United States Patent Office 3,846,129
Patented Nov. 5, 1974

3,846,129

DYE DIFFUSION TRANSFER COMPOSITIONS, ELEMENTS AND PROCESSES

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No Drawing. Filed Sept. 25, 1972, Ser. No. 292,009
Int. Cl. G03c 1/40, 5/30, 5/54, 7/00
U.S. Cl. 96—3 10 Claims

ABSTRACT OF THE DISCLOSURE

Color diffusion transfer systems are disclosed which utilize developing compositions comprising an aqueous alkaline solution of a phenylenediamine color developing agent, a thickening agent, a competing black and white developer and an aromatic alcohol.

FIELD OF INVENTION

This invention relates to the art of photography and more particularly, to color diffusion transfer systems and processing compositions for use therein.

DESCRIPTION OF PRIOR ART

Color diffusion transfer image-forming systems are well known in the art. Systems of this type typically utilize a processing or developing composition which is contained in a rupturable pod operably associated with a color diffusion transfer film unit. This developing composition is generally released by pulling the film unit between a pair of opposed pressure-applying members. As the unit passes between these members, the pod is ruptured and a layer of the developing composition is spread across the unit.

One problem often encountered with systems of this type is a low thickness of the resultant layer of developer. A low developer layer thickness (DLT) is usually caused by improper camera-operator interactions. If the operator pulls the film unit through the pressure-applying members too rapidly, it results in a low DLT. This problem of low DLT is particularly severe in systems utilizing p-phenylenediamine color developing agents because it results in a loss of maximum density. In addition, a low DLT in systems of this type causes color balance shifts as a result of the differences in sensitivity of the various color forming layers of the film unit. The sensitivity of these systems to the described DLT problem, also known as a "DLT latitude" problem, can be partially compensated for by raising the concentration of the color developing agent in the developing composition. Increasing the concentration of color developer in this manner, however, leads to an intolerable increase in post-process stain. This stain is particularly noticeable in the minimum density areas of the picture. Accordingly, there is a need in the art for a means of effectively extending the DLT latitude to obtain high quality images.

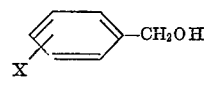
SUMMARY OF INVENTION

I have found that without increasing the color developer concentration in processing composition the developer layer thickness latitude in a diffusion transfer film unit can be increased significantly through the use, in the processing composition, of an aromatic alcohol dye booster and a competing developer.

DESCRIPTION OF PREFERRED EMBODIMENTS

The objects of the present invention are achieved with alkaline processing compositions comprising an aqueous alkaline solution of (1) a phenylenediamine color developing agent, (2) a competing black and white developing agent, (3) an aromatic alcohol and (4) a thickening agent to provide this composition with a viscosity typically in the range of about 100 to about 200,000 cps.

The aromatic alcohols used herein have the formula:



wherein X represents a hydrogen atom, a lower alkyl radical of 1 to 3 cabon atoms or a hydroxymethyl radical. Representative alcohols include benzyl alcohol, methylbenzylalcohols, ethylbenzylalcohols, xylenediols, etc. The present alcohols appear to function as dye boosters in that they give rise to greater maximum dye density. The addition of these alcohols alone (without an accompanying addition of a competing developer) will give increased DLT latitude in the maximum density areas. However, an undesirable side effect of the addition of only the alcohols is that the lower density regions of the sensitometric curve (i.e., the "toe" region of the H and D curve) are substantially decreased in contrast.

The present combination of aromatic alcohol and competing developer when added to processing compositions not only results in greater DLT latitude but also gives images having suitable contrast in the lower density or toe region of the sensitometric curve. The terms "competing developer" or "competing developing agent" as used herein have reference to a variety of developing agents which work in conjunction with the phenylenediamine color developing agent, but which do not generate any dye. Typical examples of useful competing developers are various black and white developers such as aminophenols, e.g., p-aminophenol hydrochloride, p-benzylaminophenol hydrochloride, 1 - (p-hydroxyphenyl)pyrrolidine, amidol, p-methylaminophenol sulfate, 4-methylamino-2-methylphenol sulfate, etc.; hydroquinones, e.g., sodium hydroquinonesulfonate, chlorohydroquinone, methylhydroquinone, hydroquinone, etc.; 3-pyrazolidinones, e.g., 1-phenyl-4,4 - dimethyl-3-pyrazolidinone, 1-phenyl-4-methyl-4-hydroxy-methyl-3-pyrazolidinone, 1-phenyl-4,4-bis(hydroxymethyl)-3-pyrazolidinone, etc.

The processing compositions described herein are strongly alkaline. Such processing compositions are generally aqueous compositions having a pH of at least 12 or contain at least .01 N hydroxyl ion. Alkaline materials, especially alkali metal hydroxides and carbonates such as sodium hydroxide and sodium carbonate, are advantageously used in the processing compositions for imparting such high alkalinity. However, volatile amines such as diethyl amine can also be used, such amines having the advantage of being volatilized from the transfer prints to leave no residue of alkali.

The present compositions also contain an alkaline-inert thickening agent so as to impart thereto a viscosity of about 100 to about 200,000 cps. Additives for this purpose are known in the art and include various viscosity increasing compounds such as a higher molecular weight polymer. Exemplary of such polymers are water-soluble ethers inert to alkaline solutions such as hydroxyethyl cellulose or alkali metal salts of carboxymethyl cellulose such as sodium carboxymethyl cellulose. Typical suitable hydroxyethyl cellulose materials are those prepared by hydroxyethylating a substantial portion of, and more generally more than one-half of, the hydroxyl groups of the cellulose molecule, the remaining hydroxyl groups of the cellulose molecule being preferably substantially free or unsubstituted although minor proportions of other groups such as hydroxypropyl or the like can be present. Concentrations of the thickening agent of about 1% to about 5% by weight based on the weight of the processing composition are generally used so as to impart the desired viscosity. Solution viscosities referred to herein are in Brookfield centipoise units determined at 25° C.

The phenylenediamine color developing agents useful in the present processing compositions can be selected from a variety of such materials known to those skilled in the art and include the following compounds and salts thereof:

4-amino-N,N-diethyl-3-methyl aniline,
N,N-diethyl-p-phenylenediamine,
N-ethyl-N-(β-methanesulfonamidoethyl)-3-methyl-4-amino aniline,
4-amino-N-ethyl-3-methyl-N-(β-sulfoethyl)aniline,
4-amino-N-ethyl-3-methoxy-N-(β-sulfonethyl)aniline,
4-amino-N-ethyl-N-(β-hydroxyethyl)aniline,
4-amino-N,N-diethyl-3-hydroxymethyl aniline,
4-amino-N-methyl-N-(β-carboxyethyl)aniline,
4-amino-N,N-bis(β-hydroxyethyl)aniline,
4-amino-N,N-bis(β-hydroxyethyl)-3-methyl aniline,
3-acetamido-4-amino-N,N-bis(β-hydroxyethyl)aniline,
4-amino-N-ethyl-N-(2,3-dihydroxypropyl)-3-methyl aniline,
4-amino-N,N-diethyl-3-(3-hydroxypropoxy)aniline,

and the like.

The processing compositions of this invention typically contain from about 10 to about 100 and preferably about 25 to about 50 grams of phenylenediamine color developing agent per liter of processing composition, from about 0.1 to about 10 and preferably about 0.1 to about 2 grams of competing developing agent per liter of said composition and from about 1 to about 50 and preferably about 2 to about 15 grams of aromatic alcohol per liter. As mentioned previously the present aqueous processing compositions typically contain about 1 to about 5% by weight of thickening agent and sufficient alkaline material to impart a pH of at least 12 to the composition or to raise the hydroxyl ion content to at least 0.01 N.

The present processing compositions are useful in any viscous photographic processing system. These compositions are especially suited for use in color diffusion transfer systems. Photographic film units for use in the latter systems are typically adapted to be processed by passing the unit between a pair of juxtaposed pressure-applying members, such as would be found in a camera designed for in-camera processing, comprising:

(a) a photosensitive element comprising a support having thereon at least one, and preferably three, photosensitive silver halide emulsion layers, each silver halide emulsion layer having associated therewith a dye image-providing material comprising a nondiffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible dye;
(b) a dye image-receiving layer;
(c) means for discharging the processing composition within the film unit such as a rupturable container adapted to be positioned during processing of the film unit so that a compressive force applied to the container by the pressure-applying members will effect a discharge of the contents of the container within the film unit.

In one embodiment of the invention, the processing compositions described herein are used in a film unit comprising a photosensitive element comprising a support having thereon a red-sensitive silver halide emulsion layer having associated therewith a cyan dye image-providing material comprising a nondiffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible cyan dye, a green-sensitive silver halide emulsion layer having associated therewith a magenta dye image-providing material comprising a nondiffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible magenta dye, and a blue-sensitive silver halide emulsion layer having associated therewith a yellow dye image-providing material comprising a nondiffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible yellow dye.

In the preferred photosensitive film units utilizing the processing compositions of my invention, there is associated with each silver halide emulsion layer in the photosensitive element a dye image-forming coupler which is nondiffusing in photographic silver halide emulsions but which produces a diffusible dye on reaction with an oxidized aromatic primary amino developing agent in alkaline processing compositions. Such couplers include those having the formulas:

$$\text{DYE—LINK—(COUP—BALL)}_n$$

and

$$\text{BALL—LINK—(COUP—SOL)}_n$$

wherein:

(1) DYE is a dye precursor, e.g., a leuco dye, a "shifted" dye which shifts hypsochromically or bathochromically when subjected to a different environment such as a change in pH, reaction with a material to form a complex, etc.; or a dye radical exhibiting selective absorption in the visible spectrum (including metal complexed dyes), the dye precursor or dye radical containing an acidic solubilizing radical;
(2) LINK is a conecting radical which will split when the coupler is contacted with an oxidized aromatic primary amine such as an azo radical, a mercuri radical, an oxy radical, an alkylidene radical, a thio radical, a dithio radical, an azoxy radical, an aminoalkyl radical, a sulfonyloxy radical, an acyloxy radical or an imido radical;
(3) COUP is a coupler radical such as a 5-pyrazolone coupler radical, a pyrazolotriazole coupler radical, a phenolic coupler radical or an open-chain ketomethylene coupler radical, COUP being substituted in the coupling position with LINK;
(4) BALL is a photographically inert organic ballasting radical of such molecular size and configuration as to render such coupler nondiffusible during development in the alkaline processing composition;
(5) SOL is a hydrogen atom or an acidic solubilizing group when the color developing agent contains an acidic solubilizing group, and SOL is an acidic solubilizing group when the color developing agent is free of an acidic solubilizing group; and
(6) *n* is an integer of 1 to 2.

For further details concerning the above-described couplers, their preparation and use, reference is made to U.S. Pat. No. 3,227,550 of Whitmore et al., issued Jan. 4, 1966; U.S. Pat. No. 3,227,552 of Whitmore, issued Jan. 4, 1966; and British Pat. No. 904,364, p. 19, lines 1–41. Typical image transfer systems wherein the present processing compositions are useful include those described in detail in U.S. Pats. 3,227,550 by Barr et al., 3,227,552 by Whitmore and 3,227,554 by Barr et al., all issued June 4, 1966; 3,443,940, 3,443,939, 3,443,941 and 3,443,943, all issued May 13, 1969; Belgian Pats. 757,959 and 757,960, both issued Apr. 23, 1971, and the like. They can also be used in formats such as those disclosed in U.S. Pats. 3,415,644; 3,415,645; and 3,415,646, all issued Dec. 10, 1968.

The invention can be further illustrated by the following examples of preferred embodiments thereof.

EXAMPLE 1

A multicolor photographic element is prepared by coating the following layers in the order recited on an opaque cellulose acetate film support:

(1) red-sensitive internal-image gelatin-silver chlorobromide emulsion (13.23 mg. gelatin/dm.^{2} and 10.76 mg. silver/dm.^{2}), cyan image transfer coupler 1-hydroxy-4 - {4-[α-(3-pentadecylphenoxy)butyramido]phenoxy}-N-ethyl-3',5'-dicarboxy-2-naphthanilide (12.37 mg./dm.^{2}) and fogging agent formyl-4-methylphenylhydrazine (0.75 g./mole of silver);

(2) an oxidized developer scavenger interlayer comprising 1 - hydroxy-N-[α-2,4-di-*tert*-amylphenoxy)butyl] 2-naphthamide (3.77 mg./dm.^{2}), gelatin (5.38 mg./dm.^{2}) and tricresyl phosphate (1.53 mg./dm.^{2});

(3) green-sensitive, negative-working, gelatin-silver bromide emulsion (2.15 mg. silver/dm.^{2} and 10.76 mg. gelatin/dm.^{2}), tricresyl phosphate (4.30 mg./dm.^{2}), 2,4-di-n-amylphenol (2.15 mg./dm.^{2}), DIR coupler 1-hydroxy - 4-(2-benzothiazolylthio)-2-(2'-n-tetradecyloxy) naphthamide (4.30 mg./dm.^{2}) and DIR coupler 1-hydroxy - 4 - (5-methyl-2-benzotriazolyl)-2-(2'-n-tetradecyloxy)naphthanilide (2.15 mg./dm.^{2});

(4) an oxidized developer scavenger interlayer comprising 1-hydroxy-N-[α-(2,4-di-*tert*-amylphenoxy)butyl]-2-naphthamide (3.77 mg./dm.^{2}), tricresyl phosphate (1.83 mg./dm.^{2} and gelatin (50 mg./dm.^{2});

(5) green-sensitive internal-image gelatin-silver chlorobromide emulsion (10.76 mg. gelatin/dm.^{2} and 8.07 mg. silver/dm.^{2}), magenta image transfer coupler 1-phenyl-3 - (3,5 - dicarboxyanilino)-4-(*m*-octadecylcarbamylphenylthio)-5-pyrazolone (8.61 mg./dm.^{2}) fogging agent formyl-4-methylphenylhydrazine (0.75 g./mole of silver) and N-n-butylacetanilide (4.3 mg./dm.^{2});

(6) an oxidized developer scavenger and a yellow filter layer comprising 1 - hydroxy-N-[α-(2,4 - di-*tert*-amylphenoxy)butyl]-2-naphthamide (3.77 mg./dm.^{2}), yellow Carey Lea silver (1.61 mg./dm.^{2}), tricesyl phosphate (1.83 mg./dm.^{2}) and gelatin (5.38 mg./dm.^{2});

(7) blue-sensitive internal-image gelatin-silver chlorobromoiodide emulsion (9.25 mg. gelatin/dm.^{2} and 6.46 mg. silver/dm.^{2}), yellow image transfer coupler α-pivalyl-α-[4 - (N - methyl - N - n-octadecylsulfamylphenoxy]-4-sulfoacetanilide (7.53 mg./dm.^{2}) and fogging agent formyl-4-methylphenylhydrazine (0.75 g./mole of silver); and

(8) overcoat of gelatin (5.38 mg./dm.^{2}).

The above element is described further in copending Thomas and Tuite U.S. Ser. No. 204,340, filed Dec. 2, 1971, incorporated herein by reference thereto (see Example 9 thereof). The resultant element is exposed to a multicolor test object. The processing compositions (Developers A and B) described below are each spread from a pod between the exposed surface of an image forming element as described above and a superposed image-receiving element by passing the resultant transfer "sandwich" between a pair of juxtaposed pressure rollers which are set to provide a specified developer layer thickness (DLT). After 60 seconds at 24° C., the image-receiving element is peeled apart from the negative or image-forming element. The receiver comprises the following layers coated on a support in the sequence recited (coverages are given in parenthesis as mg./dm.^{2}): Layer (1) partially hydrolyzed poly(methoxyethylene-co-maleic anhydride) (178) and dibutyl maleate (66); Layer (2) titanium dioxide (108), poly[styrene-*co*-N-benzyl-N,N-dimethyl-N-(3-maleimidopropyl)ammonium chloride] mordant (32), zinc oxide (8.1) and 1,4-butanediol diglycidyl ether hardener (5.4); Layer (3) the mordant of Layer (2) (5.4) and gelatine (32) and Layer (4) gum arabic (2.2). Developers A and B contain the following ingredients:

Component	Developers A	Developers B
Water, g	1,000	1,000
Potassium hydroxide, g	50	50
Piperidino hexose reductone, g	0.2	0.2
4-amino-N-ethyl-N-β-hydroxyethylaniline, g	50	50
5-methylbenzimidazole, g	0.05	0.05
1-phenyl-2-tetrazoline-5-tione (PMT), g	0.02	0.02
Diethylene glycol, ml	10	10
Hydroxyethylcellulose (HEC), g	26	26
Benzyl alcohol, ml	0	2

The maximum densities are measured and the results obtained with these two developers are shown below.

	Developer A			Developer B		
	Red	Green	Blue	Red	Green	Blue
Maximum density at—						
DLT .076 mm	1.77	1.77	1.48	1.90	1.77	1.58
DLT .056 mm	1.92	1.69	1.09	1.76	1.87	1.36
Change in density (ΔD) by reducing DLT .02 mm	−0.38	−0.08	−0.39	−0.13	+0.1	−0.22

With Developer B most of the dye density is retained despite the reduction of the DLT. With Developer A, the dye density is substantially lower in the red- and blue-sensitive layers. The lower scale or "toe" region contrast obtained with Developer B is considerably lower than A.

EXAMPLE 2

This example demonstrates the effect of a combination of competing developer and aromatic alcohol. An image-forming element and a receiving element as described in Example 1 are each processed as in Example 1 using Developers C and D which contain the following ingredients:

Component	Developer C	Developer D
Water, grams	1,000	1,000
Potassium hydroxide, grams	50	50
4-amino-N-ethyl-N-β-hydroxyethylaniline, grams	50	50
5-methylbenzimidazole, grams	0.05	0.05
1-phenyl-2-tetrazoline-5-thione (PMT), grams	0.01	0.01
Hydroxyethylcellulose, grams	.26	26
Piperidinohexose reductone, grams	0.2	0.2
p-Xylene-α,α-diol, grams	0	5
p-Aminophenol hydrochloride, grams	0	1

The maximum densities are measured as in Example 1 with the results shown below.

	Developer C			Developer D		
	Red	Green	Blue	Red	Green	Blue
$D_{max.}$ at—						
DLT .076 mm	2.02	1.66	1.50	1.92	1.60	1.55
DLT .056 mm	1.80	1.48	1.14	1.82	1.58	1.34
Change in $D_{max.}$ (ΔD) by reducing DLT .020 mm	−0.18	−0.18	−0.36	−0.10	−0.02	−0.21

A significant improvement in DLT sensitivity is observed with Developer D in all three layers. No decrease in lower scale contrast is observed with formulation D. Lower minimum densities in all layers are observed with formulation D.

EXAMPLE 3

The same image-forming and receiving elements as in Example 1 are processed under the conditions described previously using Developers E and F as follows:

Component	Developers E	Developers F
Water, g	1,000	1,000
Potassium hydroxide, g	50	50
4-amino-N-ethyl-N-β-hydroxyethylaniline, g	40	40
5-methylbenzimidazole, g	0.05	0.05
1-phenyl-2-tetrazoline-5-thione (PMT), g	0.01	0.01
Hydroxyethylcellulose, g	26	26
Piperidinohexose reductone, g	0.2	0.2
p-Xylene-α,α-diol, g	0	5
p-Aminophenyl hydrochloride, g	0	1

The maximum densities of the resultant transferred image are measured with the results shown below.

	Developer E			Developer F		
	Red	Green	Blue	Red	Green	Blue
$D_{max.}$ at—						
DLT .069 mm	1.47	1.47	1.47	1.54	1.38	1.52
DLT .056 mm	1.40	1.52	1.30	1.51	1.44	1.46
Change in $D_{max.}$ (ΔD) by reducing DLT .013 mm	−0.07	−0.05	−0.17	−0.03	+0.06	−0.06

Developer F shows improved DLT latitude. The transfers processed with Developer E at 0.56 mm. DLT show severe non-uniformity (mottle) in the maximum density areas; whereas, this mottle is not observed on transfers processed under like conditions with Developer F.

EXAMPLE 4

The same negative and receiving elements as in Example 1 are processed in Developers C and D as previously described. The results below illustrate an additional difficulty (i.e. severe mottle) caused by low DLT and how the problem can be alleviated by the use of the competing developer and dye boosting agents of the invention.

	Developer C			Developer D		
	Red	Green	Blue	Red	Green	Blue
$D_{max.}$ at—						
DLT .069 mm	1.73	1.75	1.67	1.65	1.53	1.69
DLT .056 mm	0.72-*1.38	1.13-*1.74	0.79-*1.45	1.63	1.62	1.69
Average change in $D_{max.}$ (ΔD)	−0.68	−0.32	−0.55	−0.02	+0.09	0

*Severe mottle in $D_{max.}$—Average value used for calculation of differences.

EXAMPLE 5

Example 1 is repeated using Developer E of Example 3, Developer G which is identical to E with the addition of 5 g. of *p*-xylene-α,α-diol, and Developers H, J, K and L as described below.

Developer H=Developer G+2 g. p-benzylaminophenol
Developer J=G+2 g. sodium hydroquinonemonosulfonate
Developer K=Developer G+2 g. p-methylaminophenol
Developer L=Developer G+2 g. 1-phenyl-4,4-dimethyl-3-pyrazolidone.

Developer G shows "dye boosting" similar to that observed in Example 1. However, the lower scale contrast is reduced relative to Developer E (filled toe) especially the red sensitive layer. Developers H, J, K and L have increased lower scale contrast relative to Developer G.

The invention has been described in detail with particular reference to preferred embodiments thereof but it will be understood that variations and modifications can be effected within the spirit and scope of the invention.

I claim:

1. A color developing composition comprising an aqueous alkaline solution of (1) a phenylenediamine color developing agent, (2) a competing black and white developing agent, (3) a xylenediol, and (4) a thickening agent to impart a viscosity of about 100 to 200,000 cps. to said composition.

2. The developing composition as described in claim 1 wherein said xylenediol is xylene-α,α-diol.

3. The developing composition as described in claim 1 wherein said competing developer is selected from the group consisting of an aminophenol, a hydroquinone and a 3-pyrazolidinone.

4. In a process for forming diffusion transfer images by treating with an alkaline processing composition an imagewise exposed photosensitive element comprising a support having thereon at least one photosensitive silver halide emulsion layer, each said layer having associated therewith a non-diffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible dye, said treatment effecting development of each exposed silver halide emulsion layer to form an imagewise distribution of diffusible dye image-providing material at least a portion of which diffuses to a dye image-receiving layer of a dye image-receiving element, the improvement wherein said developer composition comprises an aqueous alkaline solution of (1) a phenylenediamine color developing agent,(2) a competing black and white developing agent, (3) a xylenediol, and (4) a thickening agent to impart a viscosity of about 100 to 200,000 cps. to said composition.

5. The process of claim 4 wherein said treatment with an alkaline processing composition is effected by

(a) superposing over the layer outermost from the support of said photosensitive element said dye image-receiving layer carried on a support;

(b) positioning a rupturable container containing said alkaline processing composition between said exposed photosensitive element and said dye image-receiving layer; and

(c) applying a compressive force to said container to effect a discharge of the contents of the container between said outermost layer of said exposed photosensitive element and said dye image-receiving layer.

6. The process as described in claim 4 wherein said photosensitive element comprises a support having thereon a red-sensitive silver halide emulsion layer having associated therewith a cyan dye image-providing material comprising a nondiffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible cyan dye, a green-sensitive silver halide emulsion layer having associated therewith a magenta dye image-providing material comprising a non-diffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible magenta dye, and a blue-sensitive silver halide emulsion having associated therewith a yellow dye image-providing material comprising a nondiffusible coupler capable of reacting the oxidized aromatic primary amino color developing agent to produce a diffusible yellow dye.

7. The process as described in claim 4 wherein said xylenediol is xylene-α,α-diol.

8. The process as described in claim 4 wherein said competing developer is selected from the group consisting of an aminophenol, a hydroquinone and a 3-pyrazolidinone.

9. In a photographic film unit, adapted to be processed by passing said unit between a pair of juxtaposed pressure-applying members comprising:

(a) a photosensitive element comprising a support having thereon at least one photosensitive silver halide emulsion layer, each said silver halide emulsion layer having associated therewith a non-diffusible coupler capable of reacting with oxidized aromatic primary amino color developing agent to produce a diffusible dye;

(b) a dye image-receiving layer;

(c) an alkaline processing composition; and

(d) means for discharging the alkaline processing composition within said film unit;

the improvement wherein said processing composition comprises an aqueous alkaline solution of (1) a phenylenediamine color developing agent, (2) a competing black and white developing agent, (3) a xylenediol, and (4) a thickening agent to impart a viscosity of about 100 to 200,000 cps. to said composition.

10 The film unit of claim **9** wherein said discharging means comprises a rupturable container and is so positioned during processing of said film unit that a compressive force applied to said container by said pressure-applying members will effect a discharge of the contents of the container between said dye image-receiving layer and the layer most remote from the support of said photosensitive element.

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U.S. Cl. X.R.

96—29 D, 66 R, 77