Why Do Fire Fighters Support the Banning of Flame Retardants?

Joseph Fleming
PFFM
(Professional Fire Fighters of Massachusetts)
"The value of flame retardants is certainly doubtful and given the extremely high cancer rates of firefighters the more toxic chemicals we can get out of our environment the less exposure we will have," said Ed Kelly, President of the Professional Fire Fighters of Massachusetts. "This bill will ensure the health and safety not only of firefighters, but our children and all citizens of Massachusetts."
FFs ARE THE “CANARY IN THE MINE”

New insights into the links between firefighting, flame retardants, and cancer resulted from our recently published study on California firefighters. As the lead scientist on the study, I am left with deep concerns about the health of our firefighters.

We analyzed toxic chemicals in the blood of 12 firefighters after a fire event in San Francisco. The study provides the first clear evidence that firefighters accumulate high levels of brominated flame retardants, and their combustion by-products – brominated dioxins and furans – while firefighting. Although a handful of studies had measured chlorinated dioxins in firefighters, ours was the first to measure brominated dioxins and furans.
FFs ARE THE “CANARY IN THE MINE”

• The firefighters had much higher levels and different patterns of these cancer-causing chemicals in their blood than the general population. For example:
  - PBDE levels in blood of the firefighters were three times higher than levels in other Americans and twice as high as levels in California residents.
  - Brominated dioxin and furan concentrations in firefighter blood were extremely high, and were 21 times more toxic than the chlorinated dioxins and furans.

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1) TB117 foam burns similar to untreated foam, which is probably why the previous video used “British” foam (more FR used due to more difficult approval test).
2) Untreated Foam with fire barrier burns similar to treated foam with fire barrier.
DIFFERENT TESTS REQUIRE DIFFERENT AMOUNTS OF FR

- TB117 – match or candle (12 seconds)
- BS 8582 – Small wooden crib
- TB117+ (CPSC 2002) – larger flame than TB117
- BS 8582 – Small wooden crib
- TB133 – Large Gas Burner
- NEW NFPA Test (Protect furniture when it is the 2nd item burned) – “waste paper” basket(?)
- The more robust a fire is the more FR is needed to pass the test.
MORE FRs IN THE FUTURE?

• It would appear that any proposed new fire test designed to resist ignition from a second item and/or designed to limit growth of Heat Release Rate will require **much higher levels of FR** than those required to pass TB117. (Probably at similar levels exceeding TB133 (15-30%).

• TB117 – Formerly mandated in 1 state (Cal.)

• NFPA1 – Mandated in 21 states. (NFPA 1, the Fire Prev. Code will probably reference new tests. It will also be referenced by NFPA101 which applies to healthcare facilities.)
STRATEGIES FOR THE FUTURE

• The International Association of Fire Fighters are opposing efforts at the NFPA to create a new “large flame” ignition test whose goal is to reduce “heat release rate.” However, the FR industry is heavily influencing the process.

• While this is a desirable goal, in and of itself, it is likely that this new tests will require the use of flame retardants far in excess of the amount needed to pass TB117.
• Efforts to ban flame retardants at the national level have not been successful in the past. Given the current climate in DC I do not have any hope that anything will be done.

• However, we have had success at the state level, but in my meeting with legislators there are definition and enforcement issues.
IMPORTANT DEFINITIONS
CENTER FOR ENVIRONMENTAL HEALTH (CAL)

• i. “Added flame retardant chemicals” means flame retardant chemicals that are present at levels above 1,000 parts per million.

• ii. “Halogenated flame retardant chemical” (also known as organo-halogen flame retardant) means any chemical or chemical compound containing chlorine or bromine bonded to carbon for which a functional use is to resist or inhibit the spread of fire. This includes any chemical or chemical compound containing chlorine or bromine bonded to carbon for which “flame retardant” appears on the substance Safety Data Sheet (SDS) pursuant to Section 1910.1200(g) of Title 29 of the Code of Federal Regulations.

• iv. “Flame retardant chemical” means any chemical or chemical compound for which a functional use is to resist or inhibit the spread of fire. Flame retardant chemicals include, but are not limited to, halogenated, phosphorous-based, nitrogen-based, and nanoscale flame retardants, and any chemical or chemical compound for which “flame retardant” appears on the substance Safety Data Sheet (SDS) pursuant to Section 1910.1200(g) of Title 29 of the Code of Federal Regulations.
DEFINITION ISSUES

- Some states have banned 6 FRs. Some states have banned 10 FRs. Some states have banned all organo-halogens. Some states have included nano-particles?
- Most states have proposed a 1,000ppm limit. However, some have proposed 100ppm and one even proposed no FRS, which means 0 ppm.
- Even if all the laws were the same, how are they enforced?
ENFORCEMENT ISSUES

• Without labelling requirements, how would a ban be enforced outside of California?
• Could a state “adopt” TB117(2013)? Some have adopted TB133. If Mass. Did adopt TB117, would a furniture manufacturer in Mass. have to ship the furniture to Cal to be tested?
• Can the California test furniture for the entire US?
This chair complied with the old TB117.

This chair complied with the TB117 -2013. But there was no FR labelling.
LABELS FOUND IN MASS

Some chairs had no labeling at all.

A problem for states, other than Cal., is how to enforce the regulations?

This chair complied with the TB117-2013. But did have FR labelling.
Laws, like sausages, cease to inspire respect in proportion as we know how they are made.
The PFFM would like to thank the organizers for the opportunity to participate.