

EU legislation: Cadmium in several products

Introduction

Cadmium compounds are carcinogenic agents, which are used in several ways for several product groups. EU Directive 91/338/EC (amending Directive 76/769/EC) restricts the use of cadmium in three types of applications: (1) cadmium used as pigment, (2) cadmium used as stabiliser in plastics, (3) cadmium used as coating of metallic plates and surfaces. The legislation on cadmium is especially relevant for plastic articles (toys, handicrafts, equipment etc.) where cadmium is often used as stabiliser. Cadmium is also used as pigment to give colour to a wide range of articles, and cadmium compounds are used in PVC coatings or prints for apparel, bags and promotional articles. Finally, cadmium is used as an anticorrosive coating of metallic plates especially in industrial applications (machinery).

➔ [Please see the external links](#) for the full text of the consolidated version of the Directive.

Outline of the legislation



Directive 91/338/EC establishes requirements for the use of cadmium in several products.

(1) Cadmium used as pigment

All products put on the European market in which cadmium is used as a pigment, must comply with the following restriction:

Cadmium may not be used as pigment in **concentrations exceeding 0.01% by mass** in the following materials (except products coloured for safety reasons), including textiles and textile accessories:

- polyvinylchloride (PVC),
- polyurethane (PUR),
- low-density polyethylene (LDPE) - except LDPE used for the production of coloured basepolymers - ,
- cellulose acetate (CA),
- cellulose acetate butyrate (CAB),
- epoxy resins,
- melamine-formaldehyde (MF) resins,
- urea-formaldehyde (UF) resins,
- unsaturated polyesters (UP),
- polyethylene terephthalate (PET),
- polybutylene terephthalate (PBTP),
- transparent/general-purpose polystyrene (PS),
- acrylonitrile methylmethacrylate,
- cross-linked polyethylene,
- high-impact polystyrene,
- polypropylene (PP).

It is furthermore prohibited to produce or market **paint** that contains a level of cadmium (as a pigment) higher than 0.01% by mass. If the paint contains a high level of zinc, the residual concentration of cadmium must be as low as possible, in any case not higher than 0.1% by mass.

(2) Cadmium used as stabiliser in plastic products

It is prohibited to produce or market products, made of polyvinylchloride or its copolymers, if cadmium is used as a stabilizer and if the cadmium content in the product is higher than 0.01% by mass. An exception is made for products in which cadmium is used for safety reasons.

(3) Cadmium used for plating metallic products

Directive 91/338/EEC prohibits the placing on the market of cadmium-plated products or components used for applications specified in the table below.

Use of cadmium and its compounds for plating metallic products or components of products is prohibited in the following sectors/ applications:
Equipment and machinery for food production, agriculture, cooling and freezing, printing and book-binding;
Equipment and machinery for the production of household goods, furniture, sanitary ware, central heating and air conditioning plant.
Equipment and machinery for the production of paper and board, textiles and clothing.

Within the meaning of this Directive, cadmium plating means any deposit or coating of metallic cadmium on a metallic surface.

Please note that former, national exceptions to the European Directive 91/334/EC on use of cadmium in Austria, Finland, Norway and Sweden are no longer in force.

How can you ensure that your products comply with the requirements?

Check with your supplier if cadmium has been used in the products purchased. If it is applied as a pigment in plastic products (or plastic applications / accessories of your products), check with the producer that the cadmium concentration does not exceed 0.01% by mass.

Similarly for plastic products where cadmium is used as stabiliser: make sure that the cadmium content in the product does not exceed 0.01% by mass.

If you purchase metallic equipment or machinery, check if any of the prohibitions on use of cadmium as metallic coating applies to your machinery's sector.

Summary

Substance (CAS number)*:	Cadmium (7440-43-9) and cadmium compounds
Products:	Plastic articles (toys, handicrafts, equipment etc.), textile or leather articles, ceramics, industrial applications (machinery).
Requirement:	The legislation restricts the use of cadmium (1) as pigment, (2) as stabilizer in plastics and (3) as plating of metallic products or components of products.
Status:	Existing legislation
Source:	Directives 76/769/EC, 91/338/EC, 99/51/EC (last relevant amendment)

* A CAS number is a unique identifying number assigned to chemicals by the Chemical Abstracts Service.

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