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New criteria for endocrine disruptors announced

[Source: European Chemicals Agency, June 15, 2016](#)

Helsinki, 15 June 2016 -- ECHA welcomes the Commission's new criteria for endocrine disruptors as it strengthens the Agency's ongoing efforts to have the most suitable risk management measures in place for all hazardous substances on the market.

ECHA is now analysing how the new endocrine disruptor criteria will impact in particular the approval process for active substances under the Biocidal Products Regulation.

[Read more...](#)

See a press release from the European Commission, "[Commission presents scientific criteria to identify endocrine disruptors in the pesticides and biocides areas](#)" and ECHA's web page on [Endocrine disruptors](#).

Also see the U.S. Environmental Protection Agency page on [Endocrine Disruption](#).

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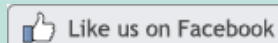
Synthesis of Novel Renewable Polyesters and Polyamides with Olefin Metathesis

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Source: [Environmental Health News, June 15, 2016](#)

Author: Brian Bienkowski

Children in the U.S. with higher levels of BPA in their bodies were more likely to have Attention-Deficit/Hyperactivity Disorder (ADHD), according to a study.

The study of 460 children across the U.S. aged 8 to 15 years old found that 11 percent of those with BPA levels higher than the median level had ADHD. In contrast, 3 percent of those children with BPA levels below the median had ADHD.

The research, published online last week in the *Environment Research* journal, adds to evidence that children's BPA exposure may alter brain development and lead to behavior problems such as reduced attention and hyperactivity. ADHD is the most common behavior disorder in U.S. children, causing them to have trouble concentrating and controlling their behavior.

It's unclear what causes the disorder, but research suggests a mix of genetics and exposure to some environmental chemicals, such as BPA, which is known to disrupt hormones critical for developing brains.

[Read more...](#)

See original article in *Environment Research*, "[Association of Bisphenol A exposure and Attention-Deficit/Hyperactivity Disorder in a national sample of U.S. children](#)".

ECHA evaluating whether recycled rubber filling on artificial sports grounds poses a health risk

Source: [European Chemicals Agency, June 8, 2016](#)

Helsinki, 8 June 2016 -- In its preliminary evaluation, ECHA will aim to:

- identify any hazardous substances in the recycled rubber filling that may pose a health risk (such as polycyclic aromatic hydrocarbons (PAHs) which are already extensively restricted by EU legislation).
- assess the risk resulting from skin, oral and inhalation exposure to these substances in recycled rubber filling used on both open air and indoor sports grounds.

The results of ECHA's preliminary evaluation are expected by January 2017 -- to be published in February 2017. Based on this, ECHA will discuss the possible next steps with the Commission.

[Read more...](#)

See U.S. Environmental Protection Agency's page, "[Federal Research on Recycled Tire Crumbs Used on Playing Fields](#)".

TURI's Note: See our new [artificial turf fact sheet](#).

Highly flame retardant green composites using seashells

Source: [Society of Plastics Engineers, March 31, 2016](#)

Authors: Hesham Moustafa, Nabila A. Darwish, Sophie Duquesne, and Ahmed M. Youssef

Increasing seafood consumption has led to generation of a large volume of seashell waste that is essentially treated as useless and dumped onto reclaimed land or into coastal waters. Seashells are mainly composed of calcium carbonate (CC), mineral

oxides, and organic materials. When decomposing, seashells produce gases whose odor and toxicity are hazardous to human health. Because CC is one of the most commonly used inorganic fillers, recycling seashells offers a means of using this material productively, for example, as soil conditioners, low-cost absorbents, and as biofiller in polymers. The aim of the work described here is to develop a green composite from acrylonitrile butadiene styrene copolymer (ABS) using a ground biofiller derived from seashells collected from the seashore. ABS is a widely used thermoplastic polymer because of its good chemical resistance, mechanical properties, and processing advantages. However, the polymer is easily flammable. Consequently, we decided to investigate the flame-retardant properties of ABS composites containing CC produced from seashell waste. To our knowledge, these properties have not yet been reported in the literature.

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Hundreds of Cancer-Causing Chemicals Pollute Americans' Bodies

[Source: Environmental Working Group, June 14, 2016](#)

[Author: Alex Formuzis](#)

WASHINGTON -- Hundreds of cancer-causing chemicals are building up in the bodies of Americans, according to the first comprehensive inventory of the carcinogens that have been measured in people. EWG released the inventory today.

EWG spent almost a year reviewing more than 1,000 biomonitoring studies and other research by leading government agencies and independent scientists in the U.S. and around the world. The nonprofit research group found that up to 420 chemicals known or likely to cause cancer have been detected in blood, urine, hair and other human samples.

Studies of the causes of cancer often focus on tobacco, alcohol and over-exposure to the sun. But the World Health Organization and many other scientists believe nearly 1 in 5 cancers are caused by chemicals and other environmental exposures -- not only in the workplaces, but in consumer products, food, water and air.

[Read more...](#)

[See link to EWG report, "The Pollution in People: Cancer-Causing Chemicals in Americans' Bodies".](#)

Dupont on Trial over C8s Tied to Cancers. But is the Replacement C6 Safer?

[Source: Environmental Leader, June 13, 2016](#)

[Author: Ken Silverstein](#)

Right now, Dupont is involved in a civil trial over a chemical it had used to manufacture stain-resistant teflon, called C8. It's a test case -- one of six -- that will determine how the remaining 3,500 are dealt with.

Dupont, however, started to phase-out C8 from the market in 2014 after it was determined that it caused a number of cancers linked [to] thyroid and testicular issues. It has replaced it with C6, which is supposed to be safe.

To be precise, C8s have eight carbons, with the most common being PFOA. C6 has six carbons.

[Read more...](#)

See the [C8 Science Panel website](#) for more information on health studies pertaining to PFOA.

Also see press release, "[NH DHHS to Offer PFC Blood Testing to Residents Impacted by PFC Contamination in Drinking Water](#)".

Reprotoxins that should be subject to limit values for workers' exposure

[Source: European Trade Union Institute, 2016](#)

The objective of this project is the identification of substances toxic to reproduction (in short: reprotoxins) which are relevant for workers' exposure via inhalation at a considerable number of workplaces in Europe and, thus, for which an indicative occupational exposure limit value (IOELV) under the Chemical Agents Directive (CAD) might be suggested.

[Read more...](#)

New opportunities to valorize biomass wastes into green materials

[Source: Journal of Cleaner Production, October 1, 2016](#)

[Authors: Iuliana Spiridon, Raluca Nicoleta Darie-Nita, Gabriela Elena Hitruc, Joanna Ludwiczak, Irene Alexandra Cianga Spiridon, Marius Niculaua](#)

Due to depleting natural resources, new environmental regulations and economic considerations, there is a constantly growing interest in using renewable resources. That is why, considering the growing awareness of environmental and waste management issues, green composites are increasingly promoted for sustainable development. Novel materials based on polylactic acid and different biomass wastes have been obtained and analyzed. The addition of biomass to a polylactic acid matrix resulted in more opaque materials, with decreased values of the water contact angle and acceptable values of mechanical properties. Thus, transparency decreased from 1.99 for polylactic acid to 0.94 for the material comprising pomace fibers. ...

The biomass residues under study represent sources of raw material that proved suitable for manufacturing new materials, which could reduce domestic dependence on petroleum-based thermoplastics.

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Dow Technology Enables Recyclable Flexible Plastic Packaging

[Source: Environmental Leader, June 16, 2016](#)

[Author: Jessica Lyons Hardcastle](#)

Dow Chemical has debuted a new RecycleReady Technology that allows polyethylene-based barrier packaging to be recycled as part of existing grocery store drop-off recycling programs.

The technology aims to divert packaging waste from landfill or incineration, increase post-consumer recycling yields and aid the creation of a circular economy for plastics packaging, Dow says.

It could also help deliver \$3.5 billion in environmental savings -- a cost benefit that could be achieved by drastically scaling up sustainable plastic initiatives such as recycled plastic, according to a paper by Trucost published last month.

Created through collaboration with the Sustainable Packaging Coalition (SPC) and other industry members, the technology helps converters create recyclable barrier pouches. This enables the recycling of packaging for products like granola and nuts, which Dow says was not possible before in flexible packaging.

[Read more...](#)

Synthesis of Novel Renewable Polyesters and Polyamides with Olefin Metathesis

Source: ACS Sustainable Chemistry & Engineering, May 31, 2016

Authors: Annelies Dewaele, Lotte Meerten, Leander Verbelen, Samuel Eyley, Wim Thielemans, Peter Van Puyvelde, Michiel Dusselier, and Bert Sels

Unsaturated and hydroxyl-functionalized C6-dicarboxylic acids were successfully synthesized via olefin metathesis from methyl vinyl glycolate (MVG), a renewable α -hydroxy C4-ester product from Lewis-acid carbohydrate conversion. Addition of a second-generation Hoveyda-Grubbs catalyst to neat MVG leads to a near quantitative yield of dimethyl-2,5-dihydroxy-3-hexenedioate (DMDHHD). Additional hydrolysis and hydrogenation steps form interesting polymer building blocks like 2,5-dihydroxy-3-hexenedioic acid (DHHDA) and 2,5-dihydroxyadipic acid (DHAA). Their use in polyester and polyamide synthesis is demonstrated after determination of their physical and spectroscopic characteristics. Copolymerization of DHHDA with L-lactic acid for instance produces a cross-linked poly(L-lactic acid-co-DHHDA) polyester. Proof of cross-links is ascertained by NMR and FTIR. Substantial impact on the melting, thermal, and polar properties of PLA are observed already at low amounts of DHHDA (0.1 mol %) in accord with the presence of cross-links in the polymer. Biobased polyamides were also synthesized by equimolar reaction of DHHDA with hexamethylenediamine, producing a renewable polyamide analogue of the petroleum-based nylon-6,6. Interestingly, the as-synthesized polyamide (α -bishydroxylated unsaturated polyamide, HUPA) possesses similar thermal stability as nylon-6,6 but shows different chemical properties as a result of the double bond and α -hydroxy functionality.

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