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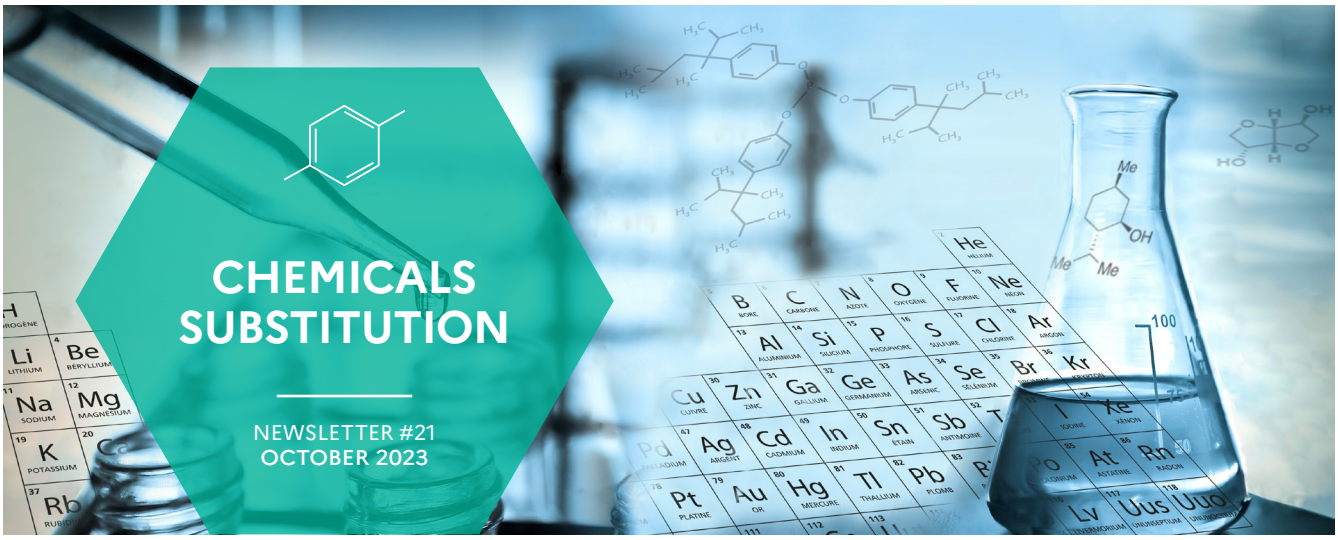

EDITORIAL

SUBSTITUTION SITE EXPANDS TO INCLUDE TWO NEW GROUPS OF SUBSTANCES

The aim of the Chemical Substitution website is to promote the diffusion and sharing of information on substitution. It now includes two new groups of compounds in addition to bisphenols, phthalates, alkylphenol ethoxylates and PFAS: persistent, mobile and toxic (PMT) and very persistent and very mobile (vPvM) substances.

PMT and vPvM substances share intrinsic properties that favour their spreading and concentration in the environment. In the absence of preventive or remedial measures, these persistent and mobile substances accumulate in water and soil, whereas their effects on health and the environment are generally poorly understood.

The number of PMT and vPvM substances is high (the UBA identifies around 260 of them among the substances registered in REACH), and the scope of their uses is very broad since these substances include monomers (resins, etc.), solvents, synthesis intermediates, additives (fuels, etc.), catalysts, etc.

The substitution of PMT/vPvM substances is still an emerging topic, studied in particular in the Promisces project, financed by the European Union as part of the Horizon 2020 programme in support of the Green Deal, and in which Ineris is a partner. Coordinated by BRGM and involving 26 partners including RIVM and UBA, the project's more general aim is to assess the constraints that PMT and vPvM substances present in the soil-sediment-water system place on the circularity of resources (reuse of wastewater, sludge, etc.), and to increase this circularity by studying preventive measures and evaluating treatment solutions.

This new section of the Ineris substitution website is a milestone in this project and will make available to everyone the information likely to contribute to the early prevention of environmental contamination by these substances.

Sources : https://substitution-perfluores.ineris.fr/en

A NEW PROCESS TO AVOID THE USE OF PFAS IN PAPER FOOD PACKAGING

Guyenne Papier has developed a coating process that gives coated paper water and/or grease resistant properties. This technology is based on water-based coatings and does not use fluorinated resins, PVdC[1] or nanoparticles.

According to Guyenne Papier, the coated papers are heat-sealable, repulpable, recyclable (in accordance with EN 13430) and compatible with food contact. They form the Sunibarrier range, which consists of three products: Greenbee, Ladybee and Universalbee. According to their designer, the properties of these three products are complementary:

- Greenbee paper would be greaseproof and suitable for short-term use in a wet environment (wrapping paper for cold meats, tea bags) or long-term use for dry and fatty foods (snack cakes, etc.). This product would be biodegradable and suitable for industrial and domestic composting.

- Universalbee paper would be suitable for prolonged packaging of wet and fatty materials (salad trays, grated carrots, meat, cookies, sweets...)

- Ladybee paper is said to offer a water vapor barrier that allows important shelf-life dates to be reached for dry, non-fat products such as herbs, salt, sugar, etc.

According to Guyenne Papier, these solutions are a potential alternative to plastic packaging, but their cost is higher.

[1] phthalates can be used in the composition of PVdC (polyvinylidene chloride)

For more information:
SuniBarrier: Guyenne Papier

Guyenne Papier : un procédé d'enduction pour substituer le papier aux plastiques d'emballage | Techniques de l'Ingénieur (techniques-ingenieur.fr) *(in French)*

CENTEXBEL AWARDED FOR THE DEVELOPMENT OF BIOSOURCED AND BIODEGRADABLE INKS

Centexbel (the Belgian textile industry's scientific and technical center) has won the Techtextil Innovation award 2022 with an invention in the field of biobased inks and coatings.

The awarded ink is intended to be applied by screen printing on textiles. Its patented formulation, free of phthalates and alkylphenol ethoxylates, is composed of:

- a thermoplastic biopolymer (" polylactic acid " (PLA) is preferred)

- a plasticizer/surfactant (an ethoxylated fatty acid, for example polyethylene glycol monooleate)

- a bioplasticizer (preferably triacetin).

According to the inventors, the presence of the ethoxylated fatty acid would reduce the migration of the bioplasticiser[2].

According to Centexbel, the production of these inks would not require any solvent or dedicated equipment, which would result in a moderate market price.

[2] phthalate plasticizers are not chemically bound to the polymers in which they are incorporated, so they can migrate to the surface of the material and be emitted into the surrounding environment

For more information:
Centexbel wins techtexil innovation award 2022 | Centexbel - VKC

https://patents.google.com/patent/EP3875545A1/en

LANKEM INTRODUCES A NEW RANGE OF ALKYLPHENOL ETHOXYLATES (APEO)-FREE SURFACTANTS

Lankem has recently launched a new range of bio-based surfactants: the Bioloop range.

The surfactant in the Bioloop range consists of two hydrophobic sections (derived from soybean oil) linked together by a hydrophilic loop of polyethylene glycol (obtained from molasses[3]).

According to Lankem, these products offer excellent surfactant properties and can be used as alternatives to conventional synthetic nonionic surfactants including APEO (a number of APEO and their degradation products (nonylphenol) have been identified by the Member State Committee as SVHC[4] for their endocrine disrupting properties in the environment).

The Bioloop range is divided into two grades:

- Normal Grade for industrial processes where water clarity is not required (polymer emulsions, oils and lubricants, agrochemical additives, textile auxiliaries, hand and floor wipes)

- PG (Pure Grade) which corresponds to purified products intended for applications that require clarity in an aqueous medium (cosmetics, household and personal care products).

[3] molasses is a viscous syrup that is the residue of sugar production from sugar beet or sugar cane

[4] Substances of Very High Concern

For more information:
Speciality Chemicals Magazine NOV / DEC 2022 (joomag.com)

https://www.lankem.com/bioloop-surfactants

SEWPER® LINER: BISPHENOL-FREE PROTECTION FOR WASTEWATER INFRASTRUCTURE

Hydrogen sulphide (H_2S) naturally produced in sewage infrastructure can be released as a gas under certain conditions of acidity or turbulence. Thiobacillus bacteria in the system react with this hydrogen sulphide gas to form sulphuric acid, which corrodes sewer pipes and weakens concrete structures.

To protect the surfaces of concrete infrastructure, epoxy resin coatings (which may contain bisphenol A) are usually applied.

Imerys has developed Sewper® Liner, a calcium aluminate-based dry mortar employable as a protective coating against biogenic H_2S corrosion of newly constructed concrete sewage infrastructure (sewage treatment plant lift stations, canals and reservoirs exposed to H_2S released by incoming wastewater).

According to Imerys, the use of Sewper® Liner can increase the time between maintenance to 20 or even 30 years, compared to 3 to 7 years for epoxy resin.

Imerys attributes this protection to calcium aluminate's intrinsic resistance to the H_2S biogenic corrosion ecosystem, which inhibits acid production by bacteria.

For more information:
Sewper® Liner calcium aluminate solution for new concrete wastewater infrastructure - Imerys

RECENTLY PUBLISHED ON THE CHEMICALS SUBSTITUTION WEBSITE...

- Publication of the report Check Your Tech - A guide to PFAS in electronics
- Germany has submitted a dossier to ECHA to restrict a range of bisphenols
- List of SVHC: addition of two bisphenols, two PFAS and one phthalate
- POP Regulation (Persistent Organic Pollutants) includes two new PFAS in its list of substances subject to concentration limits in waste
- Reach : ECHA publishes PFAS restriction proposal
- Inclusion of several hundred PFAS in the SIN list
- Entry into force of a restriction on PFAS
- PFAS substitution tool available online

AGENDA

Paint & Coatings 2023

The Paint & Coatings exhibition will take place from 17 to 18 October 2023 in Milan. This event can be an opportunity to learn more about new technologies and innovative solutions in the various fields of coatings, inks and a range of allied and associated industries that could potentially replace bisphenols, phthalates and alkylphenol ethoxylates.

Paint & Coatings | 17-18 October 2023 | Milan (paint-coatings.it)

2023 International Symposium on Alternatives Assessment

The Association for the Advancement of Alternatives Assessment (A4) is hosting a symposium on October 25-26, 2023 on the topic of substitution of toxic chemicals of concern with the aim of highlighting:

- new approaches, including general practice guidance, assessment methods, and tools to enhance equity in alternatives assessment to reduce disproportionate impacts in the outcome of the assessment
- the development of new tools, resources, methods, and case experiences that are advancing the identification, evaluation, and adoption of safer, more sustainable, and feasible alternatives.

2023 International Symposium on Alternatives Assessment — Safer Alternatives

33rd Annual Vinyl Compounders Conference and Vinyl Sustainability Summit

The Plastics Industry Association (PLASTICS) and the Vinyl Sustainability Council (VSC) will host the 33rd annual Vinyl Compounders Conference and Vinyl Sustainability summit from 4 to 6 December 2023 in Austin (USA). The conference will be attended by vinyl resin and plasticizer producers, formulators, including potential producers/ distributors of alternatives to phthalates and bisphenols.

33rd Annual Vinyl Compounders Conference and Vinyl Sustainability Summit Event Details | Plastics Technology (ptonline.com)

If you have any questions, please contact us:

https://substitution.ineris.fr/en/contact

https://substitution.ineris.fr/en

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