

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

#### C09 DYES; PAINTS; POLISHES; NATURAL RESINS; ADHESIVES; COMPOSITIONS NOT OTHERWISE PROVIDED FOR; APPLICATIONS OF MATERIALS NOT OTHERWISE PROVIDED FOR

#### C09B ORGANIC DYES OR CLOSELY-RELATED COMPOUNDS FOR PRODUCING DYES {, e.g. **PIGMENTS**}; 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 in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

C09B 23/01	covered by	<a href="#">C09B 23/0008</a> - <a href="#">C09B 23/0091</a>
C09B 29/01	covered by	<a href="#">C09B 29/0003</a> - <a href="#">C09B 29/0022</a>
C09B 29/03	covered by	<a href="#">C09B 29/0007</a>
C09B 29/033	covered by	<a href="#">C09B 29/0025</a>
C09B 29/036	covered by	<a href="#">C09B 29/0029</a>
C09B 29/039	covered by	<a href="#">C09B 29/0074</a> - <a href="#">C09B 29/0081</a>
C09B 29/042	covered by	<a href="#">C09B 29/0085</a>
C09B 29/045	covered by	<a href="#">C09B 29/0088</a>
C09B 29/048	covered by	<a href="#">C09B 29/0092</a>
C09B 29/085	covered by	<a href="#">C09B 29/0003</a> , <a href="#">C09B 29/0801</a> - <a href="#">C09B 29/0848</a>
C09B 29/09	covered by	<a href="#">C09B 29/0025</a> , <a href="#">C09B 29/0801</a> - <a href="#">C09B 29/0848</a>
C09B 29/15	covered by	<a href="#">C09B 29/103</a>
C09B 29/40	covered by	<a href="#">C09B 29/3608</a> - <a href="#">C09B 29/3613</a>
C09B 29/42	covered by	<a href="#">C09B 29/3617</a> - <a href="#">C09B 29/3639</a>
C09B 29/44	covered by	<a href="#">C09B 29/3643</a>
C09B 29/46	covered by	<a href="#">C09B 29/3652</a>
C09B 29/48	covered by	<a href="#">C09B 29/3656</a>
C09B 29/50	covered by	<a href="#">C09B 29/366</a>
C09B 29/52	covered by	<a href="#">C09B 29/3665</a>
C09B 33/13	covered by	<a href="#">C09B 33/12</a>
C09B 46/00	covered by	<a href="#">C09B 27/00</a> - <a href="#">C09B 45/00</a>
C09B 67/02	covered by	<a href="#">C09B 67/0097</a>
C09B 67/04	covered by	<a href="#">C09B 67/0001</a>
C09B 67/06	covered by	<a href="#">C09B 67/0003</a>
C09B 67/08	covered by	<a href="#">C09B 67/0004</a>
C09B 67/10	covered by	<a href="#">C09B 67/0014</a>
C09B 67/12	covered by	<a href="#">C09B 67/0016</a>
C09B 67/14	covered by	<a href="#">C09B 67/0017</a>
C09B 67/16	covered by	<a href="#">C09B 67/0019</a>
C09B 67/18	covered by	<a href="#">C09B 67/002</a>
C09B 67/20	covered by	<a href="#">C09B 67/006</a>
C09B 67/22	covered by	<a href="#">C09B 67/0033</a>
C09B 67/24	covered by	<a href="#">C09B 67/0072</a>
C09B 67/26	covered by	<a href="#">C09B 67/0073</a>
C09B 67/28	covered by	<a href="#">C09B 67/0077</a>
C09B 67/30	covered by	<a href="#">C09B 67/0078</a>
C09B 67/32	covered by	<a href="#">C09B 67/0075</a>
C09B 67/34	covered by	<a href="#">C09B 67/0076</a>
C09B 67/36	covered by	<a href="#">C09B 67/0079</a>
C09B 67/38	covered by	<a href="#">C09B 67/008</a>
C09B 67/40	covered by	<a href="#">C09B 67/0082</a>

C09B			
(continued)	<a href="#">C09B 67/42</a>	covered by	<a href="#">C09B 67/0071</a>
	<a href="#">C09B 67/44</a>	covered by	<a href="#">C09B 67/0083</a>
	<a href="#">C09B 67/46</a>	covered by	<a href="#">C09B 67/0084</a>
	<a href="#">C09B 67/48</a>	covered by	<a href="#">C09B 67/0025</a>
	<a href="#">C09B 67/50</a>	covered by	<a href="#">C09B 67/0026</a>
	<a href="#">C09B 67/52</a>	covered by	<a href="#">C09B 67/0027</a>
	<a href="#">C09B 67/54</a>	covered by	<a href="#">C09B 67/0096</a>

**Anthracene dyes**

<b>1/00</b>	<b>Dyes with anthracene nucleus not condensed with any other ring</b>	1/32	. . . . substituted by aryl groups ( <a href="#">anthrimides C09B 1/48</a> )
1/002	. {containing onium groups}	1/325	. . . . {Dyes with no other substituents than the amino groups}
1/005	. {Di-anthraquinonyl and derivative compounds}	1/34	. . . . sulfonated
1/007	. {Seleno-anthraquinones}	1/343	. . . . {only sulfonated in the anthracene nucleus}
1/02	. Hydroxy-anthraquinones; Ethers or esters thereof { <a href="#">C09B 1/007 takes precedence</a> }	1/346	. . . . {only sulfonated in a substituent}
1/04	. . Preparation by synthesis of the nucleus	1/36	. . . Dyes with acylated amino groups
1/06	. . Preparation from starting materials already containing the anthracene nucleus	1/363	. . . {the acyl groups being residues of a dicarboxylic compound forming a bridge between two anthraquinones}
1/08	. . . Dyes containing only OH-groups	1/366	. . . . {Urethan derivatives}
1/10	. . . Dyes containing halogen	1/38	. . . . Urea and thiourea derivatives
1/12	. . . Dyes containing sulfonic acid groups	1/40	. . . . the acyl groups being residues of an aliphatic or araliphatic carboxylic acid
1/14	. . . Dyes containing ether groups	1/405	. . . . {dicarboxylic}
1/16	. Amino-anthraquinones { <a href="#">C09B 1/007 takes precedence</a> }	1/42	. . . . the acyl groups being residues of an aromatic carboxylic acid
1/18	. . Preparation by synthesis of the nucleus	1/425	. . . . {dicarboxylic}
1/20	. . Preparation from starting materials already containing the anthracene nucleus	1/43	. . . . Dicarboxylic acids
1/201	. . . {Dyes with no other substituents than the amino groups}	1/44	. . . . the acyl groups being residues of a heterocyclic carboxylic acid
1/202	. . . {sulfonated}	1/445	. . . . {dicarboxylic}
1/203	. . . . {only sulfonated in the anthracene nucleus}	1/46	. . . . the acyl groups being residues of cyanuric acid or an analogous heterocyclic compound
1/204	. . . . {only sulfonated in a substituent}	1/467	. . . . attached to two or more anthraquinone rings
1/205	. . . {Dyes with an unsaturated C on the N atom attached to the nucleus (C=O and C=S, <a href="#">C09B 1/36</a> )}	1/473	. . . . the acyl groups being residues of a sulfonic acid
1/206	. . . {Dyes with amino groups substituted by heterocyclic radicals ( <a href="#">triazinic or analogous heterocyclic radical, C09B 1/46</a> )}	1/48	. . . Anthrimides
1/207	. . . {Dyes with amino groups and with onium groups}	1/50	. Amino-hydroxy-anthraquinones; Ethers and esters thereof { <a href="#">C09B 1/007 takes precedence</a> }
1/208	. . . {Dyes with amino groups substituted by inorganic radicals}	1/501	. . {containing onium groups}
1/22	. . . Dyes with unsubstituted amino groups	1/503	. . unsubstituted amino-hydroxy anthraquinone
1/24	. . . . sulfonated	1/5035	. . . {only amino and hydroxy groups}
1/26	. . . Dyes with amino groups substituted by hydrocarbon radicals	1/51	. . N-substituted amino-hydroxy anthraquinone
1/262	. . . . {Dyes with no other substituents than the substituted amino groups}	1/512	. . . {only amino and hydroxy groups}
1/264	. . . . {sulfonated}	1/514	. . . N-aryl derivatives ( <a href="#">N-aralkyl derivatives C09B 1/515</a> )
1/266	. . . . {only sulfonated in the anthracene nucleus}	1/5145	. . . . {only amino and hydroxy groups}
1/268	. . . . {only sulfonated in a substituent}	1/515	. . . N-alkyl, N-aralkyl or N-cycloalkyl derivatives
1/28	. . . . substituted by alkyl, aralkyl or cyclo alkyl groups	1/5155	. . . . {only amino and hydroxy groups}
1/285	. . . . {Dyes with no other substituents than the amino groups}	1/516	. . . N-acylated derivatives
1/30	. . . . sulfonated	1/5165	. . . . {only amino and hydroxy groups}
1/303	. . . . {only sulfonated in the anthracene nucleus}	1/52	. . sulfonated
1/306	. . . . {only sulfonated in a substituent}	1/521	. . . {unsubstituted amino and hydroxy groups}
		1/523	. . . {N-substituted amino and hydroxy anthraquinone}
		1/525	. . . . {N-aryl derivatives}
		1/526	. . . . {N-alkyl, N-aralkyl or N-cycloalkyl derivatives}
		1/528	. . . . {N-acyl derivatives}
		1/54	. . etherified

- 1/542 . . . {Anthraquinones with aliphatic, cycloaliphatic, araliphatic or aromatic ether groups}
- 1/545 . . . {Anthraquinones with aliphatic, cycloaliphatic or araliphatic ether groups}
- 1/547 . . . {Anthraquinones with aromatic ether groups}
- 1/56 . . . Mercapto-anthraquinones {(C09B 1/007 takes precedence)}
- 1/565 . . . {Mercaptoanthraquinones containing onium groups}
- 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 1/22 .. C09B 1/28 ... C09B 1/32 ... C09B 1/36 .. C09B 1/50 . and have the same meaning as the corresponding groups

- 1/585 . . . {substituted by aryl radicals}
- 1/60 . . . substituted by aliphatic, cycloaliphatic or araliphatic radicals
- 1/62 . . . with mercapto groups substituted by a heterocyclic ring
- 3/00 Dyes with an anthracene nucleus condensed with one or more carbocyclic rings**
- 3/02 . Benzanthrones
- 3/04 . . Preparation by synthesis of the nucleus
- 3/06 . . Preparation from starting materials already containing the benzanthrone nucleus
- 3/08 . . . by halogenation
- 3/10 . . . Amino derivatives
- 3/12 . . Dibenzanthrone
- 3/14 . Perylene derivatives
- 3/16 . . Preparation by synthesis of the nucleus
- 3/18 . . Preparation from starting materials already containing the perylene nucleus
- 3/20 . . . by halogenation
- 3/22 . Dibenzanthrone; Isodibenzanthrone
- 3/24 . . Preparation by synthesis of the nucleus
- 3/26 . . . from dibenzanthronyls
- 3/28 . . . from perylene derivatives
- 3/30 . . Preparation from starting materials already containing the dibenzanthrone or isodibenzanthrone nucleus
- 3/32 . . . by halogenation
- 3/34 . . . by oxidation
- 3/36 . . . by etherification of hydroxy compounds
- 3/38 . . . by introduction of hydrocarbon or acyl residues into amino groups
- 3/40 . Pyranthrone
- 3/42 . . Preparation by synthesis of the nucleus
- 3/44 . . Preparation from starting materials already containing the pyranthrone nucleus
- 3/46 . . . by halogenation

- 3/48 . . . Amino derivatives
- 3/50 . Dibenzoanthraquinones
- 3/52 . . Preparation by synthesis of the nucleus
- 3/54 . . Preparation from starting materials already containing the dibenzoanthraquinone nucleus
- 3/56 . . . Amino derivatives
- 3/58 . Benzantraquinones
- 3/60 . Anthanthrones
- 3/62 . . Preparation by synthesis of the nucleus
- 3/64 . . Preparation from starting materials already containing the anthanthrone nucleus
- 3/66 . . . by halogenation
- 3/68 . . . Amino derivatives
- 3/70 . Benzo-, naphtho-, and anthra-dianthrone
- 3/72 . . Preparation by synthesis of the nucleus
- 3/74 . . Preparation from starting materials already containing the benzo, naphtho-, or anthradianthrone nucleus
- 3/76 . . . by halogenation
- 3/78 . Other dyes in which the anthracene nucleus is condensed with one or more carbocyclic rings
- 3/80 . . Preparation by synthesis of the nucleus
- 3/82 . . Preparation from starting materials already containing the condensed anthracene nucleus
- 5/00 Dyes with an anthracene nucleus condensed with one or more heterocyclic rings with or without carbocyclic rings**
- 5/002 . {the heterocyclic rings being condensed in peri position and in 1-2 or 2-3 position}
- 5/004 . . {only O-containing hetero rings}
- 5/006 . . {only S-containing hetero rings}
- 5/008 . . {only N-containing hetero rings}
- 5/02 . the heterocyclic ring being {only} condensed in peri position
- 5/022 . . {not provided for in one of the sub groups C09B 5/04 - C09B 5/20}
- 5/024 . . . {only O-containing hetero rings}
- 5/026 . . . {only S-containing hetero rings}
- 5/028 . . . {only N-containing hetero rings}
- 5/04 . Pyrazolanthrone
- 5/06 . . . Benzanthrone-pyrazolanthrone condensation products
- 5/08 . . . Dipyrazolanthrone
- 5/085 . . . {Condensation products of dipyrazolanthrone}
- 5/10 . . Isothiazolanthrone; Isoxazolanthrone; Isoselenazolanthrone
- 5/12 . . Thiophenanthrone
- 5/14 . . Benz-azabenzanthrone (anthrapyridone)
- 5/16 . . Benz-diazabenzanthrone, e.g. anthrapyrimidone
- 5/18 . . Coeroxene; Coerthiene; Coeramidene; Derivatives thereof
- 5/20 . . Flavanthrone
- 5/22 . . . Preparation from starting materials already containing the flavanthrone nucleus
- 5/24 . the heterocyclic rings being {only} condensed with an anthraquinone nucleus in 1-2 or 2-3 position
- 5/2409 . . {not provided for in one of the sub groups C09B 5/26 - C09B 5/62}
- 5/2418 . . . {only oxygen-containing hetero rings}
- 5/2427 . . . {only sulfur-containing hetero rings}
- 5/2436 . . . {only nitrogen-containing hetero rings}

- 5/2445 . . . . {Phtaloyl isoindoles}
- 5/2454 . . . . . {5,6 phtaloyl dihydro isoindoles}
- 5/2463 . . . . . {1,3 oxo or imino derivatives}
- 5/2472 . . . . . {1,3 dioxo derivatives}
- 5/2481 . . . . . {1-oxo-3-imino derivatives}
- 5/249 . . . . . {1,3 diimino derivatives}
- 5/26 . . Carbazoles of the anthracene series
- 5/28 . . . Anthrimide carbazoles
- 5/30 . . 1,2 azoles of the anthracene series
- 5/32 . . 1,3 azoles of the anthracene series
- 5/34 . . Anthraquinone acridones or thioxanthrones
- 5/342 . . . {Anthraquinone thioxanthrones}
- 5/345 . . . . {Compounds containing thioxanthrone and carbazole rings}
- 5/347 . . . {Anthraquinone acridones}
- 5/36 . . . Amino acridones
- 5/38 . . . Compounds containing acridone and carbazole rings
- 5/40 . . . Condensation products of benzanthranyl-amino-anthraquinones
- 5/42 . . Pyridino anthraquinones
- 5/44 . . Azines of the anthracene series
- 5/46 . . . Para-diazines
- 5/48 . . . . Bis-anthraquinonediazines (indanthrone)
- 5/50 . . . . . Preparation by alkaline melting of 2-amino-anthraquinones
- 5/52 . . . . . Preparation by condensation of 1,2-halogeno-amino-anthraquinones
- 5/54 . . . . . Preparation from 2-amino-anthrahydroquinones
- 5/56 . . . . . Preparation from starting materials already containing the indanthrene nucleus
- 5/58 . . . . . by halogenation
- 5/60 . . . Thiazines; Oxazines
- 5/62 . . Cyclic imides or amidines of peri-dicarboxylic acids of the anthracene, benzanthrene, or perylene series

#### 6/00 Anthracene dyes not provided for above

#### 7/00 Indigoid dyes

- 7/02 . Bis-indole indigos
- 7/04 . . Halogenation thereof
- 7/06 . Indone-thionaphthene indigos
- 7/08 . Other indole-indigos
- 7/10 . Bis-thionaphthene indigos
- 7/12 . Other thionaphthene indigos

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

- 9/02 . of anthracene dyes
- 9/04 . of indigoid dyes

#### 11/00 Diaryl- or thriarylmethane dyes

- 11/02 . derived from diarylmethanes
- 11/04 . derived from triarylmethanes {, i.e. central C-atom is substituted by amino, cyano, alkyl}
- 11/06 . . Hydroxy derivatives of triarylmethanes in which at least one OH group is bound to an aryl nucleus {and their ethers or esters}
- 11/08 . . . Phthaleins; {Phenolphthaleins; Fluorescein}
- 11/10 . . Amino derivatives of triarylmethanes
- 11/12 . . . without any OH group bound to an aryl nucleus

- 11/14 . . . . Preparation from aromatic aldehydes, aromatic carboxylic acids or derivatives thereof and aromatic amines
- 11/16 . . . . Preparation from diarylketones or diarylcarbinols {, e.g. benzhydrol}
- 11/18 . . . . Preparation by oxidation
- 11/20 . . . . Preparation from other triarylmethane derivatives {, e.g. by substitution, by replacement of substituents (for dyesalts of triarylmethane dyes C09B 69/06)}
- 11/22 . . . containing OH groups bound to an aryl nucleus {and their ethers and esters}
- 11/24 . . . Phthaleins containing amino groups {; Phthalanes; Fluoranes; Phthalides; Rhodamine dyes; Phthaleins having heterocyclic aryl rings; Lactone or lactame forms of triarylmethane dyes}
- 11/245 . . . . {Phthaleins having both OH and amino substituent(s) on aryl ring}
- 11/26 . . Triarylmethane dyes in which at least one of the aromatic nuclei is heterocyclic {(phthaleins C09B 11/24)}
- 11/28 . . Pyronines {; Xanthon, thioxanthon, selenoxanthon, telluroxanthon dyes}
- 13/00 Oxyketone dyes**
- 13/02 . of the naphthalene series, e.g. naphthazarin
- 13/04 . of the pyrene series
- 13/06 . of the acetophenone series

#### Acridine, azine, oxazine, or thiazine dyes

#### 15/00 Acridine dyes

#### 17/00 Azine dyes

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

#### 19/00 Oxazine dyes

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

#### 21/00 Thiazine dyes

#### Quinoline or polymethine dyes

#### 23/00 Methine or polymethine dyes, e.g. cyanine dyes

- 23/0008 . {substituted on the polymethine chain}
- 23/0016 . . {the substituent being a halogen atom}
- 23/0025 . . {the substituent being bound through an oxygen atom}
- 23/0033 . . {the substituent being bound through a sulfur atom}
- 23/0041 . . {the substituent being bound through a nitrogen atom}
- 23/005 . . {the substituent being a COOH and/or a functional derivative thereof}
- 23/0058 . . . {the substituent being CN}
- 23/0066 . {the polymethine chain being part of a carbocyclic ring, (e.g. benzene, naphthalene, cyclohexene, cyclobutene-quadratic acid)}
- 23/0075 . {the polymethine chain being part of a heterocyclic ring}

- 23/0083 . . {the heteroring being rhodanine in the chain}
- 23/0091 . {having only one heterocyclic ring at one end of the methine chain, e.g. hemicyanines, hemioxonol (styryl dyes see C09B 23/14)}
- 23/02 . the polymethine chain containing an odd number of >CH- {or >C[alkyl]-} groups
- 23/04 . . one >CH- group, e.g. cyanines, isocyanines, pseudocyanines
- 23/06 . . three >CH- groups, e.g. carbocyanines
- 23/08 . . more than three >CH- groups, e.g. polycarbocyanines
- 23/083 . . . {five >CH- groups}
- 23/086 . . . {more than five >CH- groups}
- 23/10 . The polymethine chain containing an even number of >CH- groups ({styryl dyes C09B 23/14, C09B 23/14 takes precedence})
- 23/102 . . {two heterocyclic rings linked carbon-to-carbon (C09B 7/00 takes precedence)}
- 23/105 . . {two >CH- groups}
- 23/107 . . {four >CH- groups}
- 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}
- 23/14 . Styryl dyes
- 23/141 . . {Bis styryl dyes containing two radicals C<sub>6</sub>H<sub>5</sub>-CH=CH-}
- 23/143 . . {the ethylene chain carrying a COOH or a functionally modified derivative, e.g. -CN, -COR, -COOR, -CON=, C<sub>6</sub>H<sub>5</sub>-CH=C-CN}
- 23/145 . . {the ethylene chain carrying an heterocyclic residue, e.g. heterocycle-CH=CH-C<sub>6</sub>H<sub>5</sub>}
- 23/146 . . . {(Benzo)thiazolstyrylamino dyes}
- 23/148 . . {Stilbene dyes containing the moiety -C<sub>6</sub>H<sub>5</sub>-CH=CH-C<sub>6</sub>H<sub>5</sub> (stilbene azo dyes C09B 29/00)}
- 23/16 . the polymethine chain containing hetero atoms
- 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-)}
- 23/164 . . . {containing one nitrogen atom}
- 23/166 . . . {containing two or more nitrogen atoms (hydrazon dyes -CH=N-N- C09B 26/02)}
- 23/168 . . {containing only phosphorus atoms, i.e. phosphacyanine}
- 25/00 Quinophthalones**
- 26/00 Hydrazone dyes; Triazene dyes**
- 26/02 . Hydrazone dyes (hydrazon-azo dyes C09B 56/18)
- 26/04 . . cationic
- 26/06 . Triazene dyes (triazene-azo dyes C09B 56/20)

**Azo dyes****NOTE**

In groups C09B 27/00 - 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

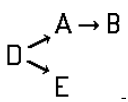
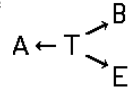
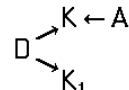
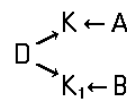
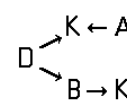
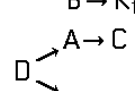
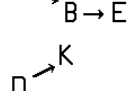
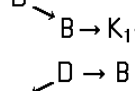
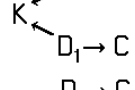
component. The arrow is pointing to the part derived from the coupling component.

- 27/00 Preparations in which the azo group is formed in any way other than by diazotising and coupling, {e.g. oxidation}**
- 27/06 . Tartrazines
- 29/00 Monoazo dyes prepared by diazotising and coupling**
- 29/0003 . {from diazotized anilines}
- 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}
- 29/0011 . . {from diazotized anilines directly substituted by a heterocyclic ring (not condensed)}
- 29/0014 . {from diazotized aminonaphthalene}
- 29/0018 . {from diazotized aminopolycyclic rings}
- 29/0022 . . {from diazotized aminoanthracene}
- 29/0025 . {from diazotized amino heterocyclic compounds}
- 29/0029 . . {the heterocyclic ring containing only nitrogen as heteroatom}
- 29/0033 . . . {containing a five-membered heterocyclic ring with one nitrogen atom}
- 29/0037 . . . {containing a five-membered heterocyclic ring with two nitrogen atoms}
- 29/004 . . . {containing a five-membered heterocyclic ring with three nitrogen atoms}
- 29/0044 . . . {containing a five-membered heterocyclic ring with four nitrogen atoms}
- 29/0048 . . . {containing a six-membered heterocyclic ring with one nitrogen atom}
- 29/0051 . . . {containing a six-membered heterocyclic ring with two nitrogen atoms}
- 29/0055 . . {the heterocyclic ring containing only oxygen as heteroatom}
- 29/0059 . . {the heterocyclic ring containing only sulfur as heteroatom}
- 29/0062 . . {the heterocyclic ring containing nitrogen and oxygen as heteroatoms}
- 29/0066 . . . {containing a five-membered heterocyclic ring with nitrogen and oxygen atoms}
- 29/007 . . . {containing a six-membered heterocyclic ring with nitrogen and oxygen atoms}
- 29/0074 . . {the heterocyclic ring containing nitrogen and sulfur as heteroatoms}
- 29/0077 . . . {containing a five-membered heterocyclic ring with one nitrogen and one sulfur as heteroatoms}
- 29/0081 . . . . {Isothiazoles or condensed isothiazoles}
- 29/0085 . . . . {Thiazoles or condensed thiazoles}
- 29/0088 . . . . {Benzothiazoles}
- 29/0092 . . . {containing a five-membered heterocyclic ring with two nitrogen and one sulfur as heteroatoms}
- 29/0096 . . {from other diazotized amino heterocyclic rings}
- 29/02 . from diazotised o-amino-hydroxy compounds
- 29/06 . from coupling components containing amino as the only directing group
- 29/065 . . {containing water solubilizing groups}
- 29/08 . . Amino benzenes
- 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}
- 29/0802 . . . . {containing COOH}



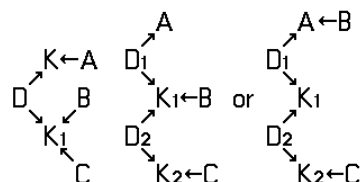
- 29/0803 . . . . {containing SO<sub>3</sub>H, OSO<sub>3</sub>H}
- 29/0804 . . . . {containing PO<sub>3</sub>H<sub>2</sub>, OPO<sub>3</sub>H<sub>2</sub>}
- 29/0805 . . . {free of acid groups}
- 29/0807 . . . . {characterised by the amino group}
- 29/0808 . . . . . {unsubstituted amino group}
- 29/0809 . . . . . {substituted amino group}
- 29/081 . . . . . {unsubstituted alkylamino, alkenylamino, alkynylamino, cycloalkylamino, aralkylamino or arylamino}
- 29/0811 . . . . . {further substituted alkylamino, alkenylamino, alkynylamino, cycloalkylamino aralkylamino or arylamino}
- 29/0813 . . . . . {substituted by OH, O-C(=X)-R, O-C(=X)-X-R, O-R (X being O,S,NR; R being hydrocarbonyl)}
- 29/0814 . . . . . {substituted by N}
- 29/0815 . . . . . {substituted by -C(=O)-}
- 29/0816 . . . . . {substituted by -COOR}
- 29/0817 . . . . . {having N(-aliphatic residue-COOR)<sub>2</sub> as substituents}
- 29/0819 . . . . . {substituted by -CON<}
- 29/082 . . . . . {substituted by halogen}
- 29/0821 . . . . . {substituted by SH, SR, SO<sub>2</sub>R, SO<sub>2</sub>XR, SO<sub>2</sub>N}
- 29/0822 . . . . . {substituted by NO<sub>2</sub>}
- 29/0823 . . . . . {substituted by CN}
- 29/0825 . . . . . {having N(-alkenylene-CN/-alkynylene-CN)(-aliphatic residue-CN)}
- 29/0826 . . . . . {having N(-alkenylene/-alkynylene-O)(-alkenylene/-alkynylene-CN)}
- 29/0827 . . . . . {having N(-alkenylene/-alkynylene-CO)(-alkenylene/-alkynylene-CN)}
- 29/0828 . . . . . {having (Image)}
- 29/0829 . . . . . {having N(-alkenylene/-alkynylene-CN)(-alkenylene/-alkynylene-CN)}
- 29/083 . . . . . {having -N< (in a ring)}
- 29/0832 . . . . . {having -N-alkylene-heterocyclic ring}
- 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>}
- 29/0834 . . . . {linked through -O- (for OH see [C09B 29/24](#), [C09B 29/26](#))}
- 29/0835 . . . . {linked through -S-}
- 29/0836 . . . . {linked through -N= (for heterocyclic ring, see [C09B 29/0846](#))}
- 29/0838 . . . . {specific alkyl-CO-N-, aralkyl CON-, cycloalkyl CON-, alkyl OCON-}
- 29/0839 . . . . {specific -NCO aryl, -NCO heteroaryl}
- 29/084 . . . . {specific -NSO<sub>2</sub>N, NSO<sub>2</sub>XR, -NSO<sub>2</sub>R}
- 29/0841 . . . . {specific -NCON}
- 29/0842 . . . . {linked through -C-, -CS-, (Image) ; -CN}
- 29/0844 . . . . {substituted by alkyl, e.g. CF<sub>3</sub>}
- 29/0845 . . . . {substituted by carbocyclic ring linked directly to the benzene ring}
- 29/0846 . . . . {substituted by heterocyclic ring linked directly to the benzene ring}
- 29/0847 . . . . {substituted by halogen}
- 29/0848 . . . . {substituted by NO<sub>2</sub>}
- 29/095 . . . Amino naphthalenes
- 29/0955 . . . {containing water solubilizing groups}
- 29/10 . . . from coupling components containing hydroxy as the only directing group
- 29/103 . . . {of the naphthalene series}
- 29/106 . . . {Hydroxy carboxylic acids of the naphthalene series}
- 29/12 . . . of the benzene series
- 29/14 . . . Hydroxy carboxylic acids
- 29/16 . . . Naphthol-sulfonic acids
- 29/18 . . . ortho-Hydroxy carbonamides
- 29/20 . . . of the naphthalene series
- 29/22 . . . of heterocyclic compounds
- 29/24 . . . from coupling components containing both hydroxyl and amino directing groups
- 29/26 . . . Amino phenols
- 29/28 . . . Amino naphthols
- 29/30 . . . Amino naphtholsulfonic acid
- 29/32 . . . from coupling components containing a reactive methylene group
- 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}
- 29/325 . . . {free of acid groups}
- 29/327 . . . {containing NCCH<sub>2</sub>CON-aryl, NCOCH<sub>2</sub>CON-aryl, ROC-CH<sub>2</sub>CON-aryl}
- 29/33 . . . Aceto- or benzoylacetylarylates
- 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}
- 29/332 . . . . {Carbocyclic arylides}
- 29/334 . . . . {Heterocyclic arylides, e.g. acetoacetylaminobenzimidazolone}
- 29/335 . . . {free of acid groups}
- 29/337 . . . . {Carbocyclic arylides}
- 29/338 . . . . {Heterocyclic arylides, e.g. acetoacetylaminobenzimidazolone}
- 29/34 . . . from other coupling components
- 29/36 . . . from heterocyclic compounds
- 29/3604 . . . {containing only a nitrogen as heteroatom}
- 29/3608 . . . . {containing a five-membered heterocyclic ring with only one nitrogen as heteroatom}
- 29/3613 . . . . {from an indole}
- 29/3617 . . . . {containing a six-membered heterocyclic ring with only one nitrogen as heteroatom}
- 29/3621 . . . . {from a pyridine ring}
- 29/3626 . . . . {from a pyridine ring containing one or more hydroxyl groups (or = O)}
- 29/363 . . . . . {from diazotized amino carbocyclic rings}
- 29/3634 . . . . . {from diazotized heterocyclic rings}
- 29/3639 . . . . . {from a pyridine ring containing one or more amino groups}
- 29/3643 . . . . {from quinolines or hydrogenated quinolines}
- 29/3647 . . . . {containing a five-membered ring with two nitrogen atoms as heteroatoms}
- 29/3652 . . . . {containing a 1,2-diazoles or hydrogenated 1,2-diazoles}
- 29/3656 . . . . . {containing amino-1,2-diazoles}

29/366	. . . . . {containing hydroxy-1,2-diazoles, e.g. pyrazolone}	31/153	. . . . . containing a six-membered ring with one nitrogen atom as the only ring hetero-atom
29/3665	. . . . . {containing a six-membered heterocyclic ring with two nitrogen atoms}	31/157	. . . . . Quinolines or hydrogenated quinolines
29/3669	. . . . . {from a pyrimidine ring}	31/16	. Trisazo dyes
29/3673	. . . . . {Barbituric acid and derivatives thereof}	31/18	. . from a coupling component "D" containing a directive amine group
29/3678	. . . {containing only oxygen as heteroatom}	31/20	. . from a coupling component "D" containing a directive hydroxyl group
29/3682	. . . {containing only sulfur as heteroatom}	31/22	. . from a coupling component "D" containing directive hydroxyl and amino groups
29/3686	. . . {containing nitrogen and oxygen as heteroatom}	31/24	. . from a coupling component "D" containing reactive methylene groups
29/3691	. . . {containing nitrogen and sulfur as heteroatom}	31/26	. . from other coupling components "D"
29/3695	. . . {containing other heterocyclic compounds}	31/28	. . . Heterocyclic compounds
<b>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>	31/30	. Other polyazo dyes
31/02	. Disazo dyes	<b>33/00</b>	<b>Disazo and polyazo dyes of the types A-&gt;K&lt;-B, A-&gt;B-&gt;K&lt;-C, or the like, prepared by diazotising and coupling</b>
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}	33/02	. Disazo dyes
31/04	. . from a coupling component "C" containing a directive amino group	33/04	. . in which the coupling component is a dihydroxy or polyhydroxy compound
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}	33/044	. . . the coupling component being a bis-phenol
31/043	. . . Amino-benzenes	33/048	. . . the coupling component being a bis-naphthol
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	33/052	. . . the coupling component being a bis-(naphthol-amine)
31/053	. . . Amino naphthalenes	33/056	. . . the coupling component being a bis-(naphthol-urea)
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	33/06	. . in which the coupling component is a diamine or polyamine
31/06	. . from a coupling component "C" containing a directive hydroxyl group	33/08	. . in which the coupling component is a hydroxy-amino compound
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}	33/10	. . . in which the coupling component is an amino naphthol
31/062	. . . Phenols	33/12	. . in which the coupling component is a heterocyclic compound
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	33/147	. . in which the coupling component is a bis -(o-hydroxy-carboxylic- acid amide)
31/068	. . . Naphthols	33/153	. . in which the coupling component is a bis-(aceto-acetyl amide) or a bis-(benzoyl-acetyl amide)
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	33/16	. . from other coupling components
31/075	. . . ortho-Hydroxy carboxylic acid amides	33/18	. Trisazo or higher polyazo dyes
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	33/22	. . Trisazo dyes of the type A->B->K<-C
31/08	. . from a coupling component "C" containing directive hydroxyl and amino groups	33/24	. . Trisazo dyes of the type
31/10	. . from a coupling component "C" containing reactive methylene groups		$\begin{array}{c} B \\ \swarrow \searrow \\ A \rightarrow K \leftarrow C \end{array}$
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}	33/26	. . Tetrazo dyes of the type A->B->C->K<-D
31/11	. . . Aceto- or benzoyl-acetylarylates	33/28	. . Tetrazo dyes of the type A->B->K<-C<-D
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}	33/30	. . Tetrazo dyes of the type
31/12	. . from other coupling components "C"		$\begin{array}{c} B \\ \swarrow \searrow \\ A \rightarrow K \leftarrow C \leftarrow D \end{array}$
31/14	. . . Heterocyclic components	33/32	. . Tetrazo dyes of the type
31/143	. . . . 1,2-Diazoles		$\begin{array}{c} B \\ \swarrow \searrow \\ A \rightarrow K \leftarrow C \rightarrow D \end{array}$
31/147	. . . . . Pyrazoles	<b>35/00</b>	<b>Disazo and polyazo dyes of the type A&lt;-D-&gt;B prepared by diazotising and coupling</b>
31/15	. . . . . Indoles	35/02	. Disazo dyes
		35/021	. . characterised by two coupling components of the same type
		35/023	. . . in which the coupling component is a hydroxy or polyhydroxy compound

- 35/025 . . . in which the coupling component is an amine or polyamine
- 35/027 . . . in which the coupling component is a hydroxy-amino compound
- 35/029 . . . . Amino naphthol
- 35/03 . . . in which the coupling component is a heterocyclic compound
- 35/031 . . . . containing a six membered ring with one nitrogen atom as the only ring hetero atom
- 35/033 . . . in which the coupling component is an arylamide of an o-hydroxy-carboxylic acid or of a beta-keto-carboxylic acid
- 35/035 . . . in which the coupling component containing an activated methylene group
- 35/037 . . characterised by two coupling components of different types
- 35/039 . . characterised by the tetrazo component
- 35/04 . . . the tetrazo component being a benzene derivative
- 35/06 . . . the tetrazo component being a naphthalene derivative
- 35/08 . . . the tetrazo component being a derivative of biphenyl
- 35/10 . . . . from two coupling components of the same type
- 35/105 . . . . {from two coupling components with reactive methylene groups}
- 35/12 . . . . . from amines
- 35/14 . . . . . from hydroxy compounds
- 35/16 . . . . . from hydroxy-amines
- 35/18 . . . . . from heterocyclic compounds
- 35/185 . . . . . {from pyridine or pyridone components}
- 35/20 . . . . from two coupling compounds of different types
- 35/205 . . . the tetrazo component being a derivative of a diaryl- or triaryl- alkane or-alkene
- 35/21 . . . . of diarylmethane or triarylmethane
- 35/215 . . . . of diarylethane or diarylethene {(other stilbene-azo dyes, C09B 56/04, C09B 56/06)}
- 35/22 . . . the tetrazo component being a derivative of a diaryl ether
- 35/227 . . . the tetrazo component being a derivative of a diaryl sulfide or a diaryl polysulfide
- 35/233 . . . the tetrazo component being a derivative of a diaryl ketone or benzil
- 35/24 . . . the tetrazo component being a derivative of a diaryl amine
- 35/26 . . . the tetrazo component being a derivative of a diaryl urea
- 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—
- 35/30 . . . . from two identical coupling components
- 35/32 . . . . from two different coupling components
- 35/34 . . . the tetrazo component being heterocyclic
- 35/35 . Trisazo dyes in which the tetrazo component is a diamino-azo-aryl compound
- 35/36 . Trisazo dyes of the type 
- 35/362 . . D is benzene
- 35/364 . . D is naphthalene
- 35/366 . . D is diphenyl
- 35/368 . . D is diarylether, a diarylsulfide or a diarylpolysulfide
- 35/37 . . D is diarylamine
- 35/372 . . D is diarylurea
- 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—
- 35/376 . . D is a heterocyclic compound
- 35/378 . Trisazo dyes of the type 
- 35/38 . Trisazo dyes of the type 
- 35/40 . . the component K being a dihydroxy or polyhydroxy compound
- 35/42 . . the component K being a diamine or polyamine
- 35/44 . . the component K being a hydroxy amine
- 35/46 . . . the component K being an amino naphthol
- 35/461 . . . . {D being derived from diaminobenzene}
- 35/462 . . . . {D being derived from diaminonaphthalene}
- 35/463 . . . . {D being derived from diaminodiphenyl}
- 35/464 . . . . {D being derived from diaminodiaryl(thio)ether}
- 35/465 . . . . {D being derived from diaminodiarylamine}
- 35/466 . . . . {D being derived from diaminodiarylurea}
- 35/467 . . . . {D being derived from diaminodiaryl linked through CON<, SO<sub>2</sub>N<, CSN<}
- 35/468 . . . . {D being derived from diaminodiarylketone}
- 35/469 . . . . {D being derived from heterocyclic diamine}
- 35/48 . . the component K being heterocyclic
- 35/50 . Tetrazo dyes
- 35/52 . . of the type 
- 35/54 . . of the type 
- 35/56 . . of the type 
- 35/58 . . of the type 
- 35/60 . . of the type 
- 35/62 . . of the type 



- 35/64 . Higher polyazo dyes, e.g. of the types



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

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

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

- 41/001 . {characterised by the coupling medium}  
 41/002 . . {containing a solvent}  
 41/003 . . {containing a polymer (surface-active polyethylene glycols, C09B 41/005)}  
 41/004 . . {containing a reaction assistant, e.g. urea}  
 41/005 . . {containing low molecular weight dispersing agents; containing surface active polyethylene glycols}  
 41/006 . {characterised by process features}  
 41/007 . . {including condition or time responsive control, e.g. automatically controlled processes; Stepwise coupling}  
 41/008 . . {using mechanical or physical means, e.g. using ultra-sound, milling during coupling or microreactors}  
 41/009 . . {Diazotising and coupling in one step}

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

- 43/003 . {Cyclisation of azo dyes; Condensation of azo dyes with formation of ring, e.g. of azopyrazolone dyes}  
 43/006 . {by introduction of hydrocarbon radicals on C-atom of azo dye}  
 43/02 . by sulfonation  
 43/04 . by nitration  
 43/06 . by oxidation  
 43/08 . by reduction  
 43/085 . . {by reacting nitro azo dyes with amine or amino azo dye with nitro compounds}  
 43/10 . . with formation of a new azo or an azoxy bridge  
 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)  
 43/12 . by acylation of amino groups  
 43/124 . . with monocarboxylic acids, carbamic esters or halides, mono- isocyanates, or haloformic acid esters  
 43/1242 . . . {with heterocyclic monocarboxylic acids}  
 43/1245 . . . {with formation of NHCOOR, NHCOSR or NHCSOR groups by acylation}  
 43/1247 . . . {with formation of NHSO<sub>2</sub>R or NHSO<sub>3</sub>H radicals}  
 43/128 . . . Aliphatic, cycloaliphatic or araliphatic acids  
 43/132 . . . having the carboxylic group directly attached to an aromatic carbocyclic ring  
 43/136 . . with polyfunctional acylating agents  
 43/14 . . . with phosgene or thiophosgene  
 43/145 . . . with polycarboxylic acids

- 43/15 . . . . with formation of cyclic imides of ortho- or peri- dicarboxylic acids  
 43/155 . . . with di- or poly-isocyanates  
 43/16 . . . linking amino-azo or cyanuric acid residues  
 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)}  
 43/20 . . with monocarboxylic acids, carbamic acid esters or halides, mono- isocyanates or haloformic acid esters  
 43/202 . . . {Aliphatic, cycloaliphatic, araliphatic carboxylic acids}  
 43/204 . . . {Heterocyclic monocarboxylic acids}  
 43/206 . . . {with formation of OCXN or OSO<sub>2</sub>N group}  
 43/208 . . . {with formation of OCXXH or OCXXR and R being hydrocarbon}  
 43/22 . . . having the carboxylic group directly attached to an aromatic carbocyclic ring  
 43/24 . . with formation of —O—SO<sub>2</sub>—R or —O—SO<sub>3</sub>H radicals  
 43/26 . . with polyfunctional acylating agents  
 43/263 . . . {Polycarboxylic acids}  
 43/266 . . . {Di- or polyisocyanates}  
 43/28 . by etherification of hydroxyl groups  
 43/30 . by esterification of —COOH or —SO<sub>3</sub>H groups  
 43/32 . by reacting carboxylic or sulfonic groups, or derivatives thereof, with amines; by reacting keto-groups with amines  
 43/325 . . {by reacting sulfonic acids with amines}  
 43/34 . . by reacting ortho- or peri-dicarboxylic dyes  
 43/36 . . with amino-anthracene or amino-anthraquinone dyes  
 43/38 . . by reacting two or more ortho-hydroxy naphthoic acid dyes with polyamines  
 43/40 . by substituting hetero atoms by radicals containing other hetero atoms  
 43/405 . . {by substituting radicals containing hetero atoms for —SO<sub>2</sub>R radicals and R being hydrocarbon}  
 43/42 . . by substituting radicals containing hetero atoms for —CN radicals  
 43/44 . by substituting amine groups for hydroxyl groups or hydroxyl groups for amine groups; Desacylation of amino-acyl groups; Deaminating

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

- 44/005 . {Special process features in the quaternization reaction}  
 44/02 . containing ammonium groups not directly attached to an azo group  
 44/04 . . from coupling components containing amino as the only directing group  
 44/06 . . from coupling components containing hydroxyl as the only directing group  
 44/08 . . from coupling components containing heterocyclic rings  
 44/10 . containing cyclammonium groups attached to an azo group by a carbon atom of the ring system  
 44/101 . . {characterised by the coupling component having an amino directing group}  
 44/102 . . {characterised by the coupling component having a reactive methylene group}  
 44/103 . . {characterised by the coupling component being a heterocyclic compound}  
 44/105 . . . {derived from pyridine, pyridone}

- 44/106 . . . {derived from pyrazoles, pyrazolones}
- 44/107 . . {characterised by a cyclammonium five-membered specific ring not mentioned hereafter: thiadiazolium, (benz)oxazolium}
- 44/108 . . {characterised by a cyclammonium six-membered specific ring not mentioned hereafter, e.g. pyrimidinium, perimidinium, pyridazonium, oxazinium}
- 44/12 . . having one nitrogen atom as the only ring hetero atom
- 44/123 . . . {in a five-membered ring, e.g. pyrrolium, indolium}
- 44/126 . . . {in a six-membered ring, e.g. pyrridinium, quinolinium}
- 44/14 . . 1, 2-Diazoles or hydrogenated 1,2-diazoles {Pyrazolium; Indazolium}
- 44/16 . . 1, 3-Diazoles or hydrogenated 1,3-diazoles {(Benz)imidazolium}
- 44/18 . . having three nitrogen atoms as the only ring hetero atoms
- 44/20 . . Thiazoles or hydrogenated thiazoles
- 45/00 Complex metal compounds of azo dyes**
- 45/01 . characterised by the method of metallisation
- 45/02 . Preparation from dyes containing in o'-position a hydroxy group and in o'-position hydroxy, alkoxy, carboxyl, amino or keto groups
- 45/025 . . {of azo-pyridone series}
- 45/04 . . Azo compounds in general
- 45/06 . . . Chromium compounds
- 45/08 . . . Copper compounds
- 45/10 . . . Cobalt compounds
- 45/12 . . . other metal compounds
- 45/14 . . Monoazo compounds
- 45/16 . . . containing chromium
- 45/18 . . . containing copper
- 45/20 . . . containing cobalt
- 45/22 . . . containing other metals
- 45/24 . . Disazo or polyazo compounds
- 45/26 . . . containing chromium
- 45/28 . . . containing copper
- 45/30 . . . containing cobalt
- 45/32 . . . containing other metals
- 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
- 45/36 . . by oxidation of hydrogen in o'-position
- 45/38 . Preparation from compounds with —OH and —COOH adjacent in the same ring or in peri position
- 45/40 . . Chromium compounds
- 45/42 . . Copper compounds
- 45/44 . . Cobalt compounds
- 45/46 . . Other metal compounds
- 45/48 . Preparation from other complex metal compounds of azo dyes
- 45/482 . . {Chromium complexes}
- 45/485 . . {Copper complexes}
- 45/487 . . {Cobalt complexes}
- 47/00 Porphines; Azaporphines {(non-dyeing compounds C07D 487/22)}**
- 47/04 . Phthalocyanines {abbreviation: Pc}
- 47/045 . . {Special non-pigmentary uses, e.g. catalyst, photosensitisers of phthalocyanine dyes or pigments}
- 47/06 . . Preparation from carboxylic acids or derivatives thereof {, e.g. anhydrides, amides, mononitriles, phthalimide, o-cyanobenzamide}
- 47/061 . . . {having halogen atoms linked directly to the Pc skeleton}
- 47/062 . . . {having alkyl radicals linked directly to the Pc skeleton; having carboxylic groups directly linked to the skeleton, e.g. phenyl}
- 47/063 . . . {having oxygen or sulfur atom(s) linked directly to the skeleton}
- 47/064 . . . {having nitrogen atom(s) directly linked to the skeleton}
- 47/065 . . . {having —COOH or —SO<sub>3</sub>H radicals or derivatives thereof, directly linked to the skeleton}
- 47/067 . . . from phthalodinitriles {naphthalenedinitriles, aromatic dinitriles prepared in situ, hydrogenated phthalodinitrile}
- 47/0671 . . . . {having halogen atoms linked directly to the Pc skeleton}
- 47/0673 . . . . {having alkyl radicals linked directly to the Pc skeleton; having carbocyclic groups linked directly to the skeleton}
- 47/0675 . . . . {having oxygen or sulfur linked directly to the skeleton}
- 47/0676 . . . . {having nitrogen atom(s) linked directly to the skeleton}
- 47/0678 . . . . {having —COOH or —SO<sub>3</sub>H radicals or derivatives thereof directly linked to the skeleton}
- 47/073 . . . Preparation from isoindolenines {, e.g. pyrrolenines}
- 47/08 . . Preparation from other phthalocyanine compounds {, e.g. cobaltphthalocyanineamine complex}
- 47/085 . . . {substituting the central metal atom}
- 47/10 . . . Obtaining compounds having halogen atoms directly bound to the phthalocyanine skeleton
- 47/12 . . . Obtaining compounds having alkyl radicals, or alkyl radicals substituted by hetero atoms, bound to the phthalocyanine skeleton
- 47/14 . . . . having alkyl radicals substituted by halogen atoms
- 47/16 . . . . having alkyl radicals substituted by nitrogen atoms
- 47/18 . . . Obtaining compounds having oxygen atoms directly bound to the phthalocyanine skeleton
- 47/20 . . . Obtaining compounds having sulfur atoms directly bound to the phthalocyanine skeleton
- 47/22 . . . Obtaining compounds having nitrogen atoms directly bound to the phthalocyanine skeleton
- 47/24 . . . Obtaining compounds having —COOH or —SO<sub>3</sub>H radicals, or derivatives thereof, directly bound to the phthalocyanine radical
- 47/26 . . . . Amide radicals
- 47/28 . . Phthalocyanine dyes containing —S—SO<sub>3</sub>H radicals
- 47/30 . . Metal-free phthalocyanines
- 47/305 . . . {prepared by demetallizing metal Pc compounds}

- 47/32 . . Cationic phthalocyanine dyes
- 48/00 Quinacridones**
- 49/00 Sulfur dyes**
- 49/02 . from nitro compounds of the benzene, naphthalene or anthracene series
- 49/04 . from amino compounds of the benzene, naphthalene or anthracene series
- 49/06 . from azines, oxazines, thiazines or thiazoles
- 49/08 . from urea derivatives
- 49/10 . from diphenylamines, indamines, or indophenols {, e.g. p-aminophenols or leucoindophenols}
- 49/12 . from other compounds {, e.g. other heterocyclic compounds}
- 49/122 . . {from phthalocyanine compounds}
- 49/124 . . {from polycarbocyclic compounds}
- 49/126 . . {from triarylmethane compounds}
- 49/128 . . {from hydroxy compounds of the benzene or naphthalene series}
- 50/00 Formazane dyes; Tetrazolium dyes**
- 50/02 . Tetrazolium dyes
- 50/04 . Metal-free formazan dyes
- 50/06 . Bis-formazan dyes
- 50/08 . Meso-acyl formazan dyes
- 50/10 . Cationic formazan dyes
- 51/00 Nitro or nitroso dyes**
- 51/005 . {Nitroso dyes}
- 53/00 Quinone imides**
- 53/02 . Indamines; Indophenols
- 55/00 Azomethine dyes**
- 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](#))}
- 55/002 . {Monoazomethine dyes}
- 55/003 . . {with the -C=N- group attached to an heteroring}
- 55/004 . . . {with the -C=N- group between two heterorings}
- 55/005 . {Disazomethine dyes}
- 55/006 . . {containing at least one heteroring}
- 55/007 . . {containing only carbocyclic rings}
- 55/008 . {Tri or polyazomethine dyes}
- 55/009 . {Azomethine dyes, the C-atom of the group -C=N- being part of a ring (Image)}
- 56/00 Azo dyes containing other chromophoric systems**
- 56/005 . {Azo-nitro dyes}
- 56/02 . Azomethine-azo dyes {(1,2-Complex dyes of AZOMETHINE and AZO dyes, [C09B 55/001](#))}
- 56/04 . Stilbene-azo dyes {(disazo dyes from diaminostilbene, [C09B 35/215](#))}
- 56/06 . . Bis- or polystilbene azo dyes
- 56/08 . Styryl-azo dyes
- 56/10 . Formazane-azo dyes
- 56/12 . Anthraquinone-azo dyes {(from diazotised aminoanthracene [C09B 29/0022](#), azo dyes containing hydroxyl groups acylated with polyfunctional anthraquinone derivatives [C09B 43/26](#))}
- 56/14 . Phthalocyanine-azo dyes
- 56/16 . Methine- or polymethine-azo dyes
- 56/18 . Hydrazone-azo dyes
- 56/20 . Triazene-azo dyes
- 57/00 Other synthetic dyes of known constitution**
- 57/001 . {Pyrene dyes}
- 57/002 . {Aminoketone dyes, e.g. arylaminoketone dyes ([C09B 13/00](#) takes precedence)}
- 57/004 . {Diketopyrrolopyrrole dyes}
- 57/005 . {Pyrocolline; Phthalcoylpyrrocolline dyes}
- 57/007 . {Squaraine dyes}
- 57/008 . {Triarylamine dyes containing no other chromophores}
- 57/02 . Coumarine dyes
- 57/04 . Isoindoline dyes
- 57/06 . Naphtholactam dyes
- 57/08 . Naphthalimide dyes; Phthalimide dyes
- 57/10 . Metal complexes of organic compounds not being dyes in uncomplexed form
- 57/12 . Perinones, i.e. naphthoylene-aryl-imidazoles
- 57/14 . Benzoxanthene dyes; Benzothioxanthene dyes
- 59/00 Artificial dyes of unknown constitution**
- 61/00 Dyes of natural origin prepared from natural sources {, e.g. vegetable sources}**
- 62/00 Reactive dyes, i.e. dyes which form covalent bonds with the substrates or which polymerise with themselves**
- 62/002 . with the linkage of the reactive group being alternatively specified {not used}
- 62/0025 . . {Specific dyes not provided for in groups [C09B 62/004](#) - [C09B 62/018](#)}
- 62/004 . . Anthracene dyes {([C09B 62/0068](#) takes precedence)}
- 62/006 . . Azodyes
- 62/0061 . . . {with coupling components containing an amino directing group}
- 62/0062 . . . {with coupling components containing a hydroxyl directing group}
- 62/0064 . . . {with coupling components containing both hydroxyl and amino groups as directing groups}
- 62/0065 . . . {with coupling components containing a reactive methylene group}
- 62/0067 . . . {with heterocyclic compound as coupling component}
- 62/0068 . . . {dyes containing in the molecule at least one azo group and at least one other chromophore group}
- 62/008 . . . Monoazo dyes
- 62/0081 . . . . {with coupling components containing an amino directing group}
- 62/0083 . . . . {with coupling components containing a hydroxyl directing group}
- 62/0085 . . . . {with coupling components containing both hydroxyl and amino groups as directing groups}
- 62/0086 . . . . {with coupling component containing a reactive methylene group}
- 62/0088 . . . . {with heterocyclic compound as coupling component}
- 62/01 . . . Disazo or polyazo dyes
- 62/012 . . . Metal complex azo dyes
- 62/014 . . Nitro dyes

- 62/016 . . . Porphines; Azaporphines
- 62/018 . . . Formazane dyes
- 62/02 . . . with the reactive group directly attached to a heterocyclic ring
- 62/021 . . . {Specific dyes not provided for in groups [C09B 62/024](#) - [C09B 62/038](#)}
- 62/022 . . . the heterocyclic ring being alternatively specified {not used}
- 62/024 . . . Anthracene dyes
- 62/026 . . . Azo dyes
- 62/0265 . . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
- 62/028 . . . . Monoazo dyes
- 62/03 . . . . Disazo or polyazo dyes
- 62/032 . . . . Metal complex azo dyes
- 62/034 . . . Nitro dyes
- 62/036 . . . Porphines; Azaporphines
- 62/038 . . . Formazane dyes
- 62/04 . . . to a triazine ring
- 62/043 . . . {containing two or more triazine rings linked together by a non-chromophoric link}
- 62/046 . . . {Specific dyes not provided for in group [C09B 62/06](#) - [C09B 62/10](#)}
- 62/06 . . . Anthracene dyes
- 62/08 . . . Azo dyes
- 62/082 . . . . {dyes containing in the molecule at least one azo group and at least one other chromophore group}
- 62/085 . . . . Monoazo dyes
- 62/09 . . . . Disazo or polyazo dyes
- 62/095 . . . . Metal complex azo dyes
- 62/10 . . . Porphines; Azaporphines
- 62/12 . . . to a pyridazine ring
- 62/125 . . . {Specific dyes non provided for in groups [C09B 62/14](#) - [C09B 62/18](#)}
- 62/14 . . . Anthracene dyes {(C09B 62/162 takes precedence)}
- 62/16 . . . Azo dyes
- 62/162 . . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
- 62/165 . . . . Monoazo dyes
- 62/17 . . . . Disazo or polyazo dyes
- 62/175 . . . . Metal complex azo dyes
- 62/18 . . . Porphyrins; Prophyrins {(C09B 62/162 takes precedence)}
- 62/20 . . . to a pyrimidine ring
- 62/205 . . . {Specific dyes not provided for in groups [C09B 62/22](#) - [C09B 62/26](#)}
- 62/22 . . . Anthracene dyes {(C09B 62/242 takes precedence)}
- 62/24 . . . Azo dyes
- 62/242 . . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
- 62/245 . . . . Monoazo dyes
- 62/25 . . . . Disazo or polyazo dyes
- 62/255 . . . . Metal complex azo dyes
- 62/26 . . . Porphyrins; Porphyrazins {(C09B 62/242 takes precedence)}
- 62/28 . . . to a pyrazine ring
- 62/285 . . . . {Specific dyes not provided for in groups [C09B 62/30](#) - [C09B 62/34](#)}
- 62/30 . . . Anthracene dyes {(C09B 62/322 takes precedence)}
- 62/32 . . . Azo dyes
- 62/322 . . . . {Dyes containing in the molecule at least one azo group and at least one other chromophore group}
- 62/325 . . . . Monoazo dyes
- 62/33 . . . . Disazo or polyazo dyes
- 62/335 . . . . Metal complex azo dyes
- 62/34 . . . Porphyrins; Porphyrazins {(C09B 62/322 takes precedence)}
- 62/343 . . . to a five membered ring
- 62/3435 . . . {Specific dyes not provided for in groups [C09B 62/345](#) - [C09B 62/357](#)}
- 62/345 . . . Anthracene dyes
- 62/347 . . . Azo dyes
- 62/35 . . . . Monoazo dyes
- 62/353 . . . . Disazo or polyazo dyes
- 62/355 . . . . Metal complex azo dyes
- 62/357 . . . Porphines; Azaporphines
- 62/36 . . . to some other heterocyclic ring
- 62/365 . . . {Specific dyes not provided for in groups [C09B 62/38](#) - [C09B 62/42](#)}
- 62/38 . . . Anthracene dyes
- 62/40 . . . Azo dyes
- 62/405 . . . . Monoazo dyes
- 62/41 . . . . Disazo or polyazo dyes
- 62/415 . . . . Metal complex azo dyes
- 62/42 . . . Porphines; Azaporphines
- 62/44 . . . with the reactive group not directly attached to a heterocyclic ring
- 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}
- 62/4403 . . . {the heterocyclic system being a triazine ring}
- 62/4405 . . . . {Dioxazine dyes}
- 62/4407 . . . . {Formazane dyes}
- 62/4409 . . . . {Anthracene dyes}
- 62/4411 . . . . {Azo dyes}
- 62/4413 . . . . {Non-metallized monoazo dyes}
- 62/4415 . . . . {Disazo or polyazo dyes}
- 62/4416 . . . . {Metal complex azo dyes}
- 62/4418 . . . . {Porphines; Azoporphines}
- 62/442 . . . {the heterocyclic system being a pyridazine ring}
- 62/4422 . . . {the heterocyclic system being a pyrimidine ring}
- 62/4424 . . . {Azo dyes}
- 62/4426 . . . {the heterocyclic system being a pyrazine}
- 62/4428 . . . {the heterocyclic system being a five membered ring}
- 62/443 . . . the reactive group being alternatively specified
- 62/445 . . . Anthracene dyes
- 62/447 . . . Azo dyes
- 62/45 . . . . Monoazo dyes
- 62/453 . . . . Disazo or polyazo dyes
- 62/455 . . . . Metal complex azo dyes
- 62/457 . . . Porphines; Azaporphines
- 62/463 . . . Formazane dyes



- 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
- 62/467 . . . Anthracene dyes
- 62/47 . . . Azo dyes
- 62/473 . . . . Monoazo dyes
- 62/475 . . . . Disazo or polyazo dyes
- 62/477 . . . . Metal complex azo dyes
- 62/483 . . . Porphines; Azaporphines
- 62/485 . . the reactive group being a halo-cyclobutyl-carbonyl, halo-cyclobutyl-vinyl-carbonyl, or halo-cyclobutenyl-carbonyl group
- 62/487 . . . Anthracene dyes
- 62/489 . . . Azo dyes
- 62/491 . . . . Monoazo dyes
- 62/493 . . . . Disazo or polyazo dyes
- 62/495 . . . . Metal complex azo dyes
- 62/497 . . . Porphines; Azaporphines
- 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
- 62/5033 . . . {Dioxazine dyes}
- 62/5036 . . . {Formazane dyes}
- 62/505 . . . Anthracene dyes {(C09B 62/5033, C09B 62/5036 take precedence)}
- 62/507 . . . Azo dyes {(C09B 62/5033, C09B 62/5036 take precedence)}
- 62/51 . . . . Monoazo dyes
- 62/513 . . . . Disazo or polyazo dyes
- 62/515 . . . . Metal complex azo dyes
- 62/517 . . . Porphines; Azaporphines {(C09B 62/5033, C09B 62/5036 take precedence)}
- 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
- 62/525 . . . Anthracene dyes
- 62/527 . . . Azo dyes
- 62/53 . . . . Monoazo dyes
- 62/533 . . . . Disazo or polyazo dyes
- 62/535 . . . . Metal complex azo dyes
- 62/537 . . . Porphines; Azaporphines
- 62/54 . . the reactive group being an epoxy or halohydrin group
- 62/56 . . . Anthracene dyes
- 62/58 . . . Azo dyes
- 62/585 . . . . Monoazo dyes
- 62/59 . . . . Disazo or polyazo dyes
- 62/595 . . . . Metal complex azo dyes
- 62/60 . . . Porphines; Azaporphines

- 62/62 . . the reactive group being an ethylenimino or N—acylated ethylenimino group or a  $-CO-NH-CH_2-CH_2-X$  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
- 62/64 . . . Anthracene dyes
- 62/66 . . . Azo dyes
- 62/665 . . . . Monoazo dyes
- 62/67 . . . . Disazo or polyazo dyes
- 62/675 . . . . Metal complex azo dyes
- 62/68 . . . Porphines; Azaporphines
- 62/763 . . the reactive group being a N-methylol group or an O-derivative thereof
- 62/765 . . . Anthracene dyes
- 62/767 . . . Azo dyes
- 62/77 . . . . Monoazo dyes
- 62/773 . . . . Disazo or polyazo dyes
- 62/775 . . . . Metal complex azo dyes
- 62/777 . . . Porphines; Azaporphines
- 62/78 . . with other reactive groups
- 62/80 . . . Anthracene dyes
- 62/82 . . . Azo dyes
- 62/825 . . . . Monoazo dyes
- 62/83 . . . . Disazo or polyazo dyes
- 62/835 . . . . Metal complex azo dyes
- 62/84 . . . Porphines; Azaporphines

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

- 63/00 Lakes**
- 63/005 . {Metal lakes of dyes (complex metal compounds of azo dyes C09B 45/00, metal complexes of colourless compounds C09B 57/10)}
- 65/00 Compositions containing mordants**
- 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**
- 67/0001 . {Post-treatment of organic pigments or dyes}
- 67/0002 . . {Grinding; Milling with solid grinding or milling assistants}
- 67/0003 . . {Drying, e.g. sprax drying; Sublimation of the solvent}
- 67/0004 . . {Coated particulate pigments or dyes}
- 67/0005 . . . {the pigments being nanoparticles}
- 67/0007 . . . {with inorganic coatings}
- 67/0008 . . . {with organic coatings}
- 67/0009 . . . . {containing organic acid derivatives}
- 67/001 . . . . . {containing resinic acid derivatives}
- 67/0011 . . . . . {containing amine derivatives, e.g. polyamines}
- 67/0013 . . . . . {with polymeric coatings}
- 67/0014 . . {Influencing the physical properties by treatment with a liquid, e.g. solvents}
- 67/0015 . . . {of azoic pigments}
- 67/0016 . . . {of phthalocyanines}
- 67/0017 . . {Influencing the physical properties by treatment with an acid, H<sub>2</sub>SO<sub>4</sub>}



- 67/0019 . . . {of phthalocyanines}
- 67/002 . . {Influencing the physical properties by treatment with an amine}
- 67/0021 . . {Flushing of pigments}
- 67/0022 . . {Wet grinding of pigments}
- 67/0023 . . . {of phthalocyanines}
- 67/0025 . {Crystal modifications; Special X-ray patterns}
- 67/0026 . . {of phthalocyanine pigments}
- 67/0027 . . {of quinacridones}
- 67/0028 . . {of azo compounds}
- 67/0029 . . . {of monoazo compounds}
- 67/003 . . {of diketopyrrolopyrrole}
- 67/0032 . {Treatment of phthalocyanine pigments  
([C09B 67/0016](#), [C09B 67/0019](#) take precedence)}
- 67/0033 . {Blends of pigments; Mixture crystals; Solid solutions}
- 67/0034 . . {Mixtures of two or more pigments or dyes of the same type}
- 67/0035 . . . {Mixtures of phthalocyanines}
- 67/0036 . . . {Mixtures of quinacridones}
- 67/0038 . . . {Mixtures of anthraquinones}
- 67/0039 . . . {Mixtures of diketopyrrolopyrroles}
- 67/004 . . {Mixtures of two or more reactive dyes}
- 67/0041 . . {mixtures containing one azo dye}
- 67/0042 . . . {Mixtures containing two reactive dyes one of them being an azo dye}
- 67/0044 . . . . {both having the reactive group directly attached to a heterocyclic system}
- 67/0045 . . . . {both having the reactive group not directly attached to a heterocyclic system}
- 67/0046 . . {Mixtures of two or more azo dyes}
- 67/0047 . . . {Mixtures of two or more reactive azo dyes}
- 67/0048 . . . . {all the reactive groups being directly attached to a heterocyclic system}
- 67/005 . . . . {all the reactive groups being not directly attached to a heterocyclic system}
- 67/0051 . . . {mixture of two or more monoazo dyes}
- 67/0052 . . . . {Mixtures of two or more reactive monoazo dyes}
- 67/0053 . . . . . {all the reactive groups being directly attached to a heterocyclic system}
- 67/0054 . . . . . {all the reactive groups not being directly attached to a heterocyclic system}
- 67/0055 . . . {Mixtures of two or more disazo dyes}
- 67/0057 . . . . {Mixtures of two or more reactive disazo dyes}
- 67/0058 . . . . . {all the reactive groups are directly attached to a heterocyclic system}
- 67/0059 . . . . . {all the reactive groups are not directly attached to a heterocyclic system}
- 67/006 . {Preparation of organic pigments}
- 67/0061 . . {by grinding a dyed resin}
- 67/0063 . . {of organic pigments with only macromolecular substances}
- 67/0064 . . . {of phthalocyanines with only macromolecular substances}
- 67/0065 . . {of organic pigments with only non-macromolecular compounds}
- 67/0066 . . {Aqueous dispersions of pigments containing only dispersing agents}
- 67/0067 . . . {Aqueous dispersions of phthalocyanine pigments containing only dispersing agents}
- 67/0069 . . {Non aqueous dispersions of pigments containing only a solvent and a dispersing agent}
- 67/007 . . . {Non aqueous dispersions of phthalocyanines containing only a solvent and a dispersing agent}
- 67/0071 . {Process features in the making of dyestuff preparations; Dehydrating agents; Dispersing agents; Dustfree compositions}
- 67/0072 . . {Preparations with anionic dyes or reactive dyes}
- 67/0073 . . . {Preparations of acid or reactive dyes in liquid form}
- 67/0075 . . {Preparations with cationic dyes}
- 67/0076 . . . {Preparations of cationic or basic dyes in liquid form}
- 67/0077 . . {Preparations with possibly reduced vat, sulfur or indigo dyes}
- 67/0078 . . . {Preparations of vat, sulfur or indigo dyes in liquid form}
- 67/0079 . . {Azoic dyestuff preparations}
- 67/008 . . {Preparations of disperse dyes or solvent dyes}
- 67/0082 . . . {in liquid form}
- 67/0083 . . {Solutions of dyes}
- 67/0084 . . {Dispersions of dyes}
- 67/0085 . . . {Non common dispersing agents}
- 67/0086 . . . . {anionic dispersing agents}
- 67/0088 . . . . {cationic dispersing agents}
- 67/0089 . . . . {non ionic dispersing agent, e.g. EO or PO addition products}
- 67/009 . . . . {polymeric dispersing agent}
- 67/0091 . . . {Process features in the making of dispersions, e.g. ultrasonics}
- 67/0092 . . {Dyes in solid form}
- 67/0094 . . . {Treatment of powders, e.g. antidusting}
- 67/0095 . . . {Process features in the making of granulates}
- 67/0096 . {Purification; Precipitation; Filtration}
- 67/0097 . {Dye preparations of special physical nature; Tablets, films, extrusion, microcapsules, sheets, pads, bags with dyes}
- 67/0098 . {Organic pigments exhibiting interference colours, e.g. nacrous pigments}
- 68/00 {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}**
- 68/20 . {characterised by the process features}
- 68/22 . . {Acid treatment ([for acid pasting C09B 67/0015](#))}
- 68/24 . . {Azo-coupling}
- 68/26 . . {Oxidation}
- 68/28 . . {Complexing}
- 68/40 . {characterised by the chemical nature of the attached groups}
- 68/41 . . {Polymers attached to the pigment surface  
([C09B 68/444](#), [C09B 68/446](#) take precedence)}
- 68/42 . . {Ionic groups, e.g. free acid}
- 68/423 . . . {Cationic groups}
- 68/4235 . . . . {Ammonium groups or derivatives thereof}
- 68/425 . . . {Anionic groups}
- 68/4253 . . . . {Sulfonic acid groups}
- 68/4257 . . . . {Carboxylic acid groups}
- 68/427 . . . {Ionic groups and at least one triazine ring present at the same time}
- 68/44 . . {Non-ionic groups, e.g. halogen, OH or SH}

- 68/441 . . . {Sulfonic acid derivatives, e.g. sulfonic acid amides or sulfonic acid esters}
- 68/443 . . . {Carboxylic acid derivatives, e.g. carboxylic acid amides, carboxylic acid esters or CN groups}
- 68/444 . . . {Polyether}
- 68/446 . . . {Amines or polyamines, e.g. aminopropyl, 1,3,4,-triamino-pentyl or polyethylene imine}
- 68/447 . . . {Alkyl groups}
- 68/4475 . . . . {Substituted alkyl groups}
- 68/449 . . . {Unsaturated carbohydrates groups, e.g. alkenyl or alkynyl}
- 68/4495 . . . . {Substituted unsaturated carbohydrates groups}
- 68/46 . . {Aromatic cyclic groups}
- 68/463 . . . {Substituted aromatic groups}
- 68/467 . . . {Heteroaromatic groups}
- 68/4673 . . . . {5-Membered rings}
- 68/4677 . . . . {6-Membered rings}
- 68/46775 . . . . . {Triazine ([C09B 68/427](#) takes precedence)}
- 68/48 . . {Non-aromatic cyclic groups}
- 68/485 . . . {Substituted non-aromatic cyclic groups}
- 69/00 Dyes not provided for by a single group of this subclass**
- 69/001 . {Dyes containing an onium group attached to the dye skeleton via a bridge}
- 69/002 . . {Hydrazinium group}
- 69/004 . . {Sulfonium group}
- 69/005 . . {Isothiuronium group}
- 69/007 . {Dyestuffs containing phosphonic or phosphinic acid groups and derivatives}
- 69/008 . {Dyes containing a substituent, which contains a silicon atom}
- 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)
- 69/04 . . of anionic dyes with nitrogen containing compounds
- 69/045 . . . {of anionic azo dyes}
- 69/06 . . of cationic dyes with organic acids {or with inorganic complex acids}
- 69/065 . . . {of cationic azo dyes}
- 69/08 . Dyes containing a splittable water solubilising 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](#) - [C09B 44/08](#); [C09B 69/001](#) - [C09B 69/005](#))}
- 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](#))}
- 69/101 . . {containing an anthracene dye}
- 69/102 . . . {containing a perylene dye}
- 69/103 . . {containing a diaryl- or triarylmethane dye}
- 69/104 . . {containing an indole dye, including melanine derivatives}
- 69/105 . . {containing a methine or polymethine dye}
- 69/106 . . {containing an azo dye}
- 69/107 . . {containing an azomethine dye}
- 69/108 . . {containing a phthalocyanine dye}
- 69/109 . . {containing other specific dyes}