HPL

Health and Safety

Information on Formaldehyde

HPL

HPL (according EN 438) are sheets consisting of layers of cellulose fibrous material (normally paper) impregnated with thermosetting resins and bonded together in a high pressure process. The process, defined as a simultaneous application of heat and high specific pressure, provides flowing and subsequent curing of the thermosetting resins to obtain a homogenous non-porous material with the required surface finish.

Basically more than 60 % of the HPL consist of paper and the remaining 30 to 40 % consist of cured phenol-formaldehyde resin for core layers and melamine-formaldehyde resin for the surface layer.

Both resins belonging to the group of thermosetting resins are irreversibly interreacted through cross linked chemical bonds formed during the curing process producing a non-reactive, stable material with characteristics which are totally different from those of its component parts.

HPL are supplied in sheet form in a variety of sizes, thicknesses and surface finishes.

HPL is classified as non-hazardous to humans or animals. There is no evidence of toxic or ecotoxic effects emanating from HPL. HPL surfaces are physiologically safe and approved for use in contact with foodstuffs.

Formaldehyde: new classification

In 2014 Formaldehyde (FA) has been reclassified as Carcinogenicity Cat 1B (not restricted to inhalation route), and Mutagenicity (germ cells) Cat.2. From 1 January 2016 this new legal obligation applies to producers, importers and downstream users.

Some facts

- Formaldehyde (FA) is naturally produced by all living organisms. FA is present in many different foods like apples, pears and lobster.
- Formaldehyde is naturally emitted by vegetation (leaves and wood) up to 10 million t/a globally; less than 1 % of these emissions came from manufacture and use of industrial formaldehyde.

- Formaldehyde is manufactured environmentally friendly: extremely energy efficient. No significant waste water. Emissions to air minimized (Source: www.formacare.org).
- An association between formaldehyde exposure and carcinogenicity has been studied globally for decades; Formaldehyde is one of the most thoroughly evaluated substances:
  - Although nasopharyngeal cancer (NPC) is one of the rarest of cancers in the EU, animal studies suggest a link to formaldehyde exposure at very high exposure levels
  - Epidemiology does not support a link to humans.
  - In Europe, regulators have based this new classification only on NPC

Indoor Air

Consumers may be exposed to trace amounts of formaldehyde in indoor air. A recent study estimates that 10-50% of the formaldehyde found in indoor air comes from organic uses such as candles, incense, gas heaters, cigarette smoke or natural wood itself. The rest stems from emissions from materials produced from formaldehyde-based resins or glues. Because formaldehyde-based resins are used in many construction and decorative products, these products can also emit very low levels of formaldehyde into the indoor air. HPL formaldehyde emission level (< 0,03 ppm) is far below the limit for wood based materials (E1 = 0,1 ppm). Due to their very low permeability HPL bonded to wood based substrates act as a barrier against possible formaldehyde emissions coming from the substrates. Industry innovation has led to a steady decrease in formaldehyde indoor air levels over the last 40 years, to levels that are often so low, that they are difficult to detect. A study by the World Health Organisation proposed an indoor air quality guideline of 0.1 mg/m³. The average levels of formaldehyde in homes are already well below the recommended guidelines. The wood panel industry has, however, developed a voluntary European standard (E1) based on the WHO recommendation for indoor air levels of formaldehyde.

CLP Regulation

In case of HPL the CLP (Harmonised Classification, Labelling and Packaging) Regulation is relevant only for Formaldehyde as raw material and for formaldehyde-based thermosetting resins and not for HPL. The CLP-Regulation for substances and mixtures harmonises the hazard classification and labelling of chemical substances and mixtures in the European Union and the European Economic Area.

The ICDLI

The International Committee of the Decorative Laminates Industry (ICDLI) is the European representative body of the producers of this outstanding surface material. Being a strong community it develops ideas, information and actions in order to expand the success of HPL and to explore new applications. The ICDLI is the international representation of the European laminates manufacturers and their suppliers. The ICDLI aims at creating a strong and successful European community of the manufacturers as well as at the continuation of the success story of decorative laminates.

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