

UNITED STATES PATENT OFFICE

2,675,332

HEAT SENSITIVE RECORD MATERIAL

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2 Claims. (Cl. 117-69)

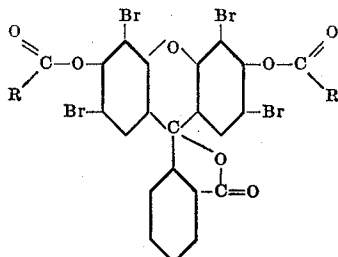
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This invention relates to heat sensitive record material and more particularly pertains to such material which produces a distinctive color, locally on the application of heat.

This is a continuation-in-part of my United States patent application, Serial No. 67,257, filed December 24, 1948, now abandoned.

Such record material is useful in machines equipped with heated marking or printing members where the configuration of any such member or its movement is to be recorded. Such a machine is shown in U. S. Patent No. 2,454,966, issued on the application of H. T. Faus.

Paper or other adsorbent or absorbent base web record material is treated, as by impregnation or coating, first with a mild alkali and then with one of the eosin compounds, of the general structure



wherein R is one of the group comprising CH_3 , C_2H_5 and C_3H_7 . These compounds although intrinsically of yellow-orange color may be applied to the record material base sheet from solution in such small amounts as to give the record material but a slight yellow tint. At 290° Fahrenheit the compound decomposes, producing a strong red color contrasting with the normal yellow tint.

Therefore, it is an object of this invention to provide a heat-sensitive record material comprising a base web treated with a heat-decomposable eosin compound.

The preferred record material is made by treating paper pre-coated with particles of a mild alkaline material with a 3 per cent solution, by weight, of the selected eosin compound in acetone. This treatment may be a coating of the paper with the solution or immersion of the paper in the solution. The paper so treated is then dried, leaving the eosin compound in solid particle form, and is ready for use.

The addition to the paper of a mild alkali of between 8 pH and 12.5 pH, such as sodium carbonate, sodium stearate or sodium phosphate, intensifies the red color at the expense of the stability of the record material in the normal state. The color intensifying alkali is applied first to the paper from solution or suspension, and

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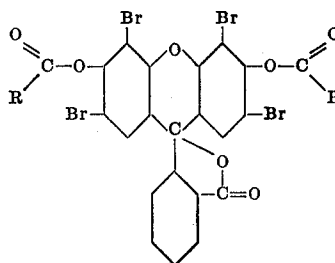
the paper so treated, dried before application of the eosin solution and exists there in dry, solid particle form.

In this manner premature coloration of the eosin compound is avoided. If the alkali were applied in solution as an overcoating the color would immediately appear.

The invention provides an instantaneously reacting record material useful in recording machines in which pressure of the recording member against the record material needs to be kept at a minimum so as not to interfere with its free movement. The recording member is kept heated while making contact with the record material. When mere impression contact is used the color change will occur only at points of heat-transfer contact, giving the configuration of the recording surface. Where a recording member traverses the record material while maintaining contact therewith a trace of red color will appear.

What is claimed is:

1. Record material comprising a base web having an undercoating of dry solid particles of an alkali having a pH value of between 8 and 12.5, and having an adjacent overcoating consisting of solid particles of an eosin compound of the general structure



- wherein R is of the class consisting of CH_3 , C_2H_5 and C_3H_7 .

2. The record material of claim 1 in which the base web is paper.

References Cited in the file of this patent

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Number	Name	Date
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1,844,199	Bicknell	Feb. 9, 1932

OTHER REFERENCES

- Journal of the American Chemical Society, vol. 41, pages 1293-97 (1919).
- Beilstein's Handbuch der Organischen Chemie, Band XIX, System No. 2666-3031, page 230, last paragraph.