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SELECTIVE DESENSITIZER

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2 Claims. (Cl. 95—7)

This invention relates to a method of selectively limiting or reducing the spectral sensitivity of gelatino-silver-halide photographic emulsions.

The usefulness of most photographic elements, such as printing and enlarging papers, process plates and films, cine positive films and X-ray films, depends on their sensitivity to the shorter wave lengths of light (ultra violet to blue). In addition they possess a very slight sensitivity to the longer wave lengths (yellow-red) which is of no practical usefulness and is really a disadvantage. Yellow-red light of low intensity is most frequently employed to illuminate dark rooms where the above mentioned photographic products are processed. The brightness of this light or conversely the length of exposure under it, is determined by the yellow-red sensitivity of the photographic product being handled. If the threshold exposure is exceeded it will be found on development that an over-all density has been given to the product which detracts from its quality. This is particularly noticeable in the high lights.

I have found a class of compounds, the purines, which, when added to any of the above mentioned emulsions, reduce the yellow-red sensitivity without affecting the sensitivity to the shorter wave lengths. Among the preferred compounds I have found particularly effective in embodying my invention are: purine, di-iodo-purine, uric acid, adenine, caffeine, xanthine, guanine, hydroxy-caffeine, 1-methyl xanthine, 3-methyl xanthine, 7-methyl xanthine, theophylline, theobromine, para-xanthine, and hypo-xanthine. The purine or substituted purine is added to the emulsion at any point during its manufacture, with any of its constituents, or just before coating on the support. It may be introduced in the form of a solution in water or water miscible solvent or dilute alkali hydroxide in any of these solvents, or in X-ray film it may be added to the emulsion top-coating or anti-abrasion layer.

I have found the preferred amount of these compounds to be added ranges from 50 milligrams to 3 grams per kilogram of the dry constituents of the emulsion (gelatin and silver halide. I do not limit myself to the use of a single compound but a mixture of two or more purine derivatives may be employed without departing from the scope of my invention.

The following example does not limit but is illustrative of my invention.

Example.—To one litre of silver halide emulsion is added with stirring 10 cc. of an alcoholic solution containing 50 mgs. of theophylline (1:3 dimethyl xanthine). It will be found that films coated with this emulsion can be exposed to the yellow-red safe lights of a photographic dark room for a longer period of time, or conversely, to a higher level of illumination, than can films containing no theophylline in the emulsion layer, without the formation of an over-all density which is revealed on development.

As many apparent and widely different embodiments of this invention may be made without departing from the spirit thereof, it is to be understood that I do not limit myself to the foregoing examples or description except as indicated in the following claims.

I claim:

1. A gelatine-silver-halide emulsion of reduced yellow-red sensitivity containing purine in the approximate proportion of 50 milligrams to 3 grams per kilogram of gelatine and silver halide in said emulsion.

2. A gelatine-silver-halide emulsion of reduced yellow-red sensitivity containing a purine in the approximate proportion of 50 milligrams to 3 grams per kilogram of gelatine and silver halide in said emulsion.

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