Flammability requirements for commercial buildings

Meeting Flammability Requirements for Commercial Buildings & Construction
April 15-16, Tampa, Florida

Speakers include: Clean Production Action, Underwriters Laboratory, General Cable Company, US Green Building Council, US EPA, PolyOne Corporation, Communications Cable & Connectivity Association, Eastman Chemical Co., Keller Products Inc., Firestone Building Products, as well as R&D experts and flame retardant industry leaders.

"Meeting Flammability Requirements for Commercial Buildings & Construction", 15-16 April 2015,
"Fire Testing for Codes & Regulations", one day course, 14 April, Safety Harbor, Tampa Bay, Florida.
Link to press release – up to date version on Programme: http://www.pinfa-na.org
Registration: http://events.r20.constantcontact.com/register/event?llr=ccdjaljab&oeidk=a07ea1o6uwwcfd8bf5&osq
Fire safety standards show their effectiveness

No news is good news … Two recent examples show how stringent fire safety standards can contribute to avoiding tragedy.

- A spark from a light on a theatre curtain in Stiefel Theatre, Salina, Kansas, 12/2/2015, caused it to smolder and char a hole, but it did not ignite. The curtain was flame retarded conform to standards for public entertainment venues.
- A fire broke out in the overhead cabin baggage rack on the KLM Amsterdam-Bangkok flight as the plane was taxiing after landing, apparently caused by a lithium ion battery in a drone in a passenger’s luggage. Cabin attendants put the fire out with on-board fire extinguishers. Aircraft safety standards set very high fire resistance requirements for the plastics and other materials used in aircraft interiors.

“Spark from light chars hole in Stiefel Theatre stage curtain”, Salina Journal, 12/2/2045

“Dramatic moment KLM flight attendant extinguished fire ‘caused by lithium ion battery in passenger’s hand luggage’ on flight from Amsterdam to Bangkok” 16/3/15 http://www.dailymail.co.uk/travel/travel_news/article-2995699/Small-fire-breaks-KLM-flight-Amsterdam-Bangkok.html

Tracee Jackson cover story in International Environmentalist

pinfa member FRX Polymers have launched a series of blog videos: “The Life and Times of Tracee Jackson”, the story of the dynamic fictional CEO of a company coincidentally called FRX Polymers. Tracee introduces FRX Polymers’ Nofia flame retardant. “The best synthetics have Nofia” she says, using the example of synthetic hair. Natural hair does not burn readily (because of P and N in its protein structure) whereas synthetic fibres are highly flammable. Nofia is a non-toxic and non-bioaccumulative, phosphorus-based PIN flame retardant. In 2014, FRX received the USA EPA (Environmental Protection Agency) Environmental Merit Award for “making products that reduce risks to human health and reduce environmental damage” and for developing “safer alternatives to toxic, persistent brominated flame retardants, providing many industries with a safer solution for their product needs.” Tracee Jackson tells her contacts that “No one wants to think about their hair being on fire” and shows how non-FR synthetic hair burns violently whereas Nofia hair self-extinguishes.

The Life and Times of Tracee Jackson “What is good synthetic hair” http://whatisgoodhair.com/index.php

“FRX Polymers Receives Environmental Protection Agency (EPA) Award”
TCO Certified Displays 7 draft criteria

TCO, the health, environment and worker protection label, has published draft updated criteria for Flat Panel Displays (FPD Certified Displays 7), which is open for comments until 19th May. The criterial focus on “sustainability throughout the product life cycle” and target in particular buyers under the EU Public Purchasing Directive 2014. The proposal (SA.6.4.2) excludes all halogenated flame retardants and halogenated plastics from plastic parts (parts > 25g), including LCD panels. PIN flame retardants are authorised, subject to having a GreenScreen assessment with benchmark 2 or higher (see pinfa Newsletter n° 41). This follows the TCO decision to authorise a number of PIN flame retardants in all IT product categories (see pinfa Newsletter n° 44).


New UL/ANSI circuit board types recognise PIN technology

UL (Underwriters Laboratories) have recognised the evolution of today’s performance fire-safety treated materials for printed circuit boards (PCBs) by splitting the UL/ANSI (American National Standards Institute) FR-4 specification into two, FR4-0 for the traditional brominated PCBs and FR 4.1 for the more recent PIN (“non-halogen”) materials. Originally FR-4 PCBs were glass-filled brominated epoxies, but they have been improved to ensure high speed and high reliability, as well as to respond to market demand for environmental, non-halogenated materials. Both types of FR-4 board must contain at least 50 wt% epoxy resin, 45 wt% inorganics and meet a 130°C thermal rating. The new FR-4.1 boards must contain < 900 ppm chlorine, < 900 ppm bromine and < 1500 ppm total halogens.

“What does UL’s FR-4 Reclassification Mean to Your Company?” http://www.thetestlab.com/uls-fr-4-reclassification-mean-company/


PIN flame retarded optical fibre jackets for public buildings

Evonik Industries AG’s has launched Vestodur® X9426, a new non-halogenated flame retardant grade for optic fibre cable jacketing and wire bundles, meeting demanding requirements increasingly fixed in public construction project tenders. The PIN flame retardant PBT (polybutylene terephthalate) offers high fire resistance, low smoke density and low smoke toxicity. VESTODUR fulfills flammability class according to UL94 (IEC 60695) V-2 at 0.8 mm. The extruded material offers flexibility, kink and crush resistance and good hydrolysis properties.

PIN textile flame retardant achieves OEKO-TEX 100 compliance

Archroma’s Pekoflam® HFC is the first powder flame retardant for textile coating to be listed under the OEKO-TEX 100 Ecolabel. The non-halogenated* PIN flame retardant is an organic phosphorus – nitrogen based compound which can be used in water-based systems. It offers high performance on synthetic fibres including polyamides and blends, and is adapted for demanding applications such as military and protective clothing, transport interior textiles and high-quality upholstery. The compatibility with water-based systems as well as OEKO-TEX® Standard 100 compliant solvent-based coating systems ensures flexibility to different application technologies and end-uses. Properties are compatible with direct skin contact applications. Pekoflam® HLC adds to the existing range of Pekoflam® MSP and Pekoflam ECO and SYN as non-halogenated* fire retardants, which are also compliant* with OEKO-TEX restricted substances and are particularly adapted for cotton textiles, offering high efficacy and low impact on textile tensile strength.


PIN flame retardant cables for cleanroom environments

HELUKABEL offers a range of high performance, high quality, PIN flame-retardant cables for the particularly challenging application of “cleanrooms”, such as semiconductor and electronics manufacturing facilities where even the smallest contamination, particle or dust can damage production. The cables are flame retardant and low smoke halogen free (LSZH), as well as resistant to oils, light, chemicals, solvents, radiation, mechanical stress and temperatures of -40°C - +80°C. The cables are also safe for food contact. Quality for use in cleanrooms is certified by the Fraunhofer Institute for Production Techniques and Automation. Source: http://www.helukabel.de/us/us/industries/electronics/cleanflex_hf_1.html

Voltatex® 4080 impregnating resin

Axalta Coating Systems recently announced the launch of a new halogen-free, flame retardant impregnating resin with outstanding flame retardance, Voltatex® 4080. This newly-developed material is specially designed for dry-type transformer application, and features excellent PIN flame retardant technology (LOI > 30, by UL94 combustion level test). This secondary insulation material allows safer operation of the resulting electric device without risks of release of halogenated compounds in case of fire. The development of electrical insulation materials has been a strength of Axalta’s research and development. The continual evolution of Axalta’s product offering is the result of the on-going exchange of know-how with leading manufacturers in the electrical and electronics industry. http://www.axaltacs.com/corporate/en_US/newsroom/news-releases/next-generation-products.html
PTS and Eurostar offer PIN polyamide range

Polymer Technology & Services (PTS) has signed a collaboration agreement with Eurostar Engineering Plastics to design and manufacture Starflam flame retardant polyamides for the North America electronics, automobile and renewable energies markets. Eurostar offer a wide range of Starflam ECO-FR, XGEN non-halogenated polyamides, offering high performance (impact, tight tolerance, elongation, modulus, comparative tracking index, relative temperature index) with flame retardancy in the V-2 to V-0 range at 0.4 mm and 5VB - 5VA, UL746C class F1. Transport range XGEN products achieve the DIN 5510 transportation standard. Applications for the Starflam PIN flame retardants include automobile, mass transport (metro, trains), electronics, photovoltaics and industry.


Industry presses for EU tourism fire safety Directive

Euralarm, the electronic fire and security industry association, wants an EU Directive on Fire Safety and Security for Tourism Accommodations, supported by EU standards (CEN, CENELEC). The industry organisation reminds that Europe is the world’s number one tourist destination, but today has no horizontal legislation to ensure coherent fire safety in tourism accommodation. “Safe exit times are lower than 20 years ago, because fire spreads faster. To improve fire safety, Euralarm believes that an European Commission Directive should require Member States to implement national legislation on fire safety and security in hotels fulfilling minimum requirements established at EU level.” Specific attention should be paid to the risk populations, including the elderly and children.


PIN FR for polypropylene fibres in different textile structures

PIN flame retardant polypropylene masterbatches were developed and tested for producing different textiles, combining phosphorus, inorganic and nitrogen components (inorganic aluminium phosphinate, phosphate ester, melamine cyanurate). Different ratios of the PIN FR components were tested for a total FR loading of 6%, in nonwoven and in knitted fabrics. The thickness and textile structure significantly modified fire behaviour, with thicker structures showing lower fire performance because of opening up in contact with a flame. With an inorganic phosphinate / melamine ratio of 2:1, significantly improved LOI and cone calorimeter fire performances were obtained, and nonwoven 200 g/m² polypropylene textiles achieved FMVSS302 and DIN 4102-1 standards.

SACO Polymers innovative tray cable jacketing

SACO Polymers, a market leader in wire and cable polymer compound solutions, has presented a new high-performance LSZH (low smoke, zero halogen) ceramifiable compound for tray cable jacketing. The technology uses an enhanced filler technology, using (inorganic) PIN flame retardants (magnesium or aluminium hydroxides) combined with synergists (char hardening additives), resulting in improved fire resistance, very low smoke (even with a halogen-containing core material), polymer compound compatibility and optimised cable properties (UL1277 tray cable standards achieved). Minimum char length, near zero smoke and full scale vertical cable test pass were achieved under IEEE 1202/FT4. The new compound enables more flexible tray cable design, for example reduced jacket thickness, elimination of fire-resistant core wrapping tapes and flexible core design. The new material widens the range of highly fire resistant, non-halogenated materials offered by the SACO Group (SACO Polymers, SACO-Macromeric, Aurora, OH, AEI Compounds).

“SACO Polymers launches advanced technology zero-halogen tray cable jacketing compound with enhanced fire performance to meet UL 1277” http://www.sacomacromeric.com/contact/news/december-2014/


Bio-sourced phosphorus ester PIN FRs

Flame-retarding phosphorus esters were produced from bio-sourced raw materials: starch and castor oil. Isosorbide, derived from starch, and 10-undecenoic acid from castor oil were combined with phosphorus to produce four different complex phosphorus compounds. Thermal degradation of these compounds was tested, showing release of phosphorus acid, a known char former in polymers enabling solid-phase fire protection. The phosphates showed easier phosphorus acid release than the phosphonate or phosphinate compounds.


Fire safety market will continue to grow

The ‘Future Market Insights’ industry analysis report 2014-2020 confirms that flame retardants markets will continue to grow, particularly in the Asia-Pacific region, driven by growth in the construction and automotive industries, and by regulations on fire standards. “Eco-friendly” flame retardants are expected to develop particularly in the Asia-Pacific region. A separate report by MarketsandMarkets confirms this expected growth, anticipating a global flame retardant market of 10.3 billion US$ by 2019, again with growth driven by the construction, automotive and consumer goods sectors and particularly in the Asia-Pacific region.


EMAS best practices for E&E manufacturing

As defined by the European Eco-Management and Audit Scheme (EMAS) regulation, the European Commission is developing a Sectoral Reference Document (SRD) on Best Environmental Management Practice for the electrical and electronic equipment manufacturing sector (E&E). For pinfa, Bernd Nass of Clariant participated at the Kick Off Meeting, Brussels, 23-24 February 2015. Amongst a range of proposals discussed, was cost-effective and environmentally sound substitution of hazardous substances. The use of GreenScreen® tool was put forward, and a proposal to eliminate brominated flame retardants was discussed controversially. The importance of closed-loop recycling of thermoplastics was highlighted, taking into account the large number of different plastics and additives. The SRD proposals should be finalised by end 2015.

Working documents will be made available at http://susproc.jrc.ec.europa.eu/activities/emas/

Agenda

Events with active pinfa - pinfa-na participation are marked: ►

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<tr>
<th>Date</th>
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<tr>
<td>14 April</td>
<td>Safety Harbor</td>
<td>Fire Testing for Codes &amp; Regulations, Marcelo Hirschler (GBH International)</td>
<td><a href="mailto:mhirshler@gbhinternational.com">mhirshler@gbhinternational.com</a></td>
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<td>15-16 April</td>
<td>Safety Harbor,</td>
<td>► Meeting Flammability Requirements for Commercial Buildings &amp; Construction (pinfa-na and The National Pollution Prevention Roundtable)</td>
<td><a href="http://www.pinfa-na.org">http://www.pinfa-na.org</a></td>
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<td>29-30 April</td>
<td>Montpellier, France</td>
<td>COST MP1105 Workshop on “Thermophysical properties, Thermal stability and Fire retardancy of blends and filled polymers” within the Eurofillers/Polymer Blends conference</td>
<td><a href="http://eurofillerspolymerblends2015.mines-ales.fr/">http://eurofillerspolymerblends2015.mines-ales.fr/</a></td>
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<td>17-20 May</td>
<td>Stamford, Connecticut</td>
<td>BCC Flame Retardancy Conference (18-20 May) and (17 May) industry seminar</td>
<td><a href="http://www.bccresearch.com/conference/flame">http://www.bccresearch.com/conference/flame</a></td>
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<tr>
<td>18-19 May</td>
<td>Guangzhou, China</td>
<td>International Flame Retardancy and Compounding Conference – on <a href="http://www.skz.de">www.skz.de</a></td>
<td>soon</td>
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<tr>
<td>5-7 Oct 2015</td>
<td>New Delhi</td>
<td>Fire India</td>
<td><a href="http://www.fire-india.com/">http://www.fire-india.com/</a></td>
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<td>5-7 Oct 2015</td>
<td>Tsukuba, Japan</td>
<td>10th Asia-Oceania Symposium on Fire Science and Technology (AOSFST)</td>
<td><a href="http://www.iafss.org/10th-aosfst/">http://www.iafss.org/10th-aosfst/</a></td>
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Abbreviations: See pinfa website: http://www.pinfa.eu/library/glossary-of-abbreviations.html