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f World fire statistics: fire as vulnerability

“World Fire Statistics” is the annual bulletin of the World Fire Statistics Centre, operated by the Geneva Association, which brings together 90 of the world’s principal insurance companies. The October 2011 bulleting shows that the cost of fire (direct losses) continued to rise in nearly all of the 13 countries for which yearly data are available across the world from 2006 to 2008 (most recent available data), Only Germany, Japan and Singapore showed reductions in fire costs. Direct cost of fire is estimated at 0.05 – 0.22% of GDP, for different countries, plus indirect losses of 0.002 – 0.095 % of GDP. Fire deaths fell in some countries but increased in a number of others. The Bulletin emphasises the need to take into account the increasing vulnerability of society to fire, which does not necessarily appear in statistics, but relates to increasing risks in increasingly urban, sophisticated, technological and globally interdependent communities, and is exacerbated by climate change.

“World Fire Statistics n°27”, 2011 Annual Bulletin of the World Fire Statistics Centre (Geneva Association – International Association for the Study of Insurance Economics) www.genevaassociation.org



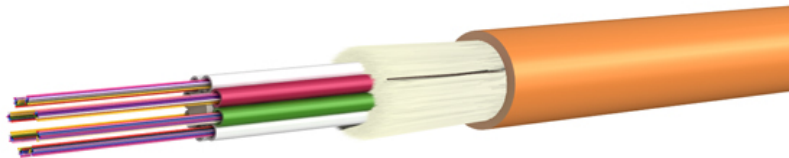
f New amino phosphate based flame retardant approved for use in construction materials.

JJI Technologies' amino phosphate based flame retardant system JJAZZ has passed the ASTM E84 Class B Standard Test Method for Surface Burning Characteristics of Building Materials. The test looks at surface burning, measuring flame spread, temperature and smoke density. The product is designed to improve materials' physical performance, increase fire extinguishing efficiency, and simplify compounding. The flame retardant is available as a powder and pelletized concentrate form intended for use in polyolefin plastics, is halogen-free and conform to EU Restriction of Hazardous substances (RoHS), EU Waste Electrical Electronic Equipment (WEEE), and Canadian Challenge regulations.



Further information: "Non-halogen flame retardant meets ASTM B&C standard", 31st March 2011, www.jji-technologies.com contact: David.Diefenthal@jji-technologies.com

f Halogen free cables approved for underground



Halogen-free, low smoke and self-extinguishing fibre optic cables from HUBER+SUHNER have obtained authorisation for use throughout the London Underground, by meeting the fire, smoke and toxic fume requirements of LUL's 1-085 standard. The multi-fibre cables can

thus be used for high-speed, high reliability data transmissions used for example for platform information systems, video links, ticketing as well as CCTV systems. Beside this HUBER+SUHNER has also been chosen by Downer EDI Rail to equip 78 new passenger trains (624 double-deck carriages) for RailCorp's Sydney suburban network in Australia. Over 12 000 km of RADOX halogen-free, fire resistant cables will be supplied.

Your Fibre Optic News, 1st July 2011: http://www.yourfibreopticnews.com/news_item.php?newsID=30734

HUBER+SUHNER, 11th May 2010:

<http://www.hubersuhner.com/ie70/news.htm?org=49080A5CE5408626&newsid=96C2963D98380B55>



f HDPUG cables project

HDPUG has completed a first “Analysis of Halogen Free Cables”. Led by Dell Computer Corp., with participation of compounders, cable manufacturers and electronics producers (OEMs), the project looked at the feasibility of moving to halogen free cables for different electronics applications: internal such as ribbon cables, external data cables such as HDMI, high speed data cables such as MiniSAS, desktop and notebook power cords. The project concluded that no drop-in substitute for PVC was found, but several halogen free solutions exist with development and specification changes. A follow-up project is being considered to improve understanding of processing of halogen-free materials as a function of required performance.

HDPUG, High Density Packaging User Group (incorporated in the State of Arizona, USA), is an international, non-profit organisation of companies involved in the electronics supply chain: <http://www.hdpug.org/content/bfrpvc-cables-wires>

f Improving standardisation of Halogen Free PWBs

HDPUG (see above) is also working on standardising specifications for Halogen Free Printed Wiring Boards (PWBs). The equipment manufacturers (OEMs) defined and proposed to materials manufacturers a list of desirable materials properties, test methodologies and conditions, summarised in the [HDP Database Project Report](#). In order to avoid having a second database of materials data, additional to the existing industry standard (IPC slash sheets IPC4101C), the HDPUG project team is now working with the IPC standards committees to tighten the slash sheets to render data more comparable, using the conclusions of the Database Project Report.

HDPUG Database Project: <http://hdpug.org/content/halogen-free-materials-database>

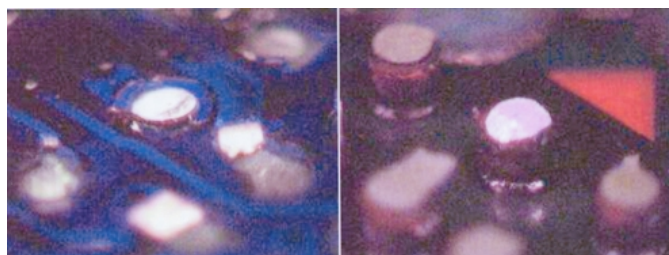
f Proving reliability of alternative computer components

HDPUG (see above) has completed Phase 2 of a full scale project assessing purchasing and reliability of Halogen Free computer components. In Phase 1, a BOM (Bill of Materials) was established for parts for a complete laptop computer, and purchase orders were made to attempt to purchase all needed parts. At this stage, many suppliers indicated that the halogen free components were not yet available but were expected soon. In Phase 2, a second round of purchasing obtained 87% of the whole computer's components and structures halogen free. Several computers were assembled using these parts and tested to manufacturers' specifications. No problems or weaknesses were detected. Other HDPUG projects are now addressing the remaining 13% of parts, in particular the Halogen Free Cables project (see above).

HDPUG Halogen-Free Assembly Reliability project: <http://hdpug.org/content/halogen-free-assembly-reliability-phase-2>

(Full report project HDPUG members only – summary on public website)

With thanks to Marshall Andrews, Executive Director, HDP User Group for providing this information.

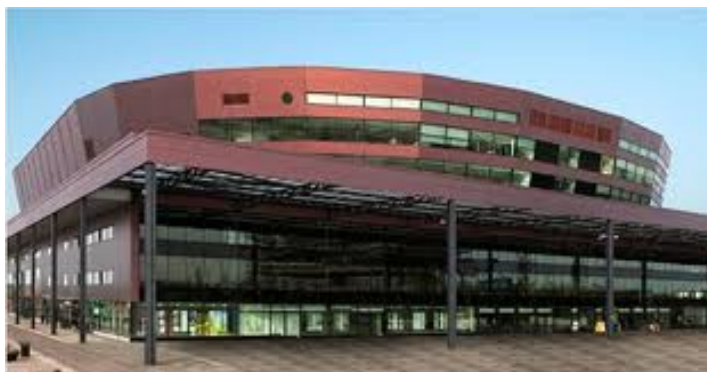


Alternative component testing (PCB: dye- and pull on U100 following shock and vibration): no anomalies found.



f Green flame retardant for Nobel party

EcoFlameProtect's EFP flame retardant has been chosen to ensure the fire safety of the NightCap Nobel event, the party after the Nobel Prize Banquet, with over 1 000 guests in the Stockholm City Hall, 10th December 2011. EFP is based on ammonium sulphate and disodium hydrogen phosphate, available as a water-based spray on fire safety treatment for textiles, building materials, particle boards decorations, shop displays, and as a powder for use in plastics. Fire test results are included in the published US Patent.



EcoFlameProtect AB, Sweden: www.ecoflameprotect.se Photo: Malmö Arena, where EcoFlame is widely applied.
US Patent 20110204304 of 25th August 2011: on <http://www.google.com/patents>

f Biomass derived phosphorus flame retardant

Research suggests that polyphosphate flame retardants based on biomass-derived chemicals can be an effective flame retardant component for ABS plastics. A novel polyphosphate polymer, poly(DPA-PDCP), was produced from diphenolic acid, a chemical which can be produced large scale and low cost from biologically sourced levulinic acid. This was included in ABS alone or in combination with ammonium polyphosphate (APP) and different fire tests were carried out (weight loss, limiting oxygen index, cone calorimeter heat release) showing significantly improved fire performance and a formation of a rich and compact protective char layer (under SEM).

"Flame retardant ABS with a novel polyphosphate derived from biomass", Y. Zhang, X. Chen, F. Zhengping, Advanced Materials Research, Vols. 284-286, pages 187-192, online 4th July 2011 at www.scientific.net

f Bio-sourced PIN flame retarded resin

A US patent assigned by Fuji Xerox Ltd, Tokyo, presents a biologically sourced resin and mouldings with flame retardant properties, for example for electronic and electrical product housings. Polylactic acid (PLA) is a thermoplastic aliphatic polyester derived from renewable resources, such as corn starch, tapioca or sugarcane. The patent indicates that a wide range of flame retardants can be used, but that phosphorus based ones are preferable, in combination with an ammonium organic acid compound. Fire test results are given, showing UL-94 V0 or V1 flammability resistance results depending on composition, both on newly moulded articles and on articles aged for 1,000 hours at 55°C-85%RH.

US Patent n° US 2011/0207865 A1, dated 25th August 2011. "Polylactic acid – based resin composition and molded article of polylactic acid – based resin". Search using patent number on <http://www.google.com/patents>



f Other News

New York State has adopted legislation banning the chlorinated flame retardant “TRIS” (TCEP, see abbreviations) from all products intended for use by children under 3 years old (baby products, toys, children’s car seats, nursing pillows, crib mattresses, strollers, etc). TRIS is already banned in Europe and in children’s clothing (by the Consumer Product Safety Commission) in the USA. The ban is applicable from 1st December 2013.

The European Chemical Agency (ECHA) has published proposals for evaluation of substances proposed for review by Member States (termed CoRAP for Community Rolling Action Plan). Some 91 substances will be evaluated in 2012-2014, with others being progressively added to the list as the process progresses. The aim is to assess whether these substances pose a risk to human health or the environment, and if so what further data or action is required. Three of the 91 substances are flame retardants: short chain chlorinated paraffins (SCCPs), Triphenyl phosphate and Tris(methylphenyl) phosphate.

The Stockholm Convention Expert Committee has recommended that the brominated flame retardant HBCD be added to Global Treaty list of POPs (Persistent Organic Pollutants). This United Nations administered Treaty currently requires global control measures or elimination of 22 substances, including several brominated diphenyl or biphenyl flame retardants.

*New York State legislation, search for Bill A06195: <http://assembly.state.ny.us/>
Summary of bill and TCEP: <http://cga.ct.gov/2011/rpt/2011-R-0298.htm>*

ECHA CoRAP list 21 October 2011: http://echa.europa.eu/news/na/201110/na_11_50_corap_en.asp

*United Nations press release, 14th October 2011, “Hazardous chemical recommended for elimination by UN experts”:
<http://www.un.org/apps/news/story.asp?NewsID=40063&Cr=environment&Cr1>*

f Electrical fire shuts down New York PATH subway

An electrical fire at Journal Square Station, New Jersey, resulted in complete shutdown of the PATH underground railway on 11th November evening because of impacts on signalling systems. The fire caused no injuries, passengers were safely evacuated at stations and rerouted to other transit systems, and system was restored to operation after 5 hours. The very rigorous fire safety requirements required for all materials and electrical components by underground transit systems doubtless contributed to limiting this incident.



f Abbreviations

<i>BFR:</i>	<i>Brominated Flame Retardant</i>
<i>DPCP</i>	<i>Diphenyl cresyl phosphate</i>
<i>NFPA:</i>	<i>US National Fire Protection Association www.nfpa.org</i>
<i>PBDE:</i>	<i>Poly brominated diphenyl ethers</i>
<i>POP:</i>	<i>Persistent Organic Pollutant</i>
<i>PVC:</i>	<i>Poly Vinyl Chloride</i>
<i>SPE:</i>	<i>US Society of Plastic Engineers www.4spe.org</i>
<i>SCCP:</i>	<i>Short Chain Chlorinated Paraffins (Alkanes C14-17 chloro)</i>
<i>TCEP:</i>	<i>tris(2-chloroethyl) phosphate (known as "TRIS")</i>
<i>TCPP:</i>	<i>tris(2-chloro-1-methylethyl) phosphate</i>
<i>TDBPP:</i>	<i>Tris(2,3-dibromopropyl) phosphate</i>
<i>TDCPP:</i>	<i>Tris(1,3-dichloro-2-propyl) phosphate</i>
<i>TEHP:</i>	<i>Tris (2-ethylhexyl) phosphate – C₂₄H₅₁O₄P</i>
<i>TEP:</i>	<i>Triethyl phosphate</i>
<i>TPeP:</i>	<i>Tripentyl phosphate</i>

halogenated flame retardants

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PIN flame retardant
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PIN FR



f Agenda

Events with active pinfa participation are marked: ►

7 Dec. 2011	Online	FR systems selection for E&E (SpecialChem) with Dr. S. Rampalli http://www.specialchem4polymers.com/resources/etraining/register.aspx?id=896
8-9 Dec. 2011	► Berlin, Germany	Railways materials symposium www.bahntechnik-symposium.de
12-14 Dec. 2011	Orlando, Florida	Fire & Life Safety Conference (NFPA) http://www.nfpa.org/displayContent.asp?categoryID=2088
28-31 Dec. 2012	Tehran, Iran	11th International Paint, Resin, Coatings & Composite Fair www.ipcc.fr
6-8 March 2012	Cologne, Germany	Cables 2012 (AMI): http://www2.amiplastics.com/Events/Event.aspx?code=C441&sec=2105
14-16 March 2012	New York	5 th International Symposium on Tunnel Safety & Security http://www.istss.se/en/Sidor/default.aspx
20-22 March 2012	Cologne, Germany	Green Polymer Chemistry 2012 www.amiplastics.com
25-29 March 2012	San Diego, California	ACS Fire and Polymers VI conference http://portal.acs.org
1-5 April 2012	Orlando, Florida	National Plastics Exhibition www.npe.org , SPE Conference www.spe.org
16-17 April 2012	Shanghai, China	3 rd International Conference on Flame Retardants (SKZ) http://www.skz.de/en/training/conferences/international_conference/1499..html
18-21 April 2012	Shanghai, China	Chinaplas (Asia Plastics and Rubber Trade Fair) http://www.chinaplasonline.com
18-21 April 2012	Miami, USA	7 th International Conference on Wood & Fire Safety http://www.sfs.au.com/documents/Wood%20&%20Fire%20Safety%20Conference%2020121.pdf
8-10 May 2012	Indianapolis, Indiana	American Coatings Show (Vincentz Network) http://www.american-coatings-show.com/
11-15 May 2012	Strbske Pleso, Slovakia	7 th International Conference on Wood & Fire Safety http://www.sfs.au.com/documents/Wood%20&%20Fire%20Safety%20Conference%2020121.pdf
20-23 May 2012	Cambridge, Massachusetts	BCC Flame Retardancy conference http://www.bccresearch.com/conference/
4-6 June 2012	Lausanne, Switzerland	Trends im Brandschutz/Flammschutzmittel (SKZ) www.skz.de
23-24 May 2012	Würzburg, Germany	ETTC European Technical Coatings Congress www.etcc2012.ch
11-14 June 2012	Las Vegas	NFPA Conference and Expo (US National Fire Protection Association) http://www.nfpa.org/displayContent.asp?categoryID=943
14-15 June 2012	Denver, Colorado	Fire Retardants in Plastics (AMI) http://www2.amiplastics.com/Events/Event.aspx?code=C448&sec=2199
27-28 Sept. 2012	Chicago	2 nd International Conference on Fires in Vehicles (FIVE) www.firesinvehicles.com