

# UNITED STATES PATENT OFFICE

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## ULTRA-VIOLET SENSITIVE LAYER

No Drawing.

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This invention relates to a photo-sensitive layer, the sensitivity of which lies chiefly in the ultra-violet.

It is desirable for certain actinometric purposes to have a light sensitive material which reacts to the near ultra-violet rays without being appreciably affected by the rest of the spectrum. Specifically such a material may be used to demonstrate or dose the ultra-violet radiation of sunlight and of various artificial light sources, particularly those used therapeutically. It is an object of this invention to produce such a material.

We have found that thallium salts are sensitive to the ultra-violet and may therefore be used as the basis of the kind of layer described. Thallic oxalate is particularly useful and it may be prepared in a suitable colloid carrier and coated on any suitable support.

Application of the invention to the making of an ultra-violet sensitive paper is as follows:

### Example I

5 grams of thallic chloride are dissolved in 50 c. c. of water and poured with vigorous stirring into a solution of 10 grams of potassium oxalate dissolved in 50 c. c. of 15% gelatin solution. The mixed solutions are coated on sized paper, either by hand or by suitable machines, and then dried at 60 to 80 degrees C.

### Example II

5 grams of thallic chloride are dissolved in 50 c. c. of water and poured with stirring into a solution of 10 grams of potassium oxalate dissolved in 50 c. c. of 5% gum arabic solution. As before the mixed solutions are coated and dried.

The proportions as stated may be varied somewhat and other suitable colloids may be used instead of gelatin or gum arabic.

### Example III

5 grams of thallic chloride are dissolved in 100 c. c. of 5% gum arabic solution. The mixture is coated and dried as before.

These mixtures may be coated on paper or

any other suitable support. A good grade of sized paper is, however, preferable as the image after exposure is more easily visible on an opaque white support.

A layer made in the manner described turns brown on exposure to ultra-violet light, and has very little sensitivity to visible light.

What we claim is:

1. A photo-sensitive layer sensitive primarily to the ultra-violet comprising thallic oxalate.

2. A photo-sensitive layer sensitive primarily to the ultra-violet comprising thallic oxalate and a colloid carrier.

3. A photo-sensitive element sensitive primarily to the ultra-violet comprising a support and a layer of a colloid containing thallic oxalate.

4. An actinometric paper comprising a support of paper and a layer of a colloid containing thallic oxalate.

5. An actinometric paper comprising a support of paper and a layer of gelatin containing thallic oxalate.

Signed at Rochester, New York, this 7th day of May, 1931.

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