

**CPC****COOPERATIVE PATENT CLASSIFICATION****C09B**

**ORGANIC DYES OR CLOSELY-RELATED COMPOUNDS FOR PRODUCING DYES; MORDANTS; LAKES** (fermentation or enzyme-using processes to synthesise a desired chemical compound [C12P](#))

**NOTE**

In this subclass, in the absence of an indication to the contrary, a compound is classified in the last appropriate place

**WARNING**

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

<a href="#">C09B 23/01</a>	covered by	<a href="#">C09B 23/0008</a>	to
<a href="#">C09B 23/0091</a>			
<a href="#">C09B 29/01</a>	" "	<a href="#">C09B 29/0003</a>	to
<a href="#">C09B 29/0022</a>			
<a href="#">C09B 29/03</a>	" "	<a href="#">C09B 29/0007</a>	
<a href="#">C09B 29/033</a>	" "	<a href="#">C09B 29/0025</a>	
<a href="#">C09B 29/036</a>	" "	<a href="#">C09B 29/0029</a>	
<a href="#">C09B 29/039</a>	" "	<a href="#">C09B 29/0074</a>	to
<a href="#">C09B 29/0081</a>			
<a href="#">C09B 29/042</a>	" "	<a href="#">C09B 29/0085</a>	
<a href="#">C09B 29/045</a>	" "	<a href="#">C09B 29/0088</a>	
<a href="#">C09B 29/048</a>	" "	<a href="#">C09B 29/0092</a>	
<a href="#">C09B 29/085</a>	" "	<a href="#">C09B 29/0003</a> ,	
<a href="#">C09B 29/0801</a>	to	<a href="#">C09B 29/0848</a>	
<a href="#">C09B 29/09</a>	" "	<a href="#">C09B 29/0025</a> ,	
<a href="#">C09B 29/0801</a>	to	<a href="#">C09B 29/0848</a>	
<a href="#">C09B 29/15</a>	" "	<a href="#">C09B 29/103</a>	
<a href="#">C09B 29/40</a>	" "	<a href="#">C09B 29/3608</a>	to
<a href="#">C09B 29/3613</a>			
<a href="#">C09B 29/42</a>	" "	<a href="#">C09B 29/3617</a>	to
<a href="#">C09B 29/3639</a>			
<a href="#">C09B 29/44</a>	" "	<a href="#">C09B 29/3643</a>	
<a href="#">C09B 29/46</a>	" "	<a href="#">C09B 29/3652</a>	
<a href="#">C09B 29/48</a>	" "	<a href="#">C09B 29/3656</a>	
<a href="#">C09B 29/50</a>	" "	<a href="#">C09B 29/366</a>	
<a href="#">C09B 29/52</a>	" "	<a href="#">C09B 29/3665</a>	
<a href="#">C09B 33/13</a>	" "	<a href="#">C09B 33/12</a>	
<a href="#">C09B 46/00</a>	" "	<a href="#">C09B 27/00</a>	to
<a href="#">C09B 45/00</a>			
<a href="#">C09B 67/02</a>	" "	<a href="#">C09B 67/0097</a>	
<a href="#">C09B 67/04</a>	" "	<a href="#">C09B 67/0001</a>	
<a href="#">C09B 67/06</a>	" "	<a href="#">C09B 67/0003</a>	

**C09B**

(continued)

C09B 67/08	"	"	<a href="#">C09B 67/0004</a>
C09B 67/10	"	"	<a href="#">C09B 67/0014</a>
C09B 67/12	"	"	<a href="#">C09B 67/0016</a>
C09B 67/14	"	"	<a href="#">C09B 67/0017</a>
C09B 67/16	"	"	<a href="#">C09B 67/0019</a>
C09B 67/18	"	"	<a href="#">C09B 67/002</a>
C09B 67/20	"	"	<a href="#">C09B 67/006</a>
C09B 67/22	"	"	<a href="#">C09B 67/0033</a>
C09B 67/24	"	"	<a href="#">C09B 67/0072</a>
C09B 67/26	"	"	<a href="#">C09B 67/0073</a>
C09B 67/28	"	"	<a href="#">C09B 67/0077</a>
C09B 67/30	"	"	<a href="#">C09B 67/0078</a>
C09B 67/32	"	"	<a href="#">C09B 67/0075</a>
C09B 67/34	"	"	<a href="#">C09B 67/0076</a>
C09B 67/36	"	"	<a href="#">C09B 67/0079</a>
C09B 67/38	"	"	<a href="#">C09B 67/008</a>
C09B 67/40	"	"	<a href="#">C09B 67/0082</a>
C09B 67/42	"	"	<a href="#">C09B 67/0071</a>
C09B 67/44	"	"	<a href="#">C09B 67/0083</a>
C09B 67/46	"	"	<a href="#">C09B 67/0084</a>
C09B 67/48	"	"	<a href="#">C09B 67/0025</a>
C09B 67/50	"	"	<a href="#">C09B 67/0026</a>
C09B 67/52	"	"	<a href="#">C09B 67/0027</a>
C09B 67/54	"	"	<a href="#">C09B 67/0096</a>

**Anthracene dyes****C09B 1/00****Dyes with anthracene nucleus not condensed with any other ring**

C09B 1/002

- {containing onium groups}

C09B 1/005

- {Di-anthraquinonyl and derivative compounds}

C09B 1/007

- {Seleno-anthraquinones}

C09B 1/02

- Hydroxy-anthraquinones; Ethers or esters thereof {(C09B 1/007 takes precedence)}

C09B 1/04

- . Preparation by synthesis of the nucleus

C09B 1/06

- . Preparation from starting materials already containing the anthracene nucleus

C09B 1/08

- . . Dyes containing only OH-groups

C09B 1/10

- . . Dyes containing halogen

C09B 1/12

- . . Dyes containing sulfonic acid groups

C09B 1/14

- . . Dyes containing ether groups

C09B 1/16

- Amino-anthraquinones {(C09B 1/007 takes precedence)}

- C09B 1/18 . . . Preparation by synthesis of the nucleus
- C09B 1/20 . . . Preparation from starting materials already containing the anthracene nucleus
- C09B 1/201 . . . {Dyes with no other substituents than the amino groups}
- C09B 1/202 . . . {sulfonated}
- C09B 1/203 . . . . {only sulfonated in the anthracene nucleus}
- C09B 1/204 . . . . {only sulfonated in a substituent}
- C09B 1/205 . . . {Dyes with an unsaturated C on the N atom attached to the nucleus (C=O and C=S, [C09B 1/36](#))}
- C09B 1/206 . . . {Dyes with amino groups substituted by heterocyclic radicals (triazinic or analogous heterocyclic radical, [C09B 1/46](#))}
- C09B 1/207 . . . {Dyes with amino groups and with onium groups}
- C09B 1/208 . . . {Dyes with amino groups substituted by inorganic radicals}
- C09B 1/22 . . . Dyes with unsubstituted amino groups
- C09B 1/24 . . . . sulfonated
- C09B 1/26 . . . Dyes with amino groups substituted by hydrocarbon radicals
- C09B 1/262 . . . . {Dyes with no other substituents than the substituted amino groups}
- C09B 1/264 . . . . {sulfonated}
- C09B 1/266 . . . . . {only sulfonated in the anthracene nucleus}
- C09B 1/268 . . . . . {only sulfonated in a substituent}
- C09B 1/28 . . . . substituted by alkyl, aralkyl or cyclo alkyl groups
- C09B 1/285 . . . . . {Dyes with no other substituents than the amino groups}
- C09B 1/30 . . . . . sulfonated
- C09B 1/303 . . . . . . {only sulfonated in the anthracene nucleus}
- C09B 1/306 . . . . . . {only sulfonated in a substituent}
- C09B 1/32 . . . . substituted by aryl groups ([anthrimides C09B 1/48](#))
- C09B 1/325 . . . . . {Dyes with no other substituents than the amino groups}
- C09B 1/34 . . . . . sulfonated
- C09B 1/343 . . . . . . {only sulfonated in the anthracene nucleus}
- C09B 1/346 . . . . . . {only sulfonated in a substituent}
- C09B 1/36 . . . Dyes with acylated amino groups
- C09B 1/363 . . . . {the acyl groups being residues of a dicarboxylic compound forming a bridge between two anthraquinones}
- C09B 1/366 . . . . {Urethan derivatives}
- C09B 1/38 . . . . Urea and thiourea derivatives
- C09B 1/40 . . . . the acyl groups being residues of an aliphatic or araliphatic carboxylic acid
- C09B 1/405 . . . . . {dicarboxylic}
- C09B 1/42 . . . . the acyl groups being residues of an aromatic carboxylic acid
- C09B 1/425 . . . . . {dicarboxylic}
- C09B 1/43 . . . . . Dicarboxylic acids

- C09B 1/44 . . . . the acyl groups being residues of a heterocyclic carboxylic acid
- C09B 1/445 . . . . . {dicarboxylic}
- C09B 1/46 . . . . the acyl groups being residues of cyanuric acid or an analogous heterocyclic compound
- C09B 1/467 . . . . . attached to two or more anthraquinone rings
- C09B 1/473 . . . . the acyl groups being residues of a sulfonic acid
- C09B 1/48 . . . Anthrimides
- C09B 1/50 . Amino-hydroxy-anthraquinones; Ethers and esters thereof {(C09B 1/007 takes precedence)}
- C09B 1/501 . . {containing onium groups}
- C09B 1/503 . . unsubstituted amino-hydroxy anthraquinone
- C09B 1/5035 . . . {only amino and hydroxy groups}
- C09B 1/51 . . N-substituted amino-hydroxy anthraquinone
- C09B 1/512 . . . {only amino and hydroxy groups}
- C09B 1/514 . . . N-aryl derivatives (N-aralkyl derivatives C09B 1/515)
- C09B 1/5145 . . . . {only amino and hydroxy groups}
- C09B 1/515 . . . N-alkyl, N-aralkyl or N-cycloalkyl derivatives
- C09B 1/5155 . . . . {only amino and hydroxy groups}
- C09B 1/516 . . . N-acylated derivatives
- C09B 1/5165 . . . . {only amino and hydroxy groups}
- C09B 1/52 . . sulfonated
- C09B 1/521 . . . {unsubstituted amino and hydroxy groups}
- C09B 1/523 . . . {N-substituted amino and hydroxy anthraquinone}
- C09B 1/525 . . . . {N-aryl derivatives}
- C09B 1/526 . . . . {N-alkyl, N-aralkyl or N-cycloalkyl derivatives}
- C09B 1/528 . . . . {N-acyl derivatives}
- C09B 1/54 . . etherified
- C09B 1/542 . . . {Anthraquinones with aliphatic, cycloaliphatic, araliphatic or aromatic ether groups}
- C09B 1/545 . . . {Anthraquinones with aliphatic, cycloaliphatic or araliphatic ether groups}
- C09B 1/547 . . . {Anthraquinones with aromatic ether groups}
- C09B 1/56 . Mercapto-anthraquinones {(C09B 1/007 takes precedence)}
- C09B 1/565 . . {Mercaptoanthraquinones containing onium groups}
- C09B 1/58 . . with mercapto groups substituted by aliphatic, cycloaliphatic, araliphatic or aryl radicals

**NOTE**

After the notation of groups C09B 1/58, C09B 1/585, C09B 1/60 and separated therefrom by a + sign, notations concerning the nature of other substituents may be added. These notations are selected from the groups:

[C09B 1/02](#).

[C09B 1/16](#).

## C09B 1/58

(continued)

[C09B 1/22](#) . .[C09B 1/28](#) . . .[C09B 1/32](#) . . .[C09B 1/36](#) . .[C09B 1/50](#) .

and have the same meaning as the corresponding groups

## C09B 1/585

. . . {substituted by aryl radicals}

## C09B 1/60

. . . substituted by aliphatic, cycloaliphatic or araliphatic radicals

## C09B 1/62

. . with mercapto groups substituted by a heterocyclic ring

**C09B 3/00****Dyes with an anthracene nucleus condensed with one or more carbocyclic rings**

## C09B 3/02

. Benzathrones

## C09B 3/04

. . Preparation by synthesis of the nucleus

## C09B 3/06

. . Preparation from starting materials already containing the benzanthrone nucleus

## C09B 3/08

. . . by halogenation

## C09B 3/10

. . . Amino derivatives

## C09B 3/12

. . Dibenzanthronyls

## C09B 3/14

. Perylene derivatives

## C09B 3/16

. . Preparation by synthesis of the nucleus

## C09B 3/18

. . Preparation from starting materials already containing the perylene nucleus

## C09B 3/20

. . . by halogenation

## C09B 3/22

. Dibenzanthrones; Isodibenzanthrones

## C09B 3/24

. . Preparation by synthesis of the nucleus

## C09B 3/26

. . . from dibenzanthronyls

## C09B 3/28

. . . from perylene derivatives

## C09B 3/30

. . Preparation from starting materials already containing the dibenzanthrone or isodibenzanthrone nucleus

## C09B 3/32

. . . by halogenation

## C09B 3/34

. . . by oxidation

## C09B 3/36

. . . by etherification of hydroxy compounds

## C09B 3/38

. . . by introduction of hydrocarbon or acyl residues into amino groups

## C09B 3/40

. Pyranthrones

## C09B 3/42

. . Preparation by synthesis of the nucleus

## C09B 3/44

. . Preparation from starting materials already containing the pyranthrone nucleus

## C09B 3/46

. . . by halogenation

## C09B 3/48

. . . Amino derivatives

## C09B 3/50

. Dibenzopyrenequinones

## C09B 3/52

. . Preparation by synthesis of the nucleus

- C09B 3/54 . . Preparation from starting materials already containing the dibenzopyrenequinone nucleus
- C09B 3/56 . . . Amino derivatives
- C09B 3/58 . Benzanthraquinones
- C09B 3/60 . Anthanthrones
- C09B 3/62 . . Preparation by synthesis of the nucleus
- C09B 3/64 . . Preparation from starting materials already containing the anthanthrone nucleus
- C09B 3/66 . . . by halogenation
- C09B 3/68 . . . Amino derivatives
- C09B 3/70 . Benzo-, naphtho-, and anthra-dianthrones
- C09B 3/72 . . Preparation by synthesis of the nucleus
- C09B 3/74 . . Preparation from starting materials already containing the benzo, naphtho-, or anthradianthrone nucleus
- C09B 3/76 . . . by halogenation
- C09B 3/78 . Other dyes in which the anthracene nucleus is condensed with one or more carbocyclic rings
- C09B 3/80 . . Preparation by synthesis of the nucleus
- C09B 3/82 . . Preparation from starting materials already containing the condensed anthracene nucleus
  
- C09B 5/00** **Dyes with an anthracene nucleus condensed with one or more heterocyclic rings with or without carbocyclic rings**
- C09B 5/002 . {the heterocyclic rings being condensed in peri position and in 1-2 or 2-3 position}
- C09B 5/004 . . {only O-containing hetero rings}
- C09B 5/006 . . {only S-containing hetero rings}
- C09B 5/008 . . {only N-containing hetero rings}
- C09B 5/02 . the heterocyclic ring being {only} condensed in peri position
- C09B 5/022 . . {not provided for in one of the sub groups [C09B 5/04](#) to [C09B 5/20](#)}
- C09B 5/024 . . . {only O-containing hetero rings}
- C09B 5/026 . . . {only S-containing hetero rings}
- C09B 5/028 . . . {only N-containing hetero rings}
- C09B 5/04 . . Pyrazolanthrones
- C09B 5/06 . . . Benzanthranyl-pyrazolanthrone condensation products
- C09B 5/08 . . . Dipyrazolanthrones
- C09B 5/085 . . . . {Condensation products of dipyrazolanthrones}
- C09B 5/10 . . Isothiazolanthrones; Isoxazolanthrones; Isoselenazolanthrones
- C09B 5/12 . . Thiophenanthrones
- C09B 5/14 . . Benz-azabenzanthrones (anthrapyridones)
- C09B 5/16 . . Benz-diazabenzanthrones, e.g. anthrapyrimidones
- C09B 5/18 . . Coeroxene; Coerthiene; Coeramidene; Derivatives thereof

- C09B 5/20 . . Flavanthrones
- C09B 5/22 . . . Preparation from starting materials already containing the flavanthrone nucleus
- C09B 5/24 . the heterocyclic rings being {only} condensed with an anthraquinone nucleus in 1-2 or 2-3 position
- C09B 5/2409 . . {not provided for in one of the sub groups [C09B 5/26](#) to [C09B 5/62](#)}
- C09B 5/2418 . . . {only oxygen-containing hetero rings}
- C09B 5/2427 . . . {only sulfur-containing hetero rings}
- C09B 5/2436 . . . {only nitrogen-containing hetero rings}
- C09B 5/2445 . . . . {Phtaloyl isoindoles}
- C09B 5/2454 . . . . . {5,6 phtaloyl dihydro isoindoles}
- C09B 5/2463 . . . . . {1,3 oxo or imino derivatives}
- C09B 5/2472 . . . . . {1,3 dioxo derivatives}
- C09B 5/2481 . . . . . {1-oxo-3-imino derivatives}
- C09B 5/249 . . . . . {1,3 diimino derivatives}
- C09B 5/26 . . Carbazoles of the anthracene series
- C09B 5/28 . . . Anthrimide carbazoles
- C09B 5/30 . . 1,2 azoles of the anthracene series
- C09B 5/32 . . 1.3 azoles of the anthracene series
- C09B 5/34 . . Anthraquinone acridones or thioxanthrones
- C09B 5/342 . . . {Anthraquinone thioxanthrones}
- C09B 5/345 . . . . {Compounds containing thioxanthrone and carbazole rings}
- C09B 5/347 . . . {Anthraquinone acridones}
- C09B 5/36 . . . Amino acridones
- C09B 5/38 . . . Compounds containing acridone and carbazole rings
- C09B 5/40 . . . Condensation products of benzanthranyl-amino-anthraquinones
- C09B 5/42 . . Pyridino anthraquinones
- C09B 5/44 . . Azines of the anthracene series
- C09B 5/46 . . . Para-diazines
- C09B 5/48 . . . . Bis-anthraquinonediazines (indanthrone)
- C09B 5/50 . . . . . Preparation by alkaline melting of 2-amino-anthraquinones
- C09B 5/52 . . . . . Preparation by condensation of 1.2-halogeno-amino-anthraquinones
- C09B 5/54 . . . . . Preparation from 2-amino-anthrahydroquinones
- C09B 5/56 . . . . . Preparation from starting materials already containing the indanthrene nucleus
- C09B 5/58 . . . . . by halogenation
- C09B 5/60 . . . Thiazines; Oxazines
- C09B 5/62 . . Cyclic imides or amidines of peri-dicarboxylic acids of the anthracene, benzanthrene, or perylene series

**C09B 6/00 Anthracene dyes not provided for above**

**C09B 7/00****Indigoid Dyes**

C09B 7/02

- Bis-indole indigos

C09B 7/04

- . Halogenation thereof

C09B 7/06

- Indone-thionaphthene indigos

C09B 7/08

- Other indole-indigos

C09B 7/10

- Bis-thionaphthene indigos

C09B 7/12

- Other thionaphthene indigos

**C09B 9/00****Esters or ester-salts of leuco compounds of vat dyestuffs**

C09B 9/02

- of anthracene dyes

C09B 9/04

- of indigoid dyes

**C09B 11/00****Diaryl- or triarylmethane dyes**

C09B 11/02

- derived from diarylmethanes

C09B 11/04

- derived from triarylmethanes, {i.e. central C-atom is substituted by amino, cyano, alkyl}

C09B 11/06

- . Hydroxy derivatives of triarylmethanes in which at least one OH group is bound to an aryl nucleus {and their ethers or esters}

C09B 11/08

- . . Phthaleins; {Phenolphthaleins; Fluorescein}

C09B 11/10

- . Amino derivatives of triarylmethanes

C09B 11/12

- . . without any OH group bound to an aryl nucleus

C09B 11/14

- . . . Preparation from aromatic aldehydes, aromatic carboxylic acids or derivatives thereof and aromatic amines

C09B 11/16

- . . . Preparation from diarylketones or diarylcarbinols, {e.g. benzhydrol}

C09B 11/18

- . . . Preparation by oxidation

C09B 11/20

- . . . Preparation from other triarylmethane derivatives, {e.g. by substitution, by replacement of substituents (for dyesalts of triarylmethane dyes [C09B 69/06](#))}

C09B 11/22

- . . . containing OH groups bound to an aryl nucleus {and their ethers and esters}

C09B 11/24

- . . . Phthaleins containing amino groups; {Phthalanes; Fluoranes; Phthalides; Rhodamine dyes; Phthaleins having heterocyclic aryl rings; Lactone or lactame forms of triarylmethane dyes}

C09B 11/245

- . . . . {Phthaleins having both OH and amino substituent(s) on aryl ring}

C09B 11/26

- . Triarylmethane dyes in which at least one of the aromatic nuclei is heterocyclic {(phthaleins [C09B 11/24](#))}

C09B 11/28

- Pyronines; {Xanthon, thioxanthon, selenoxanthon, telluroxanthon dyes}

**C09B 13/00****Oxyketone dyes**

C09B 13/02

- of the naphthalene series, e.g. naphthazarin

C09B 13/04

- of the pyrene series

C09B 13/06

- of the acetophenone series



**Acridine, azine, oxazine, or thiazine dyes****C09B 15/00      Acridine dyes****C09B 17/00      Azine dyes**

- C09B 17/005      . {Dyes containing at least four ortho-condensed rings with at least two ring N-atoms in the system, e.g. fluo<sup>l</sup>lavine, fluorubine, fluorindine}
- C09B 17/02      . of the benzene series
- C09B 17/04      . of the naphthalene series
- C09B 17/06      . Fluorindine or its derivatives

**C09B 19/00      Oxazine dyes**

- C09B 19/005      . {Gallocyanine dyes}
- C09B 19/02      . Bisoxazines prepared from aminoquinones

**C09B 21/00      Thiazine dyes****Quinoline or polymethine dyes****C09B 23/00      Methine or polymethine dyes, e.g. cyanine dyes**

- C09B 23/0008      . {substituted on the polymethine chain}
- C09B 23/0016      . . {the substituent being a halogen atom}
- C09B 23/0025      . . {the substituent being bound through an oxygen atom}
- C09B 23/0033      . . {the substituent being bound through an sulfur atom}
- C09B 23/0041      . . {the substituent being bound through an nitrogen atom}
- C09B 23/005      . . {the substituent being a COOH and/or a functional derivative thereof}
- C09B 23/0058      . . . {the substituent being CN}
- C09B 23/0066      . {the polymethine chain being part of a carbocyclic ring,(e.g. benzene, naphthalene, cyclohexene, cyclobutenene-quadratic acid)}
- C09B 23/0075      . {the polymethine chain being part of an heterocyclic ring}
- C09B 23/0083      . . {the heteroring being rhodanine in the chain}
- C09B 23/0091      . {having only one heterocyclic ring at one end of the methine chain, e.g. hemicyamines, hemioxonol (styryl dyes see C09B 23/14)}
- C09B 23/02      . the polymethine chain containing an odd number of >CH- {or >C[alkyl]-} groups
- C09B 23/04      . . one >CH- group, e.g. cyanines, isocyanines, pseudocyanines
- C09B 23/06      . . three >CH- groups, e.g. carbocyanines
- C09B 23/08      . . more than three >CH- groups, e.g. polycarbocyanines
- C09B 23/083      . . . {five >CH- groups}
- C09B 23/086      . . . {more than five >CH- groups}
- C09B 23/10      . The polymethine chain containing an even number of >CH- groups {(styryl dyes C09B 23/14, C09B 23/14 takes precedence)}

- C09B 23/102 . . {two heterocyclic rings linked carbon-to-carbon ([C09B 7/00](#) takes precedence)}
- C09B 23/105 . . {two >CH- groups}
- C09B 23/107 . . {four >CH- groups}
- C09B 23/12 . the polymethine chain being branched {"branched" means that the substituent on the polymethine chain forms a new conjugated system, e.g. most trinuclear cyanine dyes}
- C09B 23/14 . Styryl dyes
- C09B 23/141 . . {Bis styryl dyes containing two radicals  $C_6H_5-CH=CH-$ }
- C09B 23/143 . . {the ethylene chain carrying a COOH or a functionally modified derivative, e.g. -CN, -COR, -COOR, -CON=,  $C_6H_5-CH=C-CN$ }
- C09B 23/145 . . {the ethylene chain carrying an heterocyclic residue, e.g. heterocycle- $CH=CH-C_6H_5$ }
- C09B 23/146 . . . {(Benzo)thiazolstyrylamino dyes}
- C09B 23/148 . . {Stilbene dyes containing the moiety  $-C_6H_5-CH=CH-C_6H_5$  (stilbene azo dyes [C09B 29/00](#))}
- C09B 23/16 . the polymethine chain containing hetero atoms
- C09B 23/162 . . {only nitrogen atoms (azomethine dyes [C09B 55/00](#), e.g. those of formula aryl- $CH=N$ -aryl; formazan dyes [C09B 50/00](#), e.g. dyes containing the moiety  $-N=N=CR-N=N-$ )}
- C09B 23/164 . . . {containing one nitrogen atom}
- C09B 23/166 . . . {containing two or more nitrogen atoms (Hydrazon dyes  $-CH=N-N-$  [C09B 26/02](#))}
- C09B 23/168 . . {containing only phosphorus atoms, i.e. phosphacyanine}

## **C09B 25/00 Quinophthalones**

## **C09B 26/00 Hydrazone Dyes; Triazene Dyes**

- C09B 26/02 . Hydrazone dyes (hydrazone-azo dyes [C09B 56/18](#))
- C09B 26/04 . . cationic
- C09B 26/06 . Triazene dyes (triazene-azo dyes [C09B 56/20](#))

## **Azo dyes**

### **NOTE**

In groups [C09B 27/00](#) to [C09B 45/00](#), arrows in the formulae of the various types of azo dyes indicate which part of an azo dye, prepared by diazotising and coupling, is derived from the diazo component and which part is derived from the coupling component. The arrow is pointing to the part derived from the coupling component.

## **C09B 27/00 Preparations in which the azo group is formed in any way other than by diazotising and coupling, {e.g. oxidation}**

- C09B 27/06 . Tartrazines

## **C09B 29/00 Monoazo dyes prepared by diazotising and coupling**

- C09B 29/0003
  - {from diazotized anilines}
- C09B 29/0007
  - • {containing acid groups, e.g. CO<sub>2</sub>H, SO<sub>3</sub>H, PO<sub>3</sub>H<sub>2</sub>, OSO<sub>3</sub>H, OPO<sub>2</sub>H<sub>2</sub>; Salts thereof}
- C09B 29/0011
  - • {from diazotized anilines directly substituted by a heterocyclic ring (not condensed)}
- C09B 29/0014
  - {from diazotized aminonaphthalene}
- C09B 29/0018
  - {from diazotized aminopolycyclic rings}
- C09B 29/0022
  - • {from diazotized aminoanthracene}
- C09B 29/0025
  - {from diazotized amino heterocyclic compounds}
- C09B 29/0029
  - • {the heterocyclic ring containing only nitrogen as heteroatom}
- C09B 29/0033
  - • • {containing a five-membered heterocyclic ring with one nitrogen atom}
- C09B 29/0037
  - • • {containing a five-membered heterocyclic ring with two nitrogen atoms}
- C09B 29/004
  - • • {containing a five-membered heterocyclic ring with three nitrogen atoms}
- C09B 29/0044
  - • • {containing a five-membered heterocyclic ring with four nitrogen atoms}
- C09B 29/0048
  - • • {containing a six-membered heterocyclic ring with one nitrogen atom}
- C09B 29/0051
  - • • {containing a six-membered heterocyclic ring with two nitrogen atoms}
- C09B 29/0055
  - • {the heterocyclic ring containing only oxygen as heteroatom}
- C09B 29/0059
  - • {the heterocyclic ring containing only sulfur as heteroatom}
- C09B 29/0062
  - • {the heterocyclic ring containing nitrogen and oxygen as heteroatoms}
- C09B 29/0066
  - • • {containing a five-membered heterocyclic ring with nitrogen and oxygen atoms}
- C09B 29/007
  - • • {containing a six-membered heterocyclic ring with nitrogen and oxygen atoms}
- C09B 29/0074
  - • {the heterocyclic ring containing nitrogen and sulfur as heteroatoms}
- C09B 29/0077
  - • • {containing a five-membered heterocyclic ring with one nitrogen and one sulfur as heteroatoms}
- C09B 29/0081
  - • • • {Isothiazoles or condensed isothiazoles}
- C09B 29/0085
  - • • • {Thiazoles or condensed thiazoles}
- C09B 29/0088
  - • • • • {Benzothiazoles}
- C09B 29/0092
  - • • {containing a five-membered heterocyclic ring with two nitrogen and one sulfur as heteroatoms}
- C09B 29/0096
  - • {from other diazotized amino heterocyclic rings}
- C09B 29/02
  - from diazotised o-amino-hydroxy compounds
- C09B 29/06
  - from coupling components containing amino as the only directing group
- C09B 29/065
  - • {containing water solubilizing groups}
- C09B 29/08
  - • Amino benzenes
- C09B 29/0801
  - • • {containing acid groups, e.g. COOH, SO<sub>3</sub>H, PO<sub>3</sub>H<sub>2</sub>, OSO<sub>3</sub>H, OPO<sub>3</sub>H<sub>2</sub>; SO<sub>2</sub>NHSO<sub>2</sub>R or salts thereof, R being hydrocarbonyls}
- C09B 29/0802
  - • • • {containing COOH}
- C09B 29/0803
  - • • • {containing SO<sub>3</sub>H, OSO<sub>3</sub>H}
- C09B 29/0804
  - • • • {containing PO<sub>3</sub>H<sub>2</sub>, OPO<sub>3</sub>H<sub>2</sub>}
- C09B 29/0805
  - • • {free of acid groups}

C09B 29/0807	. . . .	{characterised by the amino group}
C09B 29/0808	. . . . .	{unsubstituted amino group}
C09B 29/0809	. . . . .	{substituted amino group}
C09B 29/081	. . . . .	{unsubstituted alkylamino, alkenylamino, alkynylamino, cycloalkylamino, aralkylamino or arylamino}
C09B 29/0811	. . . . .	{further substituted alkylamino, alkenylamino, alkynylamino, cycloalkylamino aralkylamino or arylamino}
C09B 29/0813	. . . . .	{substituted by OH, O-C(=X)-R, O-C(=X)-X-R, O-R (X being O,S,NR; R being hydrocarbonyl)}
C09B 29/0814	. . . . .	{substituted by N}
C09B 29/0815	. . . . .	{substituted by -C(=O)-}
C09B 29/0816	. . . . .	{substituted by -COOR}
C09B 29/0817	. . . . .	{having N(-aliphatic residue-COOR) <sub>2</sub> as substituents}
C09B 29/0819	. . . . .	{substituted by -CON<}
C09B 29/082	. . . . .	{substituted by halogen}
C09B 29/0821	. . . . .	{substituted by SH, SR, SO <sub>2</sub> R, SO <sub>2</sub> XR, SO <sub>2</sub> N}
C09B 29/0822	. . . . .	{substituted by NO <sub>2</sub> }
C09B 29/0823	. . . . .	{substituted by CN}
C09B 29/0825	. . . . .	{having N(-alkenylene-CN/-alkynylene-CN)(-aliphatic residue-CN)}
C09B 29/0826	. . . . .	{having N(-alkenylene/-alkynylene-O)(-alkenylene/-alkynylene-CN)}
C09B 29/0827	. . . . .	{having N(-alkenylene/-alkynylene-CO)(-alkenylene/-alkynylene-CN)}
C09B 29/0828	. . . . .	{having (Image) }
C09B 29/0829	. . . . .	{having N(-alkenylene/-alkynylene-CN)(-alkenylene/-alkynylene-CN)}
C09B 29/083	. . . . .	{having -N< (in a ring)}
C09B 29/0832	. . . . .	{having -N-alkylene-heterocyclic ring}
C09B 29/0833	. . .	{characterised by the substituent on the benzene ring excepted the substituents: CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> , O-alkyl, NHCO-alkyl, NHCOO-alkyl, NHCO-C <sub>6</sub> H <sub>5</sub> , NHCOO-C <sub>6</sub> H <sub>5</sub> }
C09B 29/0834	. . . .	{linked through -O- (for OH see <a href="#">C09B 29/24</a> , <a href="#">C09B 29/26</a> )}
C09B 29/0835	. . . .	{linked through -S-}
C09B 29/0836	. . . .	{linked through -N= (for heterocyclic ring, see <a href="#">C09B 29/0846</a> )}
C09B 29/0838	. . . . .	{specific alkyl-CO-N-, aralkyl CON-, cycloalkyl CON-, alkyl OCON-}
C09B 29/0839	. . . . .	{specific -NCO aryl, -NCO heteroaryl}
C09B 29/084	. . . . .	{specific -NSO <sub>2</sub> N, NSO <sub>2</sub> XR, -NSO <sub>2</sub> R}
C09B 29/0841	. . . . .	{specific -NCON}
C09B 29/0842	. . . .	{linked through -C-, -CS-, (Image) ; -CN}

- C09B 29/0844
  - . . . . {substituted by alkyl, e.g. CF<sub>3</sub>}
- C09B 29/0845
  - . . . . {substituted by carbocyclic ring linked directly to the benzene ring}
- C09B 29/0846
  - . . . . {substituted by heterocyclic ring linked directly to the benzene ring}
- C09B 29/0847
  - . . . . {substituted by halogen}
- C09B 29/0848
  - . . . . {substituted by NO<sub>2</sub>}
- C09B 29/095
  - . . Amino naphthalenes
- C09B 29/0955
  - . . . {containing water solubilizing groups}
- C09B 29/10
  - . from coupling components containing hydroxy as the only directing group
- C09B 29/103
  - . . {of the naphthalene series}
- C09B 29/106
  - . . . {Hydroxy carboxylic acids of the naphthalene series}
- C09B 29/12
  - . . of the benzene series
- C09B 29/14
  - . . . Hydroxy carboxylic acids
- C09B 29/16
  - . . Naphthol-sulfonic acids
- C09B 29/18
  - . . ortho-Hydroxy carbonamides
- C09B 29/20
  - . . . of the naphthalene series
- C09B 29/22
  - . . . of heterocyclic compounds
- C09B 29/24
  - . from coupling components containing both hydroxyl and amino directing groups
- C09B 29/26
  - . . Amino phenols
- C09B 29/28
  - . . Amino naphthols
- C09B 29/30
  - . . . Amino naphtholsulfonic acid
- C09B 29/32
  - . from coupling components containing a reactive methylene group
- C09B 29/322
  - . . {containing acid groups, e.g. COOH, SO<sub>3</sub>H, PO<sub>3</sub>H<sub>2</sub>, OSO<sub>3</sub>H, OPO<sub>2</sub>H<sub>2</sub>; Salts thereof}
- C09B 29/325
  - . . {free of acid groups}
- C09B 29/327
  - . . . {containing NCCH<sub>2</sub>CON-aryl, NCOCH<sub>2</sub>CON-aryl, ROC-CH<sub>2</sub>CON-aryl}
- C09B 29/33
  - . . Aceto- or benzoylacetylarylates
- C09B 29/331
  - . . . {containing acid groups, e.g. COOH, SO<sub>3</sub>H, PO<sub>3</sub>H<sub>2</sub>, OSO<sub>3</sub>H<sub>2</sub>, OPO<sub>2</sub>H<sub>2</sub>; salts thereof}
- C09B 29/332
  - . . . . {Carbocyclic arylides}
- C09B 29/334
  - . . . . {Heterocyclic arylides, e.g. acetoacetylaminobenzimidazolone}
- C09B 29/335
  - . . . {free of acid groups}
- C09B 29/337
  - . . . . {Carbocyclic arylides}
- C09B 29/338
  - . . . . {Heterocyclic arylides, e.g. acetoacetylaminobenzimidazolone}
- C09B 29/34
  - . from other coupling components
- C09B 29/36
  - . . from heterocyclic compounds
- C09B 29/3604
  - . . . {containing only a nitrogen as heteroatom}
- C09B 29/3608
  - . . . . {containing a five-membered heterocyclic ring with only one nitrogen as heteroatom}
- C09B 29/3613
  - . . . . . {from an indole}
- C09B 29/3617
  - . . . . {containing a six-membered heterocyclic with only one nitrogen as heteroatom}

C09B 29/3621	. . . . . {from a pyridine ring}
C09B 29/3626	. . . . . {from a pyridine ring containing one or more hydroxyl groups (or = O)}
C09B 29/363	. . . . . {from diazotized amino carbocyclic rings}
C09B 29/3634	. . . . . {from diazotized heterocyclic rings}
C09B 29/3639	. . . . . {from a pyridine ring containing one or more amino groups}
C09B 29/3643	. . . . . {from quinolines or hydrogenated quinolines}
C09B 29/3647	. . . . {containing a five-membered ring with two nitrogen atoms as heteroatoms}
C09B 29/3652	. . . . . {containing a 1,2-diazoles or hydrogenated 1,2-diazoles}
C09B 29/3656	. . . . . {containing amino-1,2-diazoles}
C09B 29/366	. . . . . {containing hydroxy-1,2-diazoles, e.g. pyrazolone}
C09B 29/3665	. . . . {containing a six-membered heterocyclic ring with two nitrogen atoms}
C09B 29/3669	. . . . . {from a pyrimidine ring}
C09B 29/3673	. . . . . {Barbituric acid and derivatives thereof}
C09B 29/3678	. . . {containing only oxygen as heteroatom}
C09B 29/3682	. . . {containing only sulfur as heteroatom}
C09B 29/3686	. . . {containing nitrogen and oxygen as heteroatom}
C09B 29/3691	. . . {containing nitrogen and sulfur as heteroatom}
C09B 29/3695	. . . {containing other heterocyclic compounds}
<b>C09B 31/00</b>	<b>Disazo and polyazo dyes of the type A-&gt;B-&gt;C, A-&gt;B-&gt;C-&gt;D, or the like, prepared by diazotising and coupling</b>
C09B 31/02	. Disazo dyes
C09B 31/025	. . {containing acid groups, e.g. -COOH, -SO <sub>3</sub> H, -PO <sub>3</sub> H <sub>2</sub> , -OSO <sub>3</sub> H, -OPO <sub>2</sub> H <sub>2</sub> ; Salts thereof}
C09B 31/04	. . from a coupling component "C" containing a directive amino group
C09B 31/041	. . . {containing acid groups, e.g. -CO <sub>2</sub> H, -SO <sub>3</sub> H, -PO <sub>3</sub> H <sub>2</sub> , -OSO <sub>3</sub> H, -OPO <sub>2</sub> H <sub>2</sub> ; Salts thereof}
C09B 31/043	. . . Amino-benzenes
C09B 31/047	. . . . containing acid groups, e.g. -CO <sub>2</sub> H, -SO <sub>3</sub> H, -PO <sub>3</sub> H <sub>2</sub> , -OSO <sub>3</sub> H, -OPO <sub>2</sub> H <sub>2</sub> ; Salts thereof
C09B 31/053	. . . Amino naphthalenes
C09B 31/057	. . . . containing acid groups, e.g. -CO <sub>2</sub> H, -SO <sub>3</sub> H, -PO <sub>3</sub> H <sub>2</sub> , -OSO <sub>3</sub> H, -OPO <sub>2</sub> H <sub>2</sub> ; Salts thereof
C09B 31/06	. . from a coupling component "C" containing a directive hydroxyl group
C09B 31/061	. . . {containing acid groups, e.g. -CO <sub>2</sub> H, -SO <sub>3</sub> H, -PO <sub>3</sub> H <sub>2</sub> , -OSO <sub>3</sub> H, -OPO <sub>2</sub> H <sub>2</sub> ; Salts thereof}
C09B 31/062	. . . Phenols
C09B 31/065	. . . . containing acid groups, e.g. -CO <sub>2</sub> H, -SO <sub>3</sub> H, -PO <sub>3</sub> H <sub>2</sub> , -OSO <sub>3</sub> H, -OPO <sub>2</sub> H <sub>2</sub> ; Salts thereof
C09B 31/068	. . . Naphthols

- C09B 31/072 . . . . containing acid groups, e.g. -CO<sub>2</sub>H, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; Salts thereof
- C09B 31/075 . . . ortho-Hydroxy carboxylic acid amides
- C09B 31/078 . . . . containing acid groups, e.g. -COOH, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; Salts thereof
- C09B 31/08 . . from a coupling component "C" containing directive hydroxyl and amino groups
- C09B 31/10 . . from a coupling component "C" containing reactive methylene groups
- C09B 31/105 . . . {containing acid groups, e.g. -CO<sub>2</sub>H, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; Salts thereof}
- C09B 31/11 . . . Aceto- or benzoyl-acetylaryldes
- C09B 31/115 . . . . {containing acid groups, e.g. -COOH, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; salts thereof}
- C09B 31/12 . . from other coupling components "C"
- C09B 31/14 . . . Heterocyclic components
- C09B 31/143 . . . . 1,2-Diazoles
- C09B 31/147 . . . . . Pyrazoles
- C09B 31/15 . . . . Indoles
- C09B 31/153 . . . . containing a six-membered ring with one nitrogen atom as the only ring hetero-atom
- C09B 31/157 . . . . . Quinolines or hydrogenated quinolines
- C09B 31/16 . Trisazo dyes
- C09B 31/18 . . from a coupling component "D" containing a directive amine group
- C09B 31/20 . . from a coupling component "D" containing a directive hydroxyl group
- C09B 31/22 . . from a coupling component "D" containing directive hydroxyl and amino groups
- C09B 31/24 . . from a coupling component "D" containing reactive methylene groups
- C09B 31/26 . . from other coupling components "D"
- C09B 31/28 . . . Heterocyclic compounds
- C09B 31/30 . Other polyazo dyes
- C09B 33/00 Disazo and polyazo dyes of the types A->K<-B, A->B->K<-C, or the like, prepared by diazotising and coupling**
- C09B 33/02 . Disazo dyes
- C09B 33/04 . . in which the coupling component is a dihydroxy or polyhydroxy compound
- C09B 33/044 . . . the coupling component being a bis-phenol
- C09B 33/048 . . . the coupling component being a bis-naphthol
- C09B 33/052 . . . the coupling component being a bis-(naphthol-amine)
- C09B 33/056 . . . the coupling component being a bis-(naphthol-urea)
- C09B 33/06 . . in which the coupling component is a diamine or polyamine
- C09B 33/08 . . in which the coupling component is a hydroxy-amino compound
- C09B 33/10 . . . in which the coupling component is an amino naphthol



- C09B 33/12 . . in which the coupling component is a hetero-cyclic compound
- C09B 33/147 . . in which the coupling component is a bis -(o-hydroxy-carboxylic- acid amide)
- C09B 33/153 . . in which the coupling component is a bis-(aceto-acetyl amide) or a bis-(benzoyl-acetylamide)
- C09B 33/16 . . from other coupling components
- C09B 33/18 . Trisazo or higher polyazo dyes
- C09B 33/22 . . Trisazo dyes of the type A->B->K<-C
- C09B 33/24 . . Trisazo dyes of the type
- $$\begin{array}{c} \text{A} \rightarrow \text{K} \begin{array}{l} \nearrow \text{B} \\ \searrow \text{C} \end{array} \end{array}$$
- C09B 33/26 . . Tetrazo dyes of the type A->B->C->K<-D
- C09B 33/28 . . Tetrazo dyes of the type A->B->K<-C<-D
- C09B 33/30 . . Tetrazo dyes of the type
- $$\begin{array}{c} \text{A} \rightarrow \text{K} \begin{array}{l} \nearrow \text{B} \\ \searrow \text{C} \rightarrow \text{D} \end{array} \end{array}$$
- C09B 33/32 . . Tetrazo dyes of the type
- $$\begin{array}{c} \text{A} \rightarrow \text{K} \begin{array}{l} \nearrow \text{B} \\ \searrow \text{C} \rightarrow \text{D} \end{array} \end{array}$$
- C09B 35/00 Disazo and polyazo dyes of the type A<-D->B prepared by diazotising and coupling**
- C09B 35/02 . Disazo dyes
- C09B 35/021 . . characterised by two coupling components of the same type
- C09B 35/023 . . . in which the coupling component is a hydroxy or polyhydroxy compound
- C09B 35/025 . . . in which the coupling component is an amine or polyamine
- C09B 35/027 . . . in which the coupling component is a hydroxy-amino compound
- C09B 35/029 . . . . Amino naphthol
- C09B 35/03 . . . in which the coupling component is a heterocyclic compound
- C09B 35/031 . . . . containing a six membered ring with one nitrogen atom as the only ring hetero atom
- C09B 35/033 . . . in which the coupling component is an arylamide of an o-hydroxy-carboxylic acid or of a beta-keto-carboxylic acid
- C09B 35/035 . . . in which the coupling component containing an activated methylene group
- C09B 35/037 . . characterised by two coupling components of different types
- C09B 35/039 . . characterised by the tetrazo component
- C09B 35/04 . . . the tetrazo component being a benzene derivative
- C09B 35/06 . . . the tetrazo component being a naphthalene derivative
- C09B 35/08 . . . the tetrazo component being a derivative of biphenyl
- C09B 35/10 . . . . from two coupling components of the same type
- C09B 35/105 . . . . . {from two coupling components with reactive methylene groups}
- C09B 35/12 . . . . . from amines
- C09B 35/14 . . . . . from hydroxy compounds



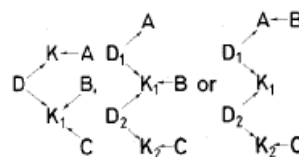
- C09B 35/16 . . . . . from hydroxy-amines
- C09B 35/18 . . . . . from heterocyclic compounds
- C09B 35/185 . . . . . {from pyridine or pyridone components}
- C09B 35/20 . . . . . from two coupling compounds of different types
- C09B 35/205 . . . the tetrazo component being a derivative of a diaryl- or triaryl- alkane or-alkene
- C09B 35/21 . . . . . of diarylmethane or triarylmethane
- C09B 35/215 . . . . . of diarylethane or diarylethene {(other stilbene-azo dyes, [C09B 56/04](#), [C09B 56/06](#))}
- C09B 35/22 . . . the tetrazo component being a derivative of a diaryl ether
- C09B 35/227 . . . the tetrazo component being a derivative of a diaryl sulfide or a diaryl polysulfide
- C09B 35/233 . . . the tetrazo component being a derivative of a diaryl ketone or benzil
- C09B 35/24 . . . the tetrazo component being a derivative of a diaryl amine
- C09B 35/26 . . . the tetrazo component being a derivative of a diaryl urea
- C09B 35/28 . . . the tetrazo component containing two aryl nuclei linked by at least one of the groups -CON<, -SO<sub>2</sub>N<, -SO<sub>2</sub>-, or -SO<sub>2</sub>-O-
- C09B 35/30 . . . . . from two identical coupling components
- C09B 35/32 . . . . . from two different coupling components
- C09B 35/34 . . . the tetrazo component being heterocyclic
- C09B 35/35 . Trisazo dyes in which the tetrazo component is a diamino-azo-aryl compound
- C09B 35/36 . Trisazo dyes of the type
 

$$\begin{array}{c} \text{A}-\text{B} \\ \diagup \quad \diagdown \\ \text{D} \quad \text{E} \end{array}$$
- C09B 35/362 . . D is benzene
- C09B 35/364 . . D is naphthalene
- C09B 35/366 . . D is diphenyl
- C09B 35/368 . . D is diarylether, a diarylsulfide or a diarylpolysulfide
- C09B 35/37 . . D is diarylamine
- C09B 35/372 . . D is diarylurea
- C09B 35/374 . . D contains two aryl nuclei linked by at least one of the groups -CON<, -SO<sub>2</sub>N<, -SO<sub>2</sub>-, or -SO<sub>2</sub>-O-
- C09B 35/376 . . D is a heterocyclic compound
- C09B 35/378 . Trisazo dyes of the type
 

$$\begin{array}{c} \text{B} \\ \diagup \quad \diagdown \\ \text{A}-\text{T} \quad \text{E} \end{array}$$
- C09B 35/38 . Trisazo dyes of the type
 

$$\begin{array}{c} \text{K}-\text{A} \\ \diagup \quad \diagdown \\ \text{D} \quad \text{K}_1 \end{array}$$
- C09B 35/40 . . the component K being a dihydroxy or polyhydroxy compound
- C09B 35/42 . . the component K being a diamine or polyamine
- C09B 35/44 . . the component K being a hydroxy amine
- C09B 35/46 . . . the component K being an amino naphthol
- C09B 35/461 . . . . {D being derived from diaminobenzene}

- C09B 35/462 . . . . {D being derived from diaminonaphthalene}
- C09B 35/463 . . . . {D being derived from diaminodiphenyl}
- C09B 35/464 . . . . {D being derived from diaminodiaryl(thio)ether}
- C09B 35/465 . . . . {D being derived from diaminodiarylamine}
- C09B 35/466 . . . . {D being derived from diaminodiarylurea}
- C09B 35/467 . . . . {D being derived from diaminodiaryl linked through CON<, SO<sub>2</sub>N<, CSN<}
- C09B 35/468 . . . . {D being derived from diaminodiarylketone}
- C09B 35/469 . . . . {D being derived from heterocyclic diamine}
- C09B 35/48 . . the component K being heterocyclic
- C09B 35/50 . Tetrazo dyes
- C09B 35/52 . . of the type
- $$\begin{array}{c} \text{D} \swarrow \text{K} \text{---} \text{A} \\ \searrow \text{K}_1 \text{---} \text{B} \end{array}$$
- C09B 35/54 . . of the type
- $$\begin{array}{c} \text{D} \swarrow \text{K} \text{---} \text{A} \\ \searrow \text{B} \text{---} \text{K}_1 \end{array}$$
- C09B 35/56 . . of the type
- $$\begin{array}{c} \text{D} \swarrow \text{A} \text{---} \text{C} \\ \searrow \text{B} \text{---} \text{E} \end{array}$$
- C09B 35/58 . . of the type
- $$\begin{array}{c} \text{D} \swarrow \text{K} \\ \searrow \text{B} \text{---} \text{K}_1 \text{---} \text{A} \end{array}$$
- C09B 35/60 . . of the type
- $$\begin{array}{c} \text{D} \text{---} \text{B} \\ \text{K} \swarrow \text{D}_1 \text{---} \text{C} \end{array}$$
- C09B 35/62 . . of the type
- $$\begin{array}{c} \text{D} \text{---} \text{C} \\ \text{K} \swarrow \text{B} \text{---} \text{A} \end{array}$$
- C09B 35/64 . Higher polyazo dyes, e.g. of the types



**C09B 37/00 Azo dyes prepared by coupling the diazotised amine with itself**

**C09B 39/00 Other azo dyes prepared by diazotising and coupling**

**C09B 41/00 Special methods of performing the coupling reaction** {(reaction of mixtures of diazo and coupling components, [C09B 67/0033](#))}

- C09B 41/001 . {characterised by the coupling medium}
- C09B 41/002 . . {containing a solvent}
- C09B 41/003 . . {containing a polymer (surface-active polyethylene glycols, [C09B 41/005](#))}
- C09B 41/004 . . {containing a reaction assistant, e.g. urea}
- C09B 41/005 . . {containing low molecular weight dispersing agents; containing surface active polyethylene glycols}
- C09B 41/006 . {characterised by process features}

- C09B 41/007 . . {including condition or time responsive control, e.g. automatically controlled processes; Stepwise coupling}
- C09B 41/008 . . {using mechanical or physical means, e.g. using ultra-sound, milling during coupling or micro-reactors}
- C09B 41/009 . . {Diazotising and coupling in one step}

**C09B 43/00****Preparation of azo dyes from other azo compounds**

- C09B 43/003 . {Cyclisation of azo dyes; Condensation of azo dyes with formation of ring, e.g. of azopyrazolone dyes}
- C09B 43/006 . {by introduction of hydrocarbon radicals on C-atom of azo dye}
- C09B 43/02 . by sulfonation
- C09B 43/04 . by nitration
- C09B 43/06 . by oxidation
- C09B 43/08 . by reduction
- C09B 43/085 . . {by reacting nitro azo dyes with amine or amino azo dye with nitro compounds}
- C09B 43/10 . . with formation of a new azo or an azoxy bridge
- C09B 43/11 . by introducing hydrocarbon radicals or substituted hydrocarbon radicals on primary or secondary amino groups (formation of an amino group by reduction, e.g. of a nitro groups, [C09B 43/08](#))
- C09B 43/12 . by acylation of amino groups
- C09B 43/124 . . with monocarboxylic acids, carbamic esters of halides, mono- isocyanates, or haloformic acid esters
- C09B 43/1242 . . . {with heterocyclic monocarboxylic acids}
- C09B 43/1245 . . . {with formation of NHCOOR, NHCOSR or NHCSOR groups by acylation}
- C09B 43/1247 . . . {with formation of NHSO<sub>2</sub>R or NHSO<sub>3</sub>H radicals}
- C09B 43/128 . . . Aliphatic, cycloaliphatic or araliphatic acids
- C09B 43/132 . . . having the carboxylic group directly attached to an aromatic carbocyclic ring
- C09B 43/136 . . with polyfunctional acylating agents
- C09B 43/14 . . . with phosgene or thiophosgene
- C09B 43/145 . . . with polycarboxylic acids
- C09B 43/15 . . . . with formation of cyclic imides of ortho- or peri- dicarboxylic acids
- C09B 43/155 . . . with di- or poly-isocyanates
- C09B 43/16 . . . linking amino-azo or cyanuric acid residues
- C09B 43/18 . by acylation of hydroxyl group {or of mercapto group; (OPO<sub>3</sub>H<sub>2</sub> and OP(X)(XR)<sub>2</sub> with X=O,S,NH and R being hydrocarbon, [C09B 69/007](#))}
- C09B 43/20 . . with monocarboxylic acids, carbamic acid esters or halides, mono-isocyanates or haloformic acid esters
- C09B 43/202 . . . {Aliphatic, cycloaliphatic, araliphatic carboxylic acids}
- C09B 43/204 . . . {Heterocyclic monocarboxylic acids}
- C09B 43/206 . . . {with formation of OCXN or OSO<sub>2</sub>N group}
- C09B 43/208 . . . {with formation of OCXXH or OCXXR and R being hydrocarbon}

- C09B 43/22 . . . having the carboxylic group directly attached to an aromatic carbocyclic ring
- C09B 43/24 . . with formation of -O-SO<sub>2</sub>-R or -O-SO<sub>3</sub>H radicals
- C09B 43/26 . . with polyfunctional acylating agents
- C09B 43/263 . . . {Polycarboxylic acids}
- C09B 43/266 . . . {Di-or polyisocyanates}
- C09B 43/28 . by etherification of hydroxyl groups
- C09B 43/30 . by esterification of -COOH or -SO<sub>3</sub>H groups
- C09B 43/32 . by reacting carboxylic or sulfonic groups, or derivatives thereof, with amines; by reacting keto-groups with amines
- C09B 43/325 . . {by reacting sulfonic acids with amines}
- C09B 43/34 . . by reacting ortho- or peri-dicarboxylic dyes
- C09B 43/36 . . with amino-anthracene or amino-anthraquinone dyes
- C09B 43/38 . . by reacting two or more ortho-hydroxy naphthoic acid dyes with polyamines
- C09B 43/40 . by substituting hetero atoms by radicals containing other hetero atoms
- C09B 43/405 . . {by substituting radicals containing hetero atoms for -SO<sub>2</sub>R radicals and R being hydrocarbon}
- C09B 43/42 . . by substituting radicals containing hetero atoms for -CN radicals
- C09B 43/44 . by substituting amine groups for hydroxyl groups or hydroxyl groups for amine groups; Desacylation of amino-acyl groups; Deaminating

**C09B 44/00****Azo dyes containing onium groups**

- C09B 44/005 . {Special process features in the quaternization reaction}
- C09B 44/02 . containing ammonium groups not directly attached to an azo group
- C09B 44/04 . . from coupling components containing amino as the only directing group
- C09B 44/06 . . from coupling components containing hydroxyl as the only directing group
- C09B 44/08 . . from coupling components containing heterocyclic rings
- C09B 44/10 . containing cyclammonium groups attached to an azo group by a carbon atom of the ring system
- C09B 44/101 . . {characterised by the coupling component having an amino directing group}
- C09B 44/102 . . {characterised by the coupling component having a reactive methylene group}
- C09B 44/103 . . {characterised by the coupling component being a heterocyclic compound}
- C09B 44/105 . . . {derived from pyridine, pyridone}
- C09B 44/106 . . . {derived from pyrazoles, pyrazolones}
- C09B 44/107 . . {characterised by a cyclammonium five-membered specific ring not mentioned hereafter: thiadiazolium, (benz)oxazolium}
- C09B 44/108 . . {characterised by a cyclammonium six-membered specific ring not mentioned hereafter, e.g. pyrimidinium, perimidinium, pyridazonium, oxazinium}
- C09B 44/12 . . having one nitrogen atom as the only ring hetero atom
- C09B 44/123 . . . {in a five-membered ring, e.g. pyrrolium, indolium}
- C09B 44/126 . . . {in a six-membered ring, e.g. pyrridinium, quinolinium}

- C09B 44/14 . . 1, 2-Diazoles or hydrogenated 1,2-diazoles {[Pyrazolium](#); [Indazolium](#)}
- C09B 44/16 . . 1, 3-Diazoles or hydrogenated 1,3-diazoles {(Benz)[imidazolium](#)}
- C09B 44/18 . . having three nitrogen atoms as the only ring hetero atoms
- C09B 44/20 . . Thiazoles or hydrogenated thiazoles

**C09B 45/00****Complex metal compounds of azo dyes**

- C09B 45/01 . characterised by the method of metallisation
- C09B 45/02 . Preparation from dyes containing in o-position a hydroxyl group and in o'-position hydroxyl, alkoxy, carboxyl, amino or keto groups
  - C09B 45/025 . . {[of azo-pyridone series](#)}
  - C09B 45/04 . . Azo compounds in general
    - C09B 45/06 . . . Chromium compounds
    - C09B 45/08 . . . Copper compounds
    - C09B 45/10 . . . Cobalt compounds
    - C09B 45/12 . . . other metal compounds
  - C09B 45/14 . . Monoazo compounds
    - C09B 45/16 . . . containing chromium
    - C09B 45/18 . . . containing copper
    - C09B 45/20 . . . containing cobalt
    - C09B 45/22 . . . containing other metals
  - C09B 45/24 . . Disazo or polyazo compounds
    - C09B 45/26 . . . containing chromium
    - C09B 45/28 . . . containing copper
    - C09B 45/30 . . . containing cobalt
    - C09B 45/32 . . . containing other metals
  - C09B 45/34 . Preparation from o-monohydroxy azo compounds having in the o'-position an atom or functional group other than hydroxyl, alkoxy, carboxyl, amino or keto groups
    - C09B 45/36 . . by oxidation of hydrogen in o'-position
    - C09B 45/38 . Preparation from compounds with -OH and -COOH adjacent in the same ring or in peri position
      - C09B 45/40 . . Chromium compounds
      - C09B 45/42 . . Copper compounds
      - C09B 45/44 . . Cobalt compounds
      - C09B 45/46 . . Other metal compounds
  - C09B 45/48 . Preparation from other complex metal compounds of azo dyes
    - C09B 45/482 . . {[Chromium complexes](#)}
    - C09B 45/485 . . {[Copper complexes](#)}
    - C09B 45/487 . . {[Cobalt complexes](#)}

**C09B 47/00****Porphines; Azaporphines {(non-dyeing compounds [C07D 487/22](#))}**

- C09B 47/04 . Phthalocyanines {[abbreviation: Pc](#)}

- C09B 47/045
  - • {Special non-pigmentary uses, e.g. catalyst, photosensitisers of phthalocyanine dyes or pigments}
- C09B 47/06
  - • Preparation from carboxylic acids or derivatives thereof, {e.g. anhydrides, amides, mononitriles, phthalimide, o-cyanobenzamide}
- C09B 47/061
  - • • {having halogen atoms linked directly to the Pc skeleton}
- C09B 47/062
  - • • {having alkyl radicals linked directly to the Pc skeleton; having carboxylic groups directly linked to the skeleton, e.g. phenyl}
- C09B 47/063
  - • • {having oxygen or sulfur atom(s) linked directly to the skeleton}
- C09B 47/064
  - • • {having nitrogen atom(s) directly linked to the skeleton}
- C09B 47/065
  - • • {having -COOH or -SO<sub>3</sub>H radicals or derivatives thereof, directly linked to the skeleton}
- C09B 47/067
  - • • from phthalodinitriles {naphthalenedinitriles, aromatic dinitriles prepared in situ, hydrogenated phthalodinitrile}
- C09B 47/0671
  - • • • {having halogen atoms linked directly to the Pc skeleton}
- C09B 47/0673
  - • • • {having alkyl radicals linked directly to the Pc skeleton; having carbocyclic groups linked directly to the skeleton}
- C09B 47/0675
  - • • • {having oxygen or sulfur linked directly to the skeleton}
- C09B 47/0676
  - • • • {having nitrogen atom(s) linked directly to the skeleton}
- C09B 47/0678
  - • • • {having -COOH or -SO<sub>3</sub>H radicals or derivatives thereof directly linked to the skeleton}
- C09B 47/073
  - • • Preparation from isoindolenines, {e.g. pyrrolenines}
- C09B 47/08
  - • Preparation from other phthalocyanine compounds, {e.g. cobaltphthalocyanineamine complex}
- C09B 47/085
  - • • {substituting the central metal atom}
- C09B 47/10
  - • • Obtaining compounds having halogen atoms directly bound to the phthalocyanine skeleton
- C09B 47/12
  - • • Obtaining compounds having alkyl radicals, or alkyl radicals substituted by hetero atoms, bound to the phthalocyanine skeleton
- C09B 47/14
  - • • • having alkyl radicals substituted by halogen atoms
- C09B 47/16
  - • • • having alkyl radicals substituted by nitrogen atoms
- C09B 47/18
  - • • Obtaining compounds having oxygen atoms directly bound to the phthalocyanine skeleton
- C09B 47/20
  - • • Obtaining compounds having sulfur atoms directly bound to the phthalocyanine skeleton
- C09B 47/22
  - • • Obtaining compounds having nitrogen atoms directly bound to the phthalocyanine skeleton
- C09B 47/24
  - • • Obtaining compounds having -COOH or -SO<sub>3</sub>H radicals, or derivatives thereof, directly bound to the phthalocyanine radical
- C09B 47/26
  - • • • Amide radicals
- C09B 47/28
  - • Phthalocyanine dyes containing -S-SO<sub>3</sub>H radicals
- C09B 47/30
  - • Metal-free phthalocyanines
- C09B 47/305
  - • • {prepared by demetallizing metal Pc compounds}
- C09B 47/32
  - • Cationic phthalocyanine dyes

**C09B 48/00****Quinacridones****C09B 49/00****Sulfur dyes**

C09B 49/02

- from nitro compounds of the benzene, naphthalene or anthracene series

C09B 49/04

- from amino compounds of the benzene, naphthalene or anthracene series

C09B 49/06

- from azines, oxazines, thiazines or thiazoles

C09B 49/08

- from urea derivatives

C09B 49/10

- from diphenylamines, indamines, or indophenols, {e.g. p-aminophenols or leucoindophenols}

C09B 49/12

- from other compounds, {e.g. other heterocyclic compounds}

C09B 49/122

- . {from phthalocyanine compounds}

C09B 49/124

- . {from polycarbocyclic compounds}

C09B 49/126

- . {from triarylmethane compounds}

C09B 49/128

- . {from hydroxy compounds of the benzene or naphthalene series}

**C09B 50/00****Formazane dyes; Tetrazolium dyes**

C09B 50/02

- Tetrazolium dyes

C09B 50/04

- Metal-free formazan dyes

C09B 50/06

- Bis-formazan dyes

C09B 50/08

- Meso-acyl formazan dyes

C09B 50/10

- Cationic formazan dyes

**C09B 51/00****Nitro or nitroso dyes**

C09B 51/005

- {Nitroso dyes}

**C09B 53/00****Quinone imides**

C09B 53/02

- Indamines; Indophenols

**C09B 55/00****Azomethine dyes**

C09B 55/001

- {Azomethine dyes forming a 1,2 complex metal compound, e.g. with Co or Cr, with an other dye, e.g. with an azo or azomethine dye (for 1,1 complexes with other ligands, C09B 55/00)}

C09B 55/002

- {Monoazomethine dyes}

C09B 55/003

- . {with the -C=N- group attached to an heteroring}

C09B 55/004

- . . {with the -C=N- group between two heterorings}

C09B 55/005

- {Disazomethine dyes}

C09B 55/006

- . {containing at least one heteroring}

C09B 55/007

- . {containing only carbocyclic rings}

C09B 55/008

- {Tri or polyazomethine dyes}

C09B 55/009

- {Azomethine dyes, the C-atom of the group -C=N- being part of a ring (Image)}

**C09B 56/00****Azo dyes containing other chromophoric systems**

C09B 56/005

- {Azo-nitro dyes}



- C09B 56/02 . Azomethine-azo dyes {(1,2-Complex dyes of AZOMETHINE and AZO dyes, [C09B 55/001](#))}
- C09B 56/04 . Stilbene-azo dyes {(disazo dyes from diaminostilbene, [C09B 35/215](#))}
- C09B 56/06 . . Bis- or polystilbene azo dyes
- C09B 56/08 . Styryl-azo dyes
- C09B 56/10 . Formazane-azo dyes
- C09B 56/12 . Anthraquinone-azo dyes {(from diazotised aminoanthracene [C09B 29/0022](#), azo dyes containing hydroxyl groups acylated with polyfunctional anthraquinone derivatives [C09B 43/26](#))}
- C09B 56/14 . Phthalocyanine-azo dyes
- C09B 56/16 . Methine- or polymethine-azo dyes
- C09B 56/18 . Hydrazone-azo dyes
- C09B 56/20 . Triazene-azo dyes
  
- C09B 57/00** **Other synthetic dyes of known constitution**
- C09B 57/001 . {Pyrene dyes}
- C09B 57/002 . {Aminoketone dyes, e.g. arylaminoketone dyes ([C09B 13/00](#) takes precedence)}
- C09B 57/004 . {Diketopyrrolopyrrole dyes}
- C09B 57/005 . {Pyrocolline; Phthalcoylpyrrocolline dyes}
- C09B 57/007 . {Squaraine dyes}
- C09B 57/008 . {Triarylamine dyes containing no other chromophores}
- C09B 57/02 . Coumarine dyes
- C09B 57/04 . Isoindoline dyes
- C09B 57/06 . Naphtholactam dyes
- C09B 57/08 . Naphthalimide dyes; Phthalimide dyes
- C09B 57/10 . Metal complexes of organic compounds not being dyes in uncomplexed form
- C09B 57/12 . Perinones, i.e. naphthoylene-aryl-imidazoles
- C09B 57/14 . Benzoxanthene dyes; Benzothioxanthene dyes
  
- C09B 59/00** **Artificial dyes of unknown constitution**
  
- C09B 61/00** **Dyes of natural origin prepared from natural sources, {e.g. vegetable sources}**
  
- C09B 62/00** **Reactive dyes, i.e. dyes which form covalent bonds with the substrates or which polymerise with themselves**
- C09B 62/002 . with the linkage of the reactive group being alternatively specified {not used}
- C09B 62/0025 . . {Specific dyes not provided for in groups [C09B 62/004](#) to [C09B 62/018](#)}
- C09B 62/004 . . Anthracene dyes {([C09B 62/0068](#) takes precedence)}
- C09B 62/006 . . Azodyes
- C09B 62/0061 . . . {with coupling components containing an amino directing group}
- C09B 62/0062 . . . {with coupling components containing a hydroxyl directing group}



- C09B 62/0064 . . . {with coupling components containing both hydroxyl and amino groups as directing groups}
- C09B 62/0065 . . . {with coupling components containing a reactive methylene group}
- C09B 62/0067 . . . {with heterocyclic compound as coupling component}
- C09B 62/0068 . . . {dyes containing in the molecule at least one azo group and at least one other chromophore group}
- C09B 62/008 . . . Monoazo dyes
- C09B 62/0081 . . . . {with coupling components containing an amino directing group}
- C09B 62/0083 . . . . {with coupling components containing a hydroxyl directing group}
- C09B 62/0085 . . . . {with coupling components containing both hydroxyl and amino groups as directing groups}
- C09B 62/0086 . . . . {with coupling component containing a reactive methylene group}
- C09B 62/0088 . . . . {with heterocyclic compound as coupling component}
- C09B 62/01 . . . Disazo or polyazo dyes
- C09B 62/012 . . . Metal complex azo dyes
- C09B 62/014 . . Nitro dyes
- C09B 62/016 . . Porphines; Azoporphines
- C09B 62/018 . . Formazane dyes
- C09B 62/02 . with the reactive group directly attached to a heterocyclic ring
- C09B 62/021 . . {Specific dyes not provided for in groups [C09B 62/024](#) to [C09B 62/038](#)}
- C09B 62/022 . . the heterocyclic ring being alternatively specified {not used}
- C09B 62/024 . . . Anthracene dyes
- C09B 62/026 . . . Azo dyes
- C09B 62/0265 . . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
- C09B 62/028 . . . . Monoazo dyes
- C09B 62/03 . . . . Disazo or polyazo dyes
- C09B 62/032 . . . . Metal complex azo dyes
- C09B 62/034 . . . Nitro dyes
- C09B 62/036 . . . Porphines; Azaporphines
- C09B 62/038 . . . Formazane dyes
- C09B 62/04 . . to a triazine ring
- C09B 62/043 . . . {containing two or more triazine rings linked together by a non-chromophoric link}
- C09B 62/046 . . . {Specific dyes not provided for in group [C09B 62/06](#) to [C09B 62/10](#)}
- C09B 62/06 . . . Anthracene dyes
- C09B 62/08 . . . Azo dyes
- C09B 62/082 . . . . {dyes containing in the molecule at least one azo group and at least one other chromophore group}
- C09B 62/085 . . . . Monoazo dyes
- C09B 62/09 . . . . Disazo or polyazo dyes
- C09B 62/095 . . . . Metal complex azo dyes

C09B 62/10	. . . Porphines; Azoporphines
C09B 62/12	. . to a pyridazine ring
C09B 62/125	. . . {Specific dyes non provided for in groups <a href="#">C09B 62/14</a> to <a href="#">C09B 62/18</a> }
C09B 62/14	. . . Anthracene dyes {( <a href="#">C09B 62/162</a> takes precedence)}
C09B 62/16	. . . Azo dyes
C09B 62/162	. . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
C09B 62/165	. . . . Monoazo dyes
C09B 62/17	. . . . Disazo or polyazo dyes
C09B 62/175	. . . . Metal complex azo dyes
C09B 62/18	. . . Porphyrins; Prophyrans {( <a href="#">C09B 62/162</a> takes precedence)}
C09B 62/20	. . to a pyrimidine ring
C09B 62/205	. . . {Specific dyes not provided for in groups <a href="#">C09B 62/22</a> to <a href="#">C09B 62/26</a> }
C09B 62/22	. . . Anthracene dyes {( <a href="#">C09B 62/242</a> takes precedence)}
C09B 62/24	. . . Azo dyes
C09B 62/242	. . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
C09B 62/245	. . . . Monoazo dyes
C09B 62/25	. . . . Disazo or polyazo dyes
C09B 62/255	. . . . Metal complex azo dyes
C09B 62/26	. . . Porphyrins; Prophyrans {( <a href="#">C09B 62/242</a> takes precedence)}
C09B 62/28	. . to a pyrazine ring
C09B 62/285	. . . {Specific dyes not provided for in groups <a href="#">C09B 62/30</a> to <a href="#">C09B 62/34</a> }
C09B 62/30	. . . Anthracene dyes {( <a href="#">C09B 62/322</a> takes precedence)}
C09B 62/32	. . . Azo dyes
C09B 62/322	. . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
C09B 62/325	. . . . Monoazo dyes
C09B 62/33	. . . . Disazo or polyazo dyes
C09B 62/335	. . . . Metal complex azo dyes
C09B 62/34	. . . Porphyrins; Prophyrans {( <a href="#">C09B 62/322</a> takes precedence)}
C09B 62/343	. . to a five membered ring
C09B 62/3435	. . . {Specific dyes not provided for in groups <a href="#">C09B 62/345</a> to <a href="#">C09B 62/357</a> }
C09B 62/345	. . . Anthracene dyes
C09B 62/347	. . . Azo dyes
C09B 62/35	. . . . Monoazo dyes
C09B 62/353	. . . . Disazo or polyazo dyes
C09B 62/355	. . . . Metal complex azo dyes
C09B 62/357	. . . Porphines; Azoporphines
C09B 62/36	. . to some other heterocyclic ring
C09B 62/365	. . . {Specific dyes not provided for in groups <a href="#">C09B 62/38</a> to <a href="#">C09B 62/42</a> }

- C09B 62/38 . . . Anthracene dyes
- C09B 62/40 . . . Azo dyes
- C09B 62/405 . . . . Monoazo dyes
- C09B 62/41 . . . . Disazo or polyazo dyes
- C09B 62/415 . . . . Metal complex azo dyes
- C09B 62/42 . . . Porphines; Azaporphines
- C09B 62/44 . with the reactive group not directly attached to a heterocyclic ring
- C09B 62/4401 . . {with two or more reactive groups at least one of them being directly attached to a heterocyclic system and at least one of them being directly attached to a non-heterocyclic system}
- C09B 62/4403 . . . {the heterocyclic system being a triazine ring}
- C09B 62/4405 . . . . {Dioxazine dyes}
- C09B 62/4407 . . . . {Formazane dyes}
- C09B 62/4409 . . . . {Anthracene dyes}
- C09B 62/4411 . . . . {Azo dyes}
- C09B 62/4413 . . . . . {Non-metallized monoazo dyes}
- C09B 62/4415 . . . . . {Disazo or polyazo dyes}
- C09B 62/4416 . . . . . {Metal complex azo dyes}
- C09B 62/4418 . . . . {Porphines; Azaporphines}
- C09B 62/442 . . . {the heterocyclic system being a pyridazine ring}
- C09B 62/4422 . . . {the heterocyclic system being a pyrimidine ring}
- C09B 62/4424 . . . {Azo dyes}
- C09B 62/4426 . . . {the heterocyclic system being a pyrazine}
- C09B 62/4428 . . . {the heterocyclic system being a five membered ring}
- C09B 62/443 . . the reactive group being alternatively specified
- C09B 62/445 . . . Anthracene dyes
- C09B 62/447 . . . Azo dyes
- C09B 62/45 . . . . Monoazo dyes
- C09B 62/453 . . . . Disazo or polyazo dyes
- C09B 62/455 . . . . Metal complex azo dyes
- C09B 62/457 . . . Porphines; Azaporphines
- C09B 62/463 . . . Formazane dyes
- C09B 62/465 . . the reactive group being an acryloyl group, a quaternised or non-quaternised aminoalkyl carbonyl group or a  $(-N)_n$ -CO-A-O-X or  $(-N)_n$ -CO-A-Hal group, wherein A is an alkylene or alkylidene group, X is hydrogen or an acyl radical of an organic or inorganic acid, Hal is a halogen atom, and n is 0 or 1
- C09B 62/467 . . . Anthracene dyes
- C09B 62/47 . . . Azo dyes
- C09B 62/473 . . . . Monoazo dyes
- C09B 62/475 . . . . Disazo or polyazo dyes
- C09B 62/477 . . . . Metal complex azo dyes

- C09B 62/483
  - . . . Porphines; Azaporphines
- C09B 62/485
  - . . the reactive group being a halo-cyclobutyl-carbonyl, halo-cyclobutyl-vinyl-carbonyl, or halo-cyclobutenyl-carbonyl group
- C09B 62/487
  - . . . Anthracene dyes
- C09B 62/489
  - . . . Azo dyes
- C09B 62/491
  - . . . . Monoazo dyes
- C09B 62/493
  - . . . . Disazo or polyazo dyes
- C09B 62/495
  - . . . . Metal complex azo dyes
- C09B 62/497
  - . . . Porphines; Azaporphines
- C09B 62/503
  - . . the reactive group being an esterified or non-esterified hydroxyalkyl sulfonyl or mercaptoalkyl sulfonyl group, a quaternised or non-quaternised aminoalkyl sulfonyl group, a heterylmercapto alkyl sulfonyl group, a vinyl sulfonyl or a substituted vinyl sulfonyl group, or a thiophene-dioxide group
- C09B 62/5033
  - . . . {Dioxazine dyes}
- C09B 62/5036
  - . . . {Formazane dyes}
- C09B 62/505
  - . . . Anthracene dyes {(C09B 62/5033, C09B 62/5036 take precedence)}
- C09B 62/507
  - . . . Azo dyes {(C09B 62/5033, C09B 62/5036 take precedence)}
- C09B 62/51
  - . . . . Monoazo dyes
- C09B 62/513
  - . . . . Disazo or polyazo dyes
- C09B 62/515
  - . . . . Metal complex azo dyes
- C09B 62/517
  - . . . Porphines; Azaporphines {(C09B 62/5033, C09B 62/5036 take precedence)}
- C09B 62/523
  - . . the reactive group being an esterified or non-esterified hydroxyalkyl sulfonyl amido or hydroxyalkyl amino sulfonyl group, a quaternised or non-quaternised amino alkyl sulfonyl amido group, or a substituted alkyl amino sulfonyl group, or a halogen alkyl sulfonyl amido or halogen alkyl amino sulfonyl group or a vinyl sulfonylamido or a substituted vinyl sulfonamido group
- C09B 62/525
  - . . . Anthracene dyes
- C09B 62/527
  - . . . Azo dyes
- C09B 62/53
  - . . . . Monoazo dyes
- C09B 62/533
  - . . . . Disazo or polyazo dyes
- C09B 62/535
  - . . . . Metal complex azo dyes
- C09B 62/537
  - . . . Porphines; Azaporphines
- C09B 62/54
  - . . the reactive group being an epoxy or halohydrin group
- C09B 62/56
  - . . . Anthracene dyes
- C09B 62/58
  - . . . Azo dyes
- C09B 62/585
  - . . . . Monoazo dyes
- C09B 62/59
  - . . . . Disazo or polyazo dyes
- C09B 62/595
  - . . . . Metal complex azo dyes
- C09B 62/60
  - . . . Porphines; Azaporphines

- C09B 62/62
  - . . the reactive group being an ethylenimino or N-acylated ethylenimino group or a -CO-NH-CH<sub>2</sub>-CH<sub>2</sub>-X group, wherein X is a halogen atom, a quaternary ammonium group or O-acyl and acyl is derived from an organic or inorganic acid, or a beta-substituted ethylamine group
- C09B 62/64
  - . . . Anthracene dyes
- C09B 62/66
  - . . . Azo dyes
- C09B 62/665
  - . . . . Monoazo dyes
- C09B 62/67
  - . . . . Disazo or polyazo dyes
- C09B 62/675
  - . . . . Metal complex azo dyes
- C09B 62/68
  - . . . Porphines; Azaporphines
- C09B 62/763
  - . . the reactive group being a N-methylol group or an O-derivative thereof
- C09B 62/765
  - . . . Anthracene dyes
- C09B 62/767
  - . . . Azo dyes
- C09B 62/77
  - . . . . Monoazo dyes
- C09B 62/773
  - . . . . Disazo or polyazo dyes
- C09B 62/775
  - . . . . Metal complex azo dyes
- C09B 62/777
  - . . . Porphines; Azaporphines
- C09B 62/78
  - . . with other reactive groups
- C09B 62/80
  - . . . Anthracene dyes
- C09B 62/82
  - . . . Azo dyes
- C09B 62/825
  - . . . . Monoazo dyes
- C09B 62/83
  - . . . . Disazo or polyazo dyes
- C09B 62/835
  - . . . . Metal complex azo dyes
- C09B 62/84
  - . . . Porphines; Azaporphines

### **Lakes; Mordants; Dyestuff preparations**

- C09B 63/00
  - Lakes**
- C09B 63/005
  - . {Metal lakes of dyes (complex metal compounds of azo dyes [C09B 45/00](#), metal complexes of colourless compounds [C09B 57/10](#))}
- C09B 65/00
  - Compositions containing mordants (preparation of the mordant compounds [C01](#), [C07](#))**
- C09B 67/00
  - Influencing the physical, e.g. the dyeing or printing properties of dyestuffs without chemical reactions, e.g. by treating with solvents {grinding or grinding assistants, coating of pigments or dyes}; Process features in the making of dyestuff preparations; Dyestuff preparations of a special physical nature, e.g. tablets, films**
- C09B 67/0001
  - . {Post-treatment of organic pigments or dyes}
- C09B 67/0002
  - . . {Grinding; Milling with solid grinding or milling assistants}
- C09B 67/0003
  - . . {Drying, e.g. sprax drying; Sublimation of the solvent}
- C09B 67/0004
  - . . {Coated particulate pigments or dyes}
- C09B 67/0005
  - . . . {the pigments being nanoparticles}

- C09B 67/0007 . . . {with inorganic coatings}
- C09B 67/0008 . . . {with organic coatings}
- C09B 67/0009 . . . . {containing organic acid derivatives}
- C09B 67/001 . . . . . {containing resinic acid derivatives}
- C09B 67/0011 . . . . {containing amine derivatives, e.g. polyamines}
- C09B 67/0013 . . . . {with polymeric coatings}
- C09B 67/0014 . . {Influencing the physical properties by treatment with a liquid, e.g. solvents}
- C09B 67/0015 . . . {of azoic pigments}
- C09B 67/0016 . . . {of phthalocyanines}
- C09B 67/0017 . . {Influencing the physical properties by treatment with an acid, H<sub>2</sub>SO<sub>4</sub>}
- C09B 67/0019 . . . {of phthalocyanines}
- C09B 67/002 . . {Influencing the physical properties by treatment with an amine}
- C09B 67/0021 . . {Flushing of pigments}
- C09B 67/0022 . . {Wet grinding of pigments}
- C09B 67/0023 . . . {of phthalocyanines}
- C09B 67/0025 . {Crystal modifications; Special X-ray patterns}
- C09B 67/0026 . . {of phthalocyanine pigments}
- C09B 67/0027 . . {of quinacridones}
- C09B 67/0028 . . {of azo compounds}
- C09B 67/0029 . . . {of monoazo compounds}
- C09B 67/003 . . {of diketopyrrolopyrrole}
- C09B 67/0032 . {Treatment of phthalocyanine pigments ([C09B 67/0016](#), [C09B 67/0019](#) take precedence)}
- C09B 67/0033 . {Blends of pigments; Mixtured crystals; Solid solutions}
- C09B 67/0034 . . {Mixtures of two or more pigments or dyes of the same type}
- C09B 67/0035 . . . {Mixtures of phthalocyanines}
- C09B 67/0036 . . . {Mixtures of quinacridones}
- C09B 67/0038 . . . {Mixtures of anthraquinones}
- C09B 67/0039 . . . {Mixtures of diketopyrrolopyrroles}
- C09B 67/004 . . {Mixtures of two or more reactive dyes}
- C09B 67/0041 . . {mixtures containing one azo dye}
- C09B 67/0042 . . . {Mixtures containing two reactive dyes one of them being an azo dye}
- C09B 67/0044 . . . . {both having the reactive group directly attached to a heterocyclic system}
- C09B 67/0045 . . . . {both having the reactive group not directly attached to a heterocyclic system}
- C09B 67/0046 . . {Mixtures of two or more azo dyes}
- C09B 67/0047 . . . {Mixtures of two or more reactive azo dyes}
- C09B 67/0048 . . . . {all the reactive groups being directly attached to a heterocyclic system}

C09B 67/005	. . . . {all the reactive groups being not directly attached to a heterocyclic system}
C09B 67/0051	. . . {mixture of two or more monoazo dyes}
C09B 67/0052	. . . . {Mixtures of two or more reactive monoazo dyes}
C09B 67/0053	. . . . . {all the reactive groups being directly attached to a heterocyclic system}
C09B 67/0054	. . . . . {all the reactive groups not being directly attached to a heterocyclic system}
C09B 67/0055	. . . {Mixtures of two or more disazo dyes}
C09B 67/0057	. . . . {Mixtures of two or more reactive disazo dyes}
C09B 67/0058	. . . . . {all the reactive groups are directly attached to a heterocyclic system}
C09B 67/0059	. . . . . {all the reactive groups are not directly attached to a heterocyclic system}
C09B 67/006	. {Preparation of organic pigments}
C09B 67/0061	. . {by grinding a dyed resin}
C09B 67/0063	. . {of organic pigments with only macromolecular substances}
C09B 67/0064	. . . {of phthalocyanines with only macromolecular substances}
C09B 67/0065	. . {of organic pigments with only non-macromolecular compounds}
C09B 67/0066	. . {Aqueous dispersions of pigments containing only dispersing agents}
C09B 67/0067	. . . {Aqueous dispersions of phthalocyanine pigments containing only dispersing agents}
C09B 67/0069	. . {Non aqueous dispersions of pigments containing only a solvent and a dispersing agent}
C09B 67/007	. . . {Non aqueous dispersions of phthalocyanines containing only a solvent and a dispersing agent}
C09B 67/0071	. {Process features in the making of dyestuff preparations; Dehydrating agents; Dispersing agents; Dustfree compositions}
C09B 67/0072	. . {Preparations with anionic dyes or reactive dyes}
C09B 67/0073	. . . {Preparations of acid or reactive dyes in liquid form}
C09B 67/0075	. . {Preparations with cationic dyes}
C09B 67/0076	. . . {Preparations of cationic or basic dyes in liquid form}
C09B 67/0077	. . {Preparations with possibly reduced vat, sulfur or indigo dyes}
C09B 67/0078	. . . {Preparations of vat, sulfur or indigo dyes in liquid form}
C09B 67/0079	. . {Azoic dyestuff preparations}
C09B 67/008	. . {Preparations of disperse dyes or solvent dyes}
C09B 67/0082	. . . {in liquid form}
C09B 67/0083	. . {Solutions of dyes}
C09B 67/0084	. . {Dispersions of dyes}
C09B 67/0085	. . . {Non common dispersing agents}
C09B 67/0086	. . . . {anionic dispersing agents}
C09B 67/0088	. . . . {cationic dispersing agents}



C09B 67/0089	. . . . {non ionic dispersing agent, e.g. EO or PO addition products}
C09B 67/009	. . . . {polymeric dispersing agent}
C09B 67/0091	. . . {Process features in the making of dispersions, e.g. ultrasonics}
C09B 67/0092	. . {Dyes in solid form}
C09B 67/0094	. . . {Treatment of powders, e.g. antidusting}
C09B 67/0095	. . . {Process features in the making of granulates}
C09B 67/0096	. {Purification; Precipitation; Filtration}
C09B 67/0097	. {Dye preparations of special physical nature; Tablets, films, extrusion, microcapsules, sheets, pads, bags with dyes}
C09B 67/0098	. {Organic pigments exhibiting interference colours, e.g. nacrous pigments}
<b>C09B 68/00</b>	<b>{Organic pigments surface-modified by grafting, e.g. by establishing covalent or complex bonds, in order to improve the pigment properties, e.g. dispersibility or rheology}</b>
C09B 68/20	. {characterised by the process features}
C09B 68/22	. . {Acid treatment (for acid pasting <a href="#">C09B 67/0015</a> )}
C09B 68/24	. . {Azo-coupling}
C09B 68/26	. . {Oxidation}
C09B 68/28	. . {Complexing}
C09B 68/40	. {characterised by the chemical nature of the attached groups}
C09B 68/41	. . {Polymers attached to the pigment surface ( <a href="#">C09B 68/444</a> , <a href="#">C09B 68/446</a> take precedence)}
C09B 68/42	. . {Ionic groups, e.g. free acid}
C09B 68/423	. . . {Cationic groups}
C09B 68/4235	. . . . {Ammonium groups or derivatives thereof}
C09B 68/425	. . . {Anionic groups}
C09B 68/4253	. . . . {Sulfonic acid groups}
C09B 68/4257	. . . . {Carboxylic acid groups}
C09B 68/427	. . . {Ionic groups and at least one triazine ring present at the same time}
C09B 68/44	. . {Non-ionic groups, e.g. halogen, OH or SH}
C09B 68/441	. . . {Sulfonic acid derivatives, e.g. sulfonic acid amides or sulfonic acid esters}
C09B 68/443	. . . {Carboxylic acid derivatives, e.g. carboxylic acid amides, carboxylic acid esters or CN groups}
C09B 68/444	. . . {Polyether}
C09B 68/446	. . . {Amines or polyamines, e.g. aminopropyl, 1,3,4,-triamino-pentyl or polyethylene imine}
C09B 68/447	. . . {Alkyl groups}
C09B 68/4475	. . . . {Substituted alkyl groups}
C09B 68/449	. . . {Unsaturated carbohydrates groups, e.g. alkenyl or alkynyl}
C09B 68/4495	. . . . {Substituted unsaturated carbohydrates groups}
C09B 68/46	. . {Aromatic cyclic groups}



- C09B 68/463 . . . {Substituted aromatic groups}
- C09B 68/467 . . . {Heteroaromatic groups}
- C09B 68/4673 . . . . {5-Membered rings}
- C09B 68/4677 . . . . {6-Membered rings}
- C09B 68/46775 . . . . . {Triazine ([C09B 68/427](#) takes precedence)}
- C09B 68/48 . . {Non-aromatic cyclic groups}
- C09B 68/485 . . . {Substituted non-aromatic cyclic groups}

**C09B 69/00****Dyes not provided for by a single group of this subclass**

- C09B 69/001 . {Dyes containing an onium group attached to the dye skeleton via a bridge}
- C09B 69/002 . . {Hydrazinium group}
- C09B 69/004 . . {Sulfonium group}
- C09B 69/005 . . {Isothiuronium group}
- C09B 69/007 . {Dyestuffs containing phosphonic or phosphinic acid groups and derivatives}
- C09B 69/008 . {Dyes containing a substituent, which contains a silicon atom}
- C09B 69/02 . Dyestuff salts, e.g. salts of acid dyes with basic dyes (for Na, K or  $\text{NH}_4^+$  salts or for chlorides, sulfates or chlorozincates, see the relevant dye groups)
- C09B 69/04 . . of anionic dyes with nitrogen containing compounds
- C09B 69/045 . . . {of anionic azo dyes}
- C09B 69/06 . . of cationic dyes with organic acids {or with inorganic complex acids}
- C09B 69/065 . . . {of cationic azo dyes}
- C09B 69/08 . Dyes containing a splittable water solubilizing group {(Dyes containing an onium group attached to the dye molecule via a bridge are to be considered as cationic dyes and are classified with the respective dyes such as [C09B 44/02](#) to [C09B 44/08](#); [C09B 69/001](#) to [C09B 69/005](#))}
- C09B 69/10 . Polymeric dyes; Reaction products of dyes with monomers or with macromolecular compounds {(addition products of alkylene oxide to dyes, [C09B 69/00](#); dyeing with polymeric dyes [D06P 1/0056](#))}
- C09B 69/101 . . {containing an anthracene dye}
- C09B 69/102 . . . {containing a perylene dye}
- C09B 69/103 . . {containing a diaryl- or triarylmethane dye}
- C09B 69/104 . . {containing an indole dye, including melanine derivatives}
- C09B 69/105 . . {containing a methine or polymethine dye}
- C09B 69/106 . . {containing an azo dye}
- C09B 69/107 . . {containing an azomethine dye}
- C09B 69/108 . . {containing a phthalocyanine dye}
- C09B 69/109 . . {containing other specific dyes}