

**32.04 - Synthetic organic colouring matter, whether or not chemically defined; preparations as specified in Note 3 to this Chapter based on synthetic organic colouring matter; synthetic organic products of a kind used as fluorescent brightening agents or as luminophores, whether or not chemically defined (+).**

- Synthetic organic colouring matter and preparations based thereon as specified in Note 3 to this Chapter :

3204.11 - - Disperse dyes and preparations based thereon

3204.12 - - Acid dyes, whether or not premetallised, and preparations based thereon; mordant dyes and preparations based thereon

3204.13 - - Basic dyes and preparations based thereon

3204.14 - - Direct dyes and preparations based thereon

3204.15 - - Vat dyes (including those usable in that state as pigments) and preparations based thereon

3204.16 - - Reactive dyes and preparations based thereon

3204.17 - - Pigments and preparations based thereon

3204.19 - - Other, including mixtures of colouring matter of two or more of the subheadings 3204.11 to 3204.19

3204.20 - Synthetic organic products of a kind used as fluorescent brightening agents

3204.90 - Other

**(I) SYNTHETIC ORGANIC COLOURING MATTER,  
WHETHER OR NOT CHEMICALLY DEFINED;  
PREPARATIONS AS SPECIFIED IN NOTE 3 TO THIS CHAPTER BASED  
ON SYNTHETIC ORGANIC COLOURING MATTER**

Synthetic organic colouring matter is generally obtained from oils or other products of the distillation of coal tar.

This heading applies, *inter alia*, to :

- (A) Unmixed synthetic organic colouring matter (whether or not chemically defined compounds) and synthetic organic colouring matter diluted with substances which have no dyeing properties (e.g., anhydrous sodium sulphate, sodium chloride, dextrin, starch) to decrease or standardise their colouring power. The addition of small quantities of surface-active products to encourage penetration and fixation of the dye does not affect the classification of colouring matter. Colouring matter of these descriptions is usually in the form of powder, crystals, pastes, etc.

Synthetic organic colouring matter put up in forms or packings for retail sale is classified in **heading 32.12** (see Part (C) of the Explanatory Note to that heading).

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- (B) Different types of synthetic organic colouring matter mixed together.
- (C) Concentrated dispersions of synthetic organic colouring matter in plastics, natural rubber, synthetic rubbers, plasticisers or other media. These dispersions are usually in the form of small plates or lumps and are used as raw materials for colouring rubber, plastics, etc., in the mass.
- (D) Mixtures of synthetic organic colouring matter with relatively large quantities of surface-active products, or with organic binders, which are used for colouring in the mass plastics, etc., or as ingredients in preparations for printing textiles. They are normally in the form of pastes.
- (E) Other preparations based on synthetic organic colouring matter of a kind used for colouring any material or used as ingredients in the manufacture of colouring preparations. However, the preparations referred to in the last sentence of Note 3 to this Chapter are **excluded**.

The various types of synthetic organic colouring matter classified here (whether as dyes or pigments) include :

- (1) Nitroso or nitro compounds.
- (2) Mono- or polyazo compounds.
- (3) Stilbenes.
- (4) Thiazoles (e.g., thioflavine).
- (5) Carbazoles.
- (6) Quinoneimines, e.g., azines (indulines, nigrosines, eurhodines, safranines, etc.), oxazines (galloxyanines, etc.) and thiazines (methylene blue, etc.); also indophenols or indamines.
- (7) Xanthenes (pyronine, fluorescein, eosins, rhodamines, etc.).
- (8) Acridines, quinolines (e.g., cyanines, isocyanines, cryptocyanines).
- (9) Di- or triphenylmethanes, e.g., auramine and fuchsine.
- (10) Hydroxyquinones and anthraquinones, e.g., alizarin.
- (11) Sulphonated indigoids.

- (12) Other vat dyes or pigments (e.g., synthetic indigo), other sulphur dyes or pigments, indigosols, etc.
- (13) Phosphotungstic greens, etc. (see third paragraph of the Explanatory Note to heading 32.05).
- (14) Phthalocyanines (even if crude) and their metallic compounds, including their sulphonated derivatives.
- (15) Carotenoids obtained by synthesis (e.g.,  $\beta$ -carotene, 8'-apo- $\beta$ -carotenal, 8'-apo- $\beta$ -carotenic acid, ethyl 8'-apo- $\beta$ -carotenate, methyl 8'-apo- $\beta$ -carotenate and canthaxanthin).

Certain azo colouring matters are often put up in the form of mixtures of stabilised diazonium salts and couplers which produce an insoluble azo dye on the fibre itself. These mixtures are also classified in this heading.

The heading **excludes**, however, separate diazonium salts (whether or not stabilised or diluted to standard strengths) which may be applied to the fibre separately from the coupler in the course of dyeing to produce the same colouring matter (**Chapter 29**).

This heading also **excludes** the intermediate products, which are not themselves dyes, obtained at different stages in the production of colouring matter. These intermediate products (e.g., monochloroacetic acid, benzenesulphonic or naphthol- sulphonic acids, resorcinol, chloronitrobenzenes, nitro- or nitrosophenols, nitrosoamines, aniline, nitrated or sulphonated amine derivatives, benzidine, aminonaphtholsulphonic acids, anthraquinone, methylanilines) are classified in **Chapter 29**. They are quite different from certain crude products classified here, such as phthalocyanines which are chemically "finished" and require only simple physical processing to obtain their optimum tinting power.

Synthetic organic colouring matter may be soluble or insoluble in water. It has almost completely replaced natural organic colouring matter, particularly for dyeing or printing textiles, dyeing hides or skins, paper or wood. It is also used to prepare colour lakes (heading 32.05), colours of headings 32.08 to 32.10, 32.12 and 32.13, inks of heading 32.15, and for colouring plastics, rubber, waxes, oils, photographic emulsions, etc.

Certain of these substances are also used as laboratory reagents or for medical purposes.

Substances which in practice are not used for their dyeing properties are **excluded**, e.g., azulenes (**heading 29.02**); trinitrophenol (picric acid) and dinitro-ortho-cresol (**heading 29.08**); hexanitrodiphenylamine (**heading 29.21**); methyl orange (**heading 29.27**); bilirubin, biliverdin and porphyrins (**heading 29.33**); acriflavine (**heading 38.24**).

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### (II) SYNTHETIC ORGANIC PRODUCTS OF A KIND USED AS FLUORESCENT BRIGHTENING AGENTS OR AS LUMINOPHORES, WHETHER OR NOT CHEMICALLY DEFINED

- (1) **Organic products of a kind used as fluorescent brightening agents** are synthetic organic products which absorb ultraviolet rays and give off visible blue radiations, thus intensifying the apparent whiteness of white articles. They generally consist of stilbene derivatives.
- (2) **Organic products of a kind used as luminophores** are synthetic products which, under the action of light rays, produce a luminescent or fluorescent effect.

Some of these products also have the character of colouring matter. An example of these luminophores is rhodamine B in plastics, which produces a red fluorescence. It is generally in the form of powder.

Most organic products of a kind used as luminophores (e.g., diethyl dihydroxyterephthalate and salicylaldazine) are not colouring matter. They are added to colouring pigments to increase their brilliance. These products remain in this heading even when chemically defined but the same chemicals in a non-luminescent form (e.g., less pure, different crystalline structure) are **excluded (Chapter 29)**. Thus salicylaldazine of the kind used as a blowing agent for rubber falls in **heading 29.28**.

Organic products of a kind used as luminophores mixed together or with synthetic organic colouring matter fall in this heading. When mixed with inorganic pigments they are **excluded (heading 32.06)**.



#### Subheading Explanatory Note.

#### Subheadings 3204.11 to 3204.19

Synthetic organic colouring matter and preparations based thereon as specified in Note 3 to this Chapter are subdivided on the basis of their application or use. The products of these subheadings are described below.

**Disperse dyes** are substantially water-insoluble, non-ionic dyes which are applied to hydrophobic fibres from aqueous dispersion. They are used on polyester, nylon or other polyamides, cellulose acetate or acrylic fibres and for surface-dyeing of certain thermoplastics.

**Acid dyes** are water-soluble anionic dyes which are applied to nylon, wool, silk, modacrylic fibres or leather.

**Mordant dyes** are water-soluble dyes which require the use of a mordant (for example, chromium salts) to bind them to textile fibres.

**Basic dyes** are water-soluble cationic dyes which are applied to modacrylic, modified nylon or modified polyester fibres or to unbleached paper. Their original use was for dyeing silk, wool or tannin-mordanted cotton, where brightness of shade was more important than colour-fastness. Some basic dyes show biological activity and are used in medicine as antiseptics.

**Direct dyes** are water-soluble anionic dyes which, in aqueous solution in the presence of electrolytes, are substantive to cellulosic fibres. They are used for dyeing cotton, regenerated cellulose, paper, leather and, to a lesser extent, nylon. In order to improve their colour-fastness, direct-dyed fabrics are often subjected to an after treatment, such as diazotisation and coupling *in situ*, chelation with metal salts or treatment with formaldehyde.

**Vat dyes** are water-insoluble dyes which are reduced in an alkaline bath to the water-soluble leuco form and in that form are applied, mainly to cellulosic fibres, after which they are reoxidised to the insoluble coloured keto form.

**Reactive dyes** are dyes that attach themselves to the fibres, usually cotton, wool or nylon, by reacting with functional groups on the fibre molecules to form a covalent bond.

**Pigments** are synthetic organic colours which retain their crystalline or particulate form throughout the application process (in contrast to dyes, which lose their crystalline structure by dissolution or vaporisation, although they may regain it during a later stage of the dyeing process). They include insoluble metal salts of some of the above-mentioned dyes.

Subheading 3204.19 covers *inter alia* :

- mixtures described in Note 2 to this Chapter;
- **solvent dyes**, which are dissolved in organic solvents and applied to synthetic fibres, for example, nylon, polyester or acrylic fibres, or used in gasoline, varnishes, stains, inks, waxes, etc.

Some of these synthetic organic colouring matters belong to two or more application classes falling in different subheadings. They are classified as follows :

- Those which, in the state in which they are presented, are usable both as vat dyes and as pigments are to be classified as vat dyes in subheading 3204.15.
- Others which are potentially classifiable in two or more of the specific subheadings 3204.11 to 3204.17 are to be classified in the latest applicable subheading.
- Those which are potentially classifiable in one of the specific subheadings 3204.11 to 3204.17 and in the residual subheading 3204.19 are to be classified in the specific subheading.

Mixtures of synthetic organic colouring matter and preparations based on such mixtures are classified as follows :

- Mixtures of two or more products of the same subheading are to be classified in that subheading.
- Mixtures of two or more products of different subheadings (3204.11 to 3204.19) are to be classified in the residual subheading 3204.19.

Fluorescent brightening agents, sometimes called “ white dyes ”, are excluded from subheadings 3204.11 to 3204.19, being more specifically provided for in subheading 3204.20.