 62368.



# Outcomes

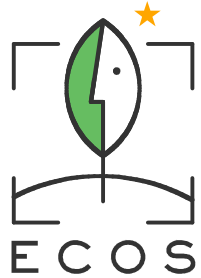
Two-thirds majority of IEC TC 108 members voted against IEC 62368 and the incorporation of the candle flame ignition requirement

Vote in CLC not in parallel with the IEC :  
=> the CENELEC EN 60065 on TVs was approved in late 2008 – comes into force 01.07.2010



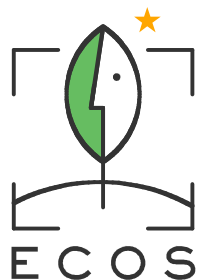
# Conclusions

- Example of how special interest groups can heavily influence, even **abuse** the standards development process.
  - Not following the procedures within committee work– the “**third party technique**”, a known dirty lobbying tactic.
- => Without ECOS and other environmental NGOs, thousands of tonnes of potentially toxic chemicals could have been introduced into people’s homes worldwide.



# The future

- Fire-related issues should be addressed at the source  
=> **standards for fire safe candles**
- New push for inclusion of external ignition during the revision of the IEC 62368
- ECOS will keep playing the watchdog!



# THANK YOU FOR YOUR ATTENTION!

Mundo-B

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