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(54) **Silver halide emulsion, photographic light-sensitive material, and process for preparation of seed crystal emulsion**

(57) A silver halide emulsion is described, comprising tabular silver halide grains having an aspect ratio of not less than 3.0 and a grain diameter of not less than 0.8 μm as calculated in terms of sphere in a proportion of not less than 50% of all silver halide grains as calculated in terms of projected area, prepared by a process which comprises desalting a silver halide emulsion comprising tabular silver halide grains having an aspect ratio of not less than 2.0 in a proportion of not less than 50% of all silver halide grains as calculated in terms of projected area, and then using the emulsion as a seed crystal emulsion. A silver halide photographic material comprising a support having provided thereon at least one layer containing the silver halide emulsion and a process for the preparation of the seed crystal emulsion are also described.

EP 0 613 042 A3



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EUROPEAN SEARCH REPORT

Application Number
EP 94 10 2737

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|--|---|---|--|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.5) |
| X | EP 0 359 506 A (ILFORD LIMITED) * page 7, line 55 - line 61; claims * | 1,2 | G03C1/005 |
| X | --- PATENT ABSTRACTS OF JAPAN vol. 013, no. 032 (P-817), 25 January 1989 & JP 63 231334 A (KONICA CORP), 27 September 1988, * abstract * | 1,2 | |
| E | --- EP 0 610 597 A (FUJI PHOTO FILM CO., LTD.) * page 3, line 57 - line 61 * | 1,2 | |
| P,A | --- PATENT ABSTRACTS OF JAPAN vol. 018, no. 178 (P-1717), 25 March 1994 & JP 05 341420 A (FUJI PHOTO FILM CO LTD), 24 December 1993, * abstract * | 1,2 | |
| A | --- PATENT ABSTRACTS OF JAPAN vol. 016, no. 382 (P-1403), 14 August 1992 & JP 04 123041 A (KONICA CORP), 23 April 1992, * abstract * | 1,2 | |
| The present search report has been drawn up for all claims | | | TECHNICAL FIELDS SEARCHED (Int.Cl.5) |
| | | | G03C |
| Place of search THE HAGUE | | Date of completion of the search 24 January 1997 | Examiner BUSCHA A.J. |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document</p> | | | |

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

See sheet -B-

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims: invention 1



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EP 94 10 2737 - B -

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions, or groups of inventions, namely:

1. Claims 1,2
2. Claims 3,5,6
3. Claims 4,7,8

The desalting step, which appears to be the crucial point of the subject-matter of claims 1 and 2 (first invention, see underneath), is not mentioned in claims 3 - 8 (inventions 2 and 3). The preparation of seed grains, on the other hand, which appears to be the core of inventions 2 and 3 (independent claims 3 and 4 and depending claims 5 - 8, see underneath), is not mentioned in claims 1 and 2.

Accordingly the claims describe different steps in the preparation of tabular grains with different features, which appear not to be linked to each other.

First invention (Claims 1, 2):

Process (and materials made by this process) for the preparation of tabular grain emulsions, characterized by the steps of:

- Preparing a tabular grain emulsion,
- desalting said emulsion and
- using this emulsion as seed grain emulsion and further growing the grains of said emulsion.

Second invention (Claims 3, 5, 6):

Process for the preparation of tabular seed grains characterized by the precipitation of said seed grains in the presence of an oxidizing agent, a low molecular weight gelatin and by a certain ratio of iodide to bromide ions in the starting halide solution

Third invention (Claims 4, 7, 8)

Process for the preparation of tabular seed grains characterized by the precipitation of said seed grains in the presence of an organic compound with a certain structural unit (-SO₂S-), a low molecular weight gelatin and by a certain ratio of iodide to bromide ions in the starting halide solution.