

EU legislation: Azo dyes in textile and leather articles

Introduction

Azo dyes are often used in the colouring process of textiles and leather. Some of these dyes have the capacity to release certain aryl amines which pose cancer risks. For this reason, the European Union laid down legislation to prevent exposure to these hazardous aryl amines. This indirectly implies that azo dyes containing aryl amines can no longer be used to dye textile and leather products that come into contact with the skin.

➔ [For more background information](#) on azo dyes, please refer to the related document.

Outline of the legislation



The European Commission restricts the use of azo dyes which can release one or more specified amines in textile and leather articles. The legislation is laid down in **Directive 2002/61/EC**, amending Directive 76/769/EEC on the marketing and use of dangerous substances and preparations.

Aim & scope

The aim of the Directive is to protect the consumers' health in the EU. The Directive is applicable to all textile and leather products that may come into **direct and prolonged contact with the human skin or oral cavity**.

The Directive provides some examples of products falling within its scope. Please note that this list is *not* exhaustive. The examples of products listed are:

- clothing, bedding, towels, hairpieces, wigs, hats, nappies and other sanitary items, sleeping bags
- footwear, gloves, wristwatch straps, handbags, purses/wallets, briefcases, chair covers, purses worn around the neck
- textile or leather toys and toys which include textile or leather garments
- yarn and fabrics intended for use by the final consumer

The Directive establishes that the products covered by the legislation may not contain the 22 amines listed in Table 1 in a concentration above the threshold limit of **30 ppm** (detection limit).

Please note that **all parts** of a product should comply with this limit, and that this limit applies to **each amine separately**. E.g. a textile shoelace of leather footwear needs to comply with the limit of 30 ppm, as well as the leather parts of footwear. It is not allowed to take the average concentration of a certain amine in the complete product.

Nevertheless, there is one **exception**: for textile articles made of recycled fibres, the threshold limit equals 70 ppm for the listed amines if the amines are released by residues deriving from previous dyeing of the same fibres.

Table 1. List of aromatic amines

	CAS number ¹	Index Number	EC number	Substance name
1	92-67-1		202-177-1	Biphenyl-4-ylamin 4-aminobifenyyl Xenylamine
2	92-87-5	612-042-00-2	202-199-1	Benzidine
3	95-69-2		202-441-6	4-chloro-o-toluidine

¹ CAS numbers are internationally recognised unique identification numbers assigned to chemical substances.

4	91-59-8	612-022-00-3	202-080-4	2-naphthylamine
5	97-56-3	611-006-00-3	202-591-2	o-aminoazotoluene 4-amino-2',3-dimethylazobenzene 4-o-tolylazo-o-toluidine
6	99-55-8		202-765-8	5-nitro-o-toluidine
7	106-47-8		203-401-0	4-chloroaniline
8	615-05-4		210-406-1	4-methoxy-m-phenylenediamine
9	101-77-9	612-051-00-1	202-974-4	4,4'-methylenedianiline 4,4'-diaminodiphenylmethane
10	91-94-1	612-068-00-4	202-109-0	3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine
11	119-90-4	612-036-00-X	204-355-4	3,3'-dimethoxybenzidine o-dianisidine
12	119-93-7	612-041-00-7	204-358-0	3,3'-dimethylbenzidine 4,4'-bi-o-toluidine
13	838-88-0	612-085-00-7	212-658-8	4,4'-methylenedi-o-toluidine
14	120-71-8		204-419-1	6-methoxy-m-toluidine p-cresidine
15	101-14-4	612-078-00-9	202-918-9	4,4'-methylene-bis- (2-chloro-aniline) 2,2'-dichloro-4,4'-methylenedianiline
16	101-80-4		202-977-0	4,4'-oxydianiline
17	139-65-1		205-370-9	4,4'-thiodianiline
18	95-53-4	612-091-00-X	202-429-0	o-toluidine 2-aminotoluene
19	95-80-7	612-099-00-3	202-453-1	4-methyl-m-phenylenediamine
20	137-17-7		205-282-0	2,4,5-trimethylaniline
21	90-04-0	612-035-00-4	201-963-1	o-anisidine 2-methoxyaniline
22	60-09-3	611-008-00-4	200-453-6	4-amino azobenzene

REACH

On 1 June 2007 the new EU Regulation (EC) 1907/2006 on Chemicals entered into force. This Regulation concerns a single integrated system for the registration, evaluation and authorisation of chemicals (REACH).

The provisions set by this legislation place obligations and restrictions on producers, importers and downstream users of chemicals depending on the properties of the substance and the quantities they handle per year.

Please note that, as per 1 June 2009, Directive 76/769/EEC will be repealed. The requirements of this Directive will be implemented in the REACH Regulation. It is expected that this will not affect the content of the existing limitations.

➔ For more information on [REACH](#), refer to the related document.

Test methods

Test methods for azo dyes have been established in Directive 2004/21/EC, amending Directive 76/769/EEC. These are the official test methods in the EU, and should be used to test your products when brought on the EU market.

The following test methods are listed in the Directive:

- CEN Leather — Chemical tests — Determination of certain azo colorants in dyed leathers. Reference: CEN ISO/TS 17234:2003

- CEN Textiles — Methods for the determination of certain aromatic amines derived from azo colorants — Part 1: Detection of the use of certain azo colorants accessible without extraction. Reference: EN 14362-1:2003
- CEN Textiles — Methods for determination of certain aromatic amines derived from azo colorants — Part 2: Detection of the use of certain azo colorants accessible by extracting the fibres. Reference: EN 14362-2:2003

➡ To order these methods, please see the external link to the European Committee for Standardisation (CEN). On that website you can find links to the national standardisations institutes where you can order the standards.

Summary table

Substance:	Azo dyes which may release one or more of the aromatic amines listed.
CAS Number:	See table above
Products:	Textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity.
Requirement:	Not above detection limit (i.e. above 30 ppm)
Status:	Existing harmonised legislation
Source:	Directive 76/769/EEC as amended by 2002/61/EEC

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