

Title (en)

Method for processing a black & white silver halide light-sensitive material.

Title (de)

Verarbeitungsverfahren für lichtempfindliches silberhalogenidenthaltendes Schwarzweissmaterial.

Title (fr)

Procédé de traitement de matériau noir et blanc à l'halogénure d'argent sensible à la lumière.

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Application

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Priority

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Abstract (en)

There is disclosed a processing method for a silver halide light-sensitive material, in which a nitrogen-containing compound is not contained in a fixing solution in order to reduce a nitrogen content in a washing water and a fixing speed is fast even in the case where a replenishing amount is decreased in order to reduce the amount of waste solution. The method is characterized by: 1) a developing solution having a potassium ion concentration of 0.1 mole/liter or less, 2) a fixing solution containing 0.5 to 2.5 mole/liter of sodium thiosulfate and having an ammonium ion concentration of 0.1 mole/liter or less and a water soluble aluminum compound concentration of 0.01 mole/liter or less, 3) a replenishing amount of the fixing solution at 250 ml/m<2> or less. In certain embodiments of the present invention, the photographic material may be dried using the apparatus described in the specification. <IMAGE>

IPC 1-7

G03C 5/26; **G03D 15/02**

IPC 8 full level

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Citation (applicant)

- JP H0411250 A 19920116 - KONISHIROKU PHOTO IND
- JP H0411251 A 19920116 - KONISHIROKU PHOTO IND
- JP S62186259 A 19870814 - FUJI PHOTO FILM CO LTD
- JP S6093433 A 19850525 - FUJI PHOTO FILM CO LTD
- JP S56106244 A 19810824 - EASTMAN KODAK CO
- JP S5624347 A 19810307 - FUJI PHOTO FILM CO LTD
- EP 0136582 A2 19850410 - MINNESOTA MINING & MFG [US]
- US 2193015 A 19400312 - ARNOLD WEISSBERGER
- US 2592364 A 19520408 - ARNOLD WEISSBERGER, et al
- JP S4864933 A 19730907
- JP S6278551 A 19870410 - FUJI PHOTO FILM CO LTD
- JP S6318350 A 19880126 - FUJI PHOTO FILM CO LTD
- JP S62287252 A 19871214 - FUJI PHOTO FILM CO LTD
- JP S60255133 A 19851216 - ZAKUWADEI PURODOUKUTSUI URUZEN, et al
- JP S63163456 A 19880706 - FUJI PHOTO FILM CO LTD
- JP H02201357 A 19900809 - AGFA GEVAERT AG
- JP H02132435 A 19900521 - CHUGAI SHASHIN YAKUHIIN
- JP H01102553 A 19890420 - AGFA GEVAERT AG
- JP H02147076 A 19900606 - ASHIHARA HIDEYUKI
- JP S58127921 A 19830730 - FUJI PHOTO FILM CO LTD
- JP S58113927 A 19830707 - EASTMAN KODAK CO
- JP S58113928 A 19830707 - EASTMAN KODAK CO
- US 1574944 A 19260302 - SHEPPARD SAMUEL E
- US 2278947 A 19420407 - OSKAR RIESTER
- US 2410689 A 19461105 - SHEPPARD SAMUEL E, et al
- US 2728668 A 19551227 - EDWIN MOCHEL WALTER
- US 3501313 A 19700317 - WILLEMS JOZEF FRANS, et al
- US 3656955 A 19720418 - USHIMARU YOSHUKI, et al
- US 2448060 A 19480831 - SMITH WILLIAM F, et al
- GB 618061 A 19490216 - KODAK LTD, et al
- US 2487850 A 19491115 - CARROLL BURT H
- US 2518698 A 19500815 - LOWE WESLEY G, et al
- US 2983609 A 19610509 - ALLEN CHARLES F H, et al
- US 2983610 A 19610509 - ALLEN CHARLES F H, et al
- US 2694637 A 19541116 - GRAY RUSSELL H
- US 4425425 A 19840110 - ABBOTT THOMAS I [US], et al
- US 4425426 A 19840110 - ABBOTT THOMAS I [US], et al
- JP S5990841 A 19840525 - EASTMAN KODAK CO
- JP S58111934 A 19830704 - EASTMAN KODAK CO
- JP S61201235 A 19860905 - FUJI PHOTO FILM CO LTD
- US 3271158 A 19660906 - NORMAN ALLENTOFF, et al
- US 2992101 A 19610711 - JELLEY EDWIN E, et al
- US 2701245 A 19550201 - WILLIAM LYNN
- US 4142894 A 19790306 - HORI KIYOTAKA, et al
- US 4396706 A 19830802 - ISHII TSUMORU [JP], et al
- JP S59166940 A 19840920 - FUJI PHOTO FILM CO LTD

- US 3958995 A 19760525 - CAMPBELL GERALD A, et al
- JP S55142339 A 19801106 - KONISHIROKU PHOTO IND
- JP S54126027 A 19790929 - FUJI PHOTO FILM CO LTD
- JP S54155835 A 19791208 - FUJI PHOTO FILM CO LTD
- JP S5330328 A 19780322 - FUJI PHOTO FILM CO LTD
- JP S5492274 A 19790721 - CANON KK
- US 2548564 A 19510410 - SPRAGUE ROBERT H, et al
- US 3148061 A 19640908 - HAAS HOWARD C
- US 3756814 A 19730904 - BEDELL STANLEY F
- US 3709690 A 19730109 - COHEN H, et al
- US 3898088 A 19750805 - COHEN HYMAN L, et al
- JP S55155350 A 19801203 - CIBA GEIGY AG
- WO 8800479 A1 19880128 - VETTER & CO APOTHEKER [DE]
- US 4080207 A 19780321 - LEONE RONALD E, et al
- US 4269929 A 19810526 - NOTHNAGLE RONALD J
- US 4276364 A 19810630 - LEONE RONALD E
- US 4278748 A 19810714 - SIDHU JASBIR, et al
- US 4385108 A 19830524 - TAKAGI YOSHIHIRO [JP], et al
- US 4459347 A 19840710 - PARTON RICHARD L [US], et al
- US 4560638 A 19851224 - LOBLAW JAMES C [US], et al
- US 4478928 A 19841023 - HESS THOMAS C [US], et al
- GB 2011391 B 19820324 - KODAK LTD
- JP S60179734 A 19850913 - FUJI PHOTO FILM CO LTD
- JP S62270948 A 19871125 - FUJI PHOTO FILM CO LTD
- JP S6329751 A 19880208 - MINNESOTA MINING & MFG
- JP S61170733 A 19860801 - FUJI PHOTO FILM CO LTD
- JP S61270744 A 19861201 - FUJI PHOTO FILM CO LTD
- JP S62948 A 19870106 - FUJI PHOTO FILM CO LTD
- EP 0217310 A2 19870408 - ANITEC IMAGE CORP [US]
- JP S6332538 A 19880212 - FUJI PHOTO FILM CO LTD
- JP S63104047 A 19880509 - FUJI PHOTO FILM CO LTD
- JP S63121838 A 19880525 - FUJI PHOTO FILM CO LTD
- JP S63129337 A 19880601 - FUJI PHOTO FILM CO LTD
- JP S63234245 A 19880929 - FUJI PHOTO FILM CO LTD
- JP S63234246 A 19880929 - FUJI PHOTO FILM CO LTD
- JP S63223744 A 19880919 - FUJI PHOTO FILM CO LTD
- JP S63294552 A 19881201 - FUJI PHOTO FILM CO LTD
- JP S63306438 A 19881214 - FUJI PHOTO FILM CO LTD
- JP S6410233 A 19890113 - FUJI PHOTO FILM CO LTD
- US 4686167 A 19870811 - RESNICK BRUCE M [US], et al
- JP S62178246 A 19870805 - MITSUBISHI PAPER MILLS LTD
- JP S63234244 A 19880929 - FUJI PHOTO FILM CO LTD
- JP S6490439 A 19890406 - FUJI PHOTO FILM CO LTD
- JP H01276128 A 19891106 - FUJI PHOTO FILM CO LTD
- JP H01283548 A 19891115 - FUJI PHOTO FILM CO LTD
- JP H01280747 A 19891110 - FUJI PHOTO FILM CO LTD
- JP H01283549 A 19891115 - FUJI PHOTO FILM CO LTD
- JP H01285940 A 19891116 - FUJI PHOTO FILM CO LTD
- JP H022541 A 19900108 - FUJI PHOTO FILM CO LTD
- JP H02139538 A 19900529 - FUJI PHOTO FILM CO LTD
- JP H02177057 A 19900710 - NEC CORP, et al
- JP H02198440 A 19900806 - FUJI PHOTO FILM CO LTD
- JP H02198441 A 19900806 - FUJI PHOTO FILM CO LTD
- JP H02198442 A 19900806 - FUJI PHOTO FILM CO LTD
- JP H02196234 A 19900802 - FUJI PHOTO FILM CO LTD
- JP H02196235 A 19900802 - FUJI PHOTO FILM CO LTD
- JP H02220042 A 19900903 - FUJI PHOTO FILM CO LTD
- JP H02221953 A 19900904 - FUJI PHOTO FILM CO LTD
- JP H02221954 A 19900904 - FUJI PHOTO FILM CO LTD
- JP S5377616 A 19780710 - FUJI PHOTO FILM CO LTD
- JP S5437732 A 19790320 - FUJI PHOTO FILM CO LTD
- JP S53137133 A 19781130 - FUJI PHOTO FILM CO LTD
- JP S60140340 A 19850725 - FUJI PHOTO FILM CO LTD
- JP S6014959 A 19850125 - RANSBURG JAPAN LTD
- JP H02293736 A 19901204 - FUJI PHOTO FILM CO LTD
- JP H02308239 A 19901221 - FUJI PHOTO FILM CO LTD
- JP H01154060 A 19890616 - NEC CORP
- JP H01205885 A 19890818 - MITSUBISHI ELECTRIC CORP
- JP H06230243 A 19940819 - HUGHES AIRCRAFT CO
- US 3379529 A 19680423 - FREDERICK PORTER RALPH, et al
- US 3620746 A 19711116 - BARR CHARLES R
- US 4377634 A 19830322 - MIFUNE HIROYUKI [JP], et al
- US 4332878 A 19820601 - AKIMURA YOSHITAKA, et al
- JP S49129536 A 19741211
- JP S5467419 A 19790530 - KONISHIROKU PHOTO IND
- JP S56153336 A 19811127 - FUJI PHOTO FILM CO LTD
- JP S56153342 A 19811127 - FUJI PHOTO FILM CO LTD
- JP S61156043 A 19860715 - FUJI PHOTO FILM CO LTD
- JP S60233642 A 19851120 - FUJI PHOTO FILM CO LTD
- JP S5990436 A 19840524 - MATSUSHITA ELECTRIC IND CO LTD
- JP S59138808 A 19840809 - TOSHIBA KK
- JP S61223834 A 19861004 - FUJI PHOTO FILM CO LTD
- JP S61228437 A 19861011 - FUJI PHOTO FILM CO LTD

- JP S6225745 A 19870203 - FUJI PHOTO FILM CO LTD
- JP S6255642 A 19870311 - FUJI PHOTO FILM CO LTD
- RESEARCH DISCLOSURE, vol. 176, no. 17643, December 1978 (1978-12-01), pages 21
- L.F.A. MASON: "Photographic Processing Chemistry", 1966, FOCAL PRESS CO., LTD., pages: 226 - 229
- CUGNAC; CHATEAU: "Evolution of the Morphology of Silver Bromide Crystals During Physical Ripening", SCIENCE ET INDUSTRIE PHOTOGRAPHIE, vol. 33, no. 2, 1962, pages 121 - 125
- DUFFIN: "Photographic Emulsion Chemistry", 1966, FOCAL PRESS CO., LTD., pages: 66 - 72
- P.H. TRIBVLLI; W.F. SMITH, PHOTOGRAPHIC JOURNAL, vol. 80, 1940, pages 285

Citation (search report)

- [Y] GB 1045044 A 19661005 - EASTMAN KODAK CO
- [Y] JP S63118744 A 19880523 - FUJI PHOTO FILM CO LTD
- [Y] PATENT ABSTRACTS OF JAPAN vol. 15, no. 347 (P - 1246) 3 September 1991 (1991-09-03)

Cited by

EP0704756A1; US5766830A; GB2303220A; GB2303220B

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