

PATENT SPECIFICATION

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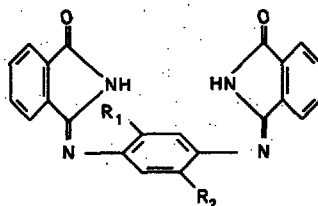


(54) IMINO-ISOINDOLINONES

(71) We, SANDOZ LTD., of 35 Lichtstrasse, 4002 Basle, Switzerland, a Swiss Body Corporate, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

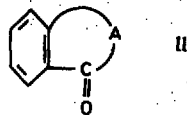
The invention concerns imino-isoindolinone compounds having low solubility in water.

The invention provides compounds of formula I,

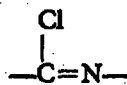


in which R₁ and R₂, which may be the same or different, each signifies a fluorine atom, a chlorine atom, a bromine atom, a methyl radical, a methoxy radical or an ethoxy radical.

The invention provides a process for the production of compounds of formula I, stated above, characterised by condensing a compound of formula II,



in which A signifies a structure (a)



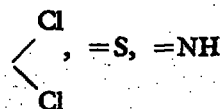
(a)

or a structure (b),



(b)

in which X signifies

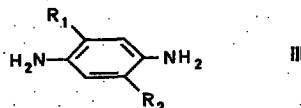


or



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in which R signifies an alkyl radical, with a compound of formula III,



in which R₁ and R₂ are as defined above, or with a neutral salt of the compound of formula III.

The condensation is advantageously carried out in a polar organic solvent, for example in an alcohol, alcohol ether, N-dialkylamide or dimethyl sulphoxide. The reaction may conveniently be carried out at a temperature of up to 200° C, preferably from 70° to 140° C. The reaction runs very smoothly when a neutral salt, for example formed from a strong acid, such as the hydrochloride or sulphate salt of the compound of formula III, is employed. Where the free diamine of formula III is condensed with a compound of formula II, in which A signifies structure (b) and X is =NH, it is advisable to carry out the condensation in the presence of an acid, such as glacial acetic acid, which binds the ammonia liberated in the reaction. Since the condensation involves two mols of the compound of formula II to one mol of the compound of formula III, it is preferred to employ the compounds in such a mol ratio. The preferred compound of formula II is the one in which A signifies structure (b) and X signifies =NH. Where, in the compounds of formula II, A signifies structure (b) and X signifies

OR

OR

R preferably signifies an alkyl radical of 1 to 6, more preferably 1 to 4, carbon atoms.

The resulting compound of formula I may be isolated in conventional manner.

The compound of formula II, in which A signifies structure (a) is conveniently obtained by cleavage of hydrogen chloride, in conventional manner, from the compound of formula II in which A signifies structure (b) and X signifies



The preferred compounds of formula I are those in which R₁ and R₂, independently, each signify a chlorine or bromine atom.

The compounds of formula I are pigments. They are particularly suitable for pigmentation of synthetic polymeric materials in the mass, in the presence or absence of solvents, particularly after having been conditioned in the normal methods for pigments. By synthetic polymeric material is to be understood synthetic polymers and resins such as polyethylene, polystyrene, polyvinyl chloride, synthetic rubber latices and peromerics (synthetic leathers). The compounds are also suitable for use in emulsion paints and other surface coatings in an oil, water or solvent base, in printing inks and in viscose and cellulose acetate spinning solutions for the production of spun-dyed filaments. The compounds can also be used for dyeing paper in the stock prior to sheet formation and for printing and coating textiles. In the above uses, the compounds of formula I are used in conventional manner.

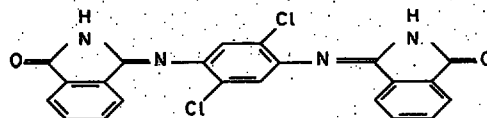
In the above substrates the compounds of formula I are notable for good transparency and heat stability characteristics, together with notable migration and light fastness properties and notable fastness to overspraying.

The following Examples, in which all parts and percentages are by weight and the temperatures in degrees Centigrade, illustrate the invention.

EXAMPLE 1.

32 Parts of 3-imino-iso-indolinone and 25 parts of 2,5-dichloro-1,4-diaminobenzene hydrochloride are dissolved in 500 parts of ortho-dichlorobenzene and reacted for 16 hours at 130—140° with thorough stirring. A yellow precipitate forms which is filtered off at 100° with suction, washed consecutively with hot orthodichlorobenzene, methanol and water, and dried at 100°. The crude product is dissolved in a mixture of 500 parts of ethyl alcohol and 25 parts of 33% sodium hydroxide solution at 60°. After the addition of activated carbon the solution is stirred for a short time and then filtered. The filtrate is acidified with 15 parts of acetic acid to precipitate the pigment, which is filtered off while still warm, washed with ethyl alcohol and water, and dried at 100°.

A pigment of high tinctorial strength with the formula



is obtained. It is eminently suitable for the pigmentation of synthetic polymers and surface coatings and is notable for very good light and migration fastness, heat stability and fastness to overspraying.

EXAMPLE 2.

17.7 Parts of 2,5-dichloro-1,4-diaminobenzene are added to a solution of 35 parts of 3-chloro-1-oxoiso-indolinone in 400 parts of 1,2-dichlorobenzene. The reaction mixture is heated to 150° with stirring and stirred further at this temperature until the evolution of hydrogen chloride ceases. The precipitated pigment is filtered off at 100°, washed with hot 1,2-dichlorobenzene, hot methanol and finally with water, and dried. The pigment thus obtained is identical with that described in Example 1.

In the following Table further pigments of formula I are listed which are produced in accordance with the procedure of Example 1 or 2.

of the ventilator 10. Each slot in the upper end of the caps 52 and 53 is adapted to snugly receive the mated mounting fins 29 and 43, whereas each slot in the lower end of the caps is adapted to snugly receive the mounting fin 33 of the inner plate 25. As is apparent from Figure 3, the mated mounting fins 29 and 43, and the mounting fin 33 inserted in the cap slots bear at their opposite ends against the respective upper and lower lateral ends of mounting fins 57 and 58 as at 56 in Figure 5, which fins are formed integral with and project centrally from the caps 52 and 53, respectively. Reference numeral 59 designates grooves of an arcuate cross-section formed in the mounting fins 57 and 58 adjacent the sockets 30, 51, and the holes 32 so as to facilitate the tightening and loosening of the screws above described.

When the ventilator 10 is mounted on the sash, the mated mounting fins 29 and 43, and the mounting fin 33 are inserted in the upper rail 19 and the rail 24, respectively, with respective sealing strips 60 interposed therebetween, as seen in Figure 2. Similarly, the mounting fins 57 and 58 are inserted in the stiles 21 and 22, respectively, with respective sealing strips 60 interposed therebetween as illustrated in Figure 3.

The operation of the ventilator system embodying the invention will now be described in detail with reference to Figure 2. With the ventilator construction described above, a wind blowing in through the opening 44 of the ventilator 10 impinges upon the lower portion of the inner plate 25 opposite to the opening 44 beneath the outer plate 26 and is directed upwardly towards the L-shaped deflector member 36 thereby to prevent the flow of high velocity air from entering directly into the building interior. Since the L-shaped deflector member 36 extends towards the outer plate 26 and abuts against the filter 48, the air flow is prevented from flowing in between the deflector member 36 and the filter 48 and hence is forced through the filter 48 as indicated by the arrow 64. The air enters between the outer plate 26 and the filter 48 and again passes through the filter 48, thence through the slits 39 and the air vents 27 into the interior of the building, as shown by the arrow 65. At this time, it will be appreciated that the filter 48 below the deflector member 36 prevents dust carried by the wind from further entering the ventilator 10 and above the deflector member 36 prevents residual dust from entering into the building interior, which residual dust would otherwise be carried by the air flow past the filter 48 below the deflector member 26. Thus, the ventilator 10 of this invention functions to direct dust laden air twice through the filter 48, thereby

substantially removing the dust completely from the air. Furthermore, the rain entering the opening 44 is effectively prevented from being admitted into the building interior even under storm conditions, because the rain directly impinges upon the slanted surface of the flange 31 or the inner plate 25 opposite the opening 44. The slanted surface of the flange 31 allows water thereon to drain out of the ventilator 10.

The ventilator 10 broadly comprises the inner plate 25 and the outer plate 26 fixedly connected by the caps 52 and 53 to form a unitary structure and hence is relatively foolproof in mounting itself on the sash. Furthermore, the ventilator 10 fits in the upper and additional rail 19, 24 and the stiles 21, 22 with the sealing strips 60 peripherally mounted around the ventilator, so that any leakage of water or air past the edges of the ventilator 10 can be completely eliminated. It is to be understood that other additional partitions displaced from each other and abutting the filter 48 may be provided on the inner and outer plates, respectively, thereby allowing the air to pass through the filter 48 more than twice in the ventilator 10. While the ventilator 10 of this invention has been shown applied to the window assembly by way of example, it will be noted that it may be also applied to doors, walls or other building components.

Although a particular preferred embodiment of the invention has been disclosed in detail for illustrative purposes, it will be understood that various changes and modifications may be made without departing from the scope of the appended claims.

WHAT WE CLAIM IS:—

1. A ventilator for use with windows, doors or other building components, comprising:

an inner plate having a plurality of air vents formed therein;

an outer plate spaced apart a predetermined distance from said inner plate in the transverse direction of the ventilator and providing an opening displaced from said air vents in the inner plate;

a filter fixedly positioned between said inner and outer plates; and

a deflector member extending from said inner plate toward said outer plate and abutting against said filter thereby directing a flow of air at least twice through said filter.

2. A ventilator as defined in claim 1 wherein said inner and outer plates are interconnected by side caps fitting over the lateral sides of said plates.

3. A ventilator as defined in claim 1 wherein said inner plate is provided at its topmost and lowermost ends with mounting fins extending upwardly and downwardly, respectively.



(12)

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an inner plate having a plurality of air vents formed therein;

an outer plate spaced apart a predetermined distance from said inner plate in the transverse direction of the ventilator and providing an opening displaced from said air vents in the inner plate;

a filter fixedly positioned between said inner and outer plates; and

a deflector member extending from said inner plate toward said outer plate and abutting against said filter thereby directing a flow of air at least twice through said filter.

2. A ventilator as defined in claim 1 wherein said inner and outer plates are interconnected by side caps fitting over the lateral sides of said plates.

3. A ventilator as defined in claim 1 wherein said inner plate is provided at its topmost and lowermost ends with mounting fins extending upwardly and downwardly, respectively.

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4. A ventilator as defined in claim 3 wherein said outer plate is provided at its uppermost end with an upwardly extending mounting fin which mates with said
- 5 mounting fin extending upwardly from said inner plate.
5. A ventilator substantially as herein described with reference to and as illustrated in the accompanying drawings.

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