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**D E C I S I O N**  
**of 1 February 1994**

**Case Number:** T 0632/91 - 3.3.1

**Application Number:** 86900009.1

**Publication Number:** 0205493

**IPC:** D06M 13/38

**Language of the proceedings:** EN

**Title of invention:**

Use of sulfonated 2-(2'-hydroxyaryl)-s-triazines as photostabilising agents for wool and other protein fibres

**Applicant:**

The Commonwealth Scientific and Industrial Research Organization

**Opponent:**

-

**Headword:**

s-triazines/CSIRO

**Relevant legal norms:**

EPC Art. 56  
EPC R. 64, 68(2)

**Keyword:**

"Admissibility of the appeal (yes)"  
"Extension of the appeal"  
"Inventive step (yes)"  
"Non-obvious alternative"  
"Structural closeness"  
"Common general knowledge - disregarding of evidence (unjustified)"

**Decisions cited:**

T 0007/81, T 0001/88, T 0194/90, T 0020/83

.../...

**Catchword:**

Evidence which did not comprise a comparison of the claimed subject-matter with the state of the art, may, nevertheless, rebut a *prima facie* assumption that there existed some common general knowledge, which would have allowed the skilled person to disregard structural differences of chemical compounds (No. 4.6).

**Case Number:** T 0632/91 - 3.3.1

**D E C I S I O N**  
**of the Technical Board of Appeal 3.3.1**  
**of 1 February 1994**

**Appellant:** The Commonwealth Scientific and  
Industrial Research Organization  
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Australian Capital Territory 2601 (AU)

**Representative:** Wharton, Peter Robert  
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**Decision under appeal:** Decision of the Examining Division of the European  
Patent Office dated 25 March 1991 refusing European  
patent application No. 86 900 009.1 pursuant to  
Article 97(1) EPC.

**Composition of the Board:**

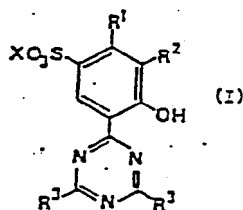
**Chairman:** A. Jahn  
**Members:** P. Krasa  
J.A. Stephens-Ofner

### Summary of Facts and Submissions

I. This appeal, filed on 22 May 1991 (the appeal fee being paid on 24 May 1991), lies from the decision of the Examining Division dated 25 March 1991 refusing the European patent application No. 86 900 009.1 which was filed on 29 November 1985 as international application PCT/AU85/00297 with nine claims.

Independent Claims 1 and 9 read:

"1. A method of protecting proteinaceous fibres and blends thereof against photodegradation and thermal degradation which comprises treating the fibres under acidic conditions with a sulfonated s-triazine derivative of formula I or II;



wherein

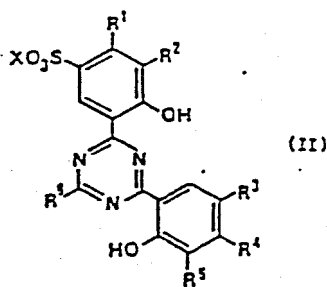
R<sup>1</sup> is hydrogen, alkyl, hydroxy, O-alkyl, OOC-alkyl or OOCNH-alkyl;

R<sup>2</sup> is hydrogen, alkyl or -SO<sub>3</sub>X;

R<sup>3</sup> is aryl, substituted aryl or O-alkyl; and

X is hydrogen, NH<sub>4</sub> or alkali metal;

or



wherein

R<sup>1</sup> and R<sup>4</sup> are hydrogen, alkyl, hydroxyl, O-alkyl, OOC-alkyl or OOCNH-alkyl;

R<sup>2</sup> and R<sup>5</sup> are hydrogen, alkyl or -SO<sub>3</sub>X;

R<sup>3</sup> is hydrogen or -SO<sub>3</sub>X;

R<sup>6</sup> is aryl, substituted aryl, O-alkyl or O-aryl; and

X is hydrogen, NH<sub>4</sub> or alkali metal.

9. Proteinaceous fibres and blends thereof whenever treated with a sulfonated s-triazine derivative of formula I or II as defined in claim 1."

II. The refusal of the application for lack of inventive step was communicated to the applicant on EPO Form 2061.1 04.88 with the heading "Decision to refuse a European patent application". It stated, *inter alia*, that the applicant had not commented on the Examining Division's earlier communication of 19 September 1990, but had merely requested by letter received on 19 February 1991 a decision on the basis of the material on the files at that time.

The grounds for this decision were given by an express reference to paragraphs 1, 1.1, 1.2, 1.3 of the said

earlier communication of 19 September 1990, where the reasons for the refusal were set out as follows:

Sulphonated 2-hydroxyphenyl-1,3,5-triazines and their use as light and heat stabilisers for various substrates, e.g. wool and silk, were known from

(1) FR-A-1 494 413

which document was considered to represent the most relevant state of the art. The subject-matter of the pending Claim 1 was said to be distinguished therefrom by the fact that the sulphonic acid group was now attached directly to the aromatic ring in its 5'-position and not to an alkoxy group in the 4'-position.

As no particular advantageous effect was accepted by the Examining Division for the new methods, the problem to be solved was defined as just an alternative method for protecting proteinaceous fibres against photodegradation and thermal degradation. The compounds of document (1) were alleged to be structurally close to those of the application under consideration, since both were sulphonated compounds having identical basic ring structures and, thus, the skilled person would have regarded the compounds of the application in question as something he could make or use.

III. In his Statement of Grounds of Appeal, filed 24 July 1991, the Appellant in essence argued that in view of the distinguishing features acknowledged by the Examining Division the compounds used according to the application under consideration were not structurally

close to but rather structurally distinct from the compounds of citation (1). Furthermore, as already indicated in the application as originally filed (Example 4 on page 13) and confirmed by

(2) Proceedings of the Seventh International Wool Conference, Tokyo 1985, Vol. 4, page 63,

not all compounds which could be designated as sulphonated hydroxyphenyl-1,3,5-triazines exert the desired protective effect on proteinaceous fibres. The Appellant concluded that the subject-matter claimed was a further, non-obvious solution of the underlying technical problem.

Although no formal request was submitted by the Appellant, it is clear to the Board that he wants the disputed decision reversed.

## **Reasons for the Decision**

### *1. Admissibility of the Appeal*

The appeal complies with the requirements of Article 106 to 108 of the EPC, and also with those of Rule 64, in spite of the fact that the Notice of Appeal did not explicitly identify the extent to which amendment or cancellation of the decision under appeal is requested, as required by Rule 64(b).

The content of the decision under appeal is simply the refusal of the then pending sole version of the patent application. Thus, the wording "... we hereby file

Notice of Appeal to the decision ..." has to and can only be construed as a request to entirely set aside the decision under appeal and to grant a patent on the basis of the documents of the European patent application to which the decision under appeal referred. Therefore, the Board concludes, in accordance with the established case law, that the appeal fulfils the requirements of Rule 64 and, hence, is admissible (see e.g. T 0007/81, paragraph 1 of the Reasons for the Decision, OJ EPO 1983, 98, 99; T 0001/88, No. 1.1 of the Reasons for the Decision, not published in the OJ EPO; T 0194/90, No. 1 of the Reasons for the Decision, not published in the OJ EPO).

2. *Novelty*

The subject-matter of the claims is not disclosed in any of the citations on file and is therefore novel. As this issue was never raised by the Examining Division, no further comments are necessary on this issue.

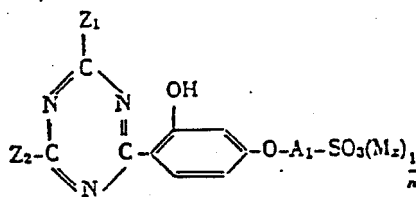
3. *Problem and Solution*

- 3.1 The application relates to a method for protecting wool and other proteinaceous fibrous materials against photodegradation and thermal degradation, e.g. photoyellowing and phototendering (page 1, lines 1 to 3, and page 5, lines 1 to 12).

Methods for protecting proteinaceous fibres against photodegradation are known, e.g. from document (1), which was already cited in the application as originally filed (page 4, line 15) and was the Examining Division's starting point for defining the

technical problem underlying the present application (page 1, line 8 of the communication dated 19 September 1990).

This citation discloses substituted [3-hydroxy-4-(2-triazinyl)-phenoxy]-alkanesulphonic acids and their metal salts of the formula



wherein Z<sub>1</sub> and Z<sub>2</sub> are benzene residues which may comprise halogen atoms, alkyl, alkoxy, hydroxy or phenyl groups ...,  
A<sub>1</sub> is a alkylene group,  
M<sub>x</sub> designates a hydrogen ion ..., or a metal cation ...,  
and  
n designates the cation's valency  
[definitions given only as far as important in the present context],

and the use of these compounds as UV-absorbing agents for the protection of, e.g., proteinaceous fibres such as, *inter alia*, silk (page 1, left-hand column, first paragraph, in combination with the paragraph bridging the columns on page 4, and page 5, left-hand column, line 11 from the bottom).

3.2 While some isolated advantages were alleged for the compounds used according to the present application (page 4, lines 10 to 19), as compared with known

sulphonated 2-hydroxybenzophenones or 2-hydroxy-phenylbenzotriazoles, no particular advantageous effect was eventually relied upon for the method according to the present invention as compared with that known from document (1). Thus, the Board accepts the Examining Division's view that, consequently, the technical problem has to be seen in providing a further method for protecting proteinaceous fibres against photo-degradation.

3.3 According to Claim 1 of the present application it is suggested, as the solution of this problem, to treat the fibres under acidic conditions with the compounds of formula I or II. In view of the examples, demonstrating the protection of wool (Examples 1 to 10) and of silk (Example 12) against phototendering and/or photo-yellowing in simulated sunlight, and the protection of wool against yellowing by heat (Example 11), the Board finds that the existing problem is credibly solved.

4. *Inventive Step*

4.1 It remains to be decided, if the suggested solution is inventive.

4.2 The Examining Division based its finding of obviousness of the claimed method on the fact that it made use of chemical compounds, which were said to be "structurally close" to those disclosed in reference (1) and that, thus, a skilled person could have made or used them.

4.3 First of all, it has to be stated that the issue of inventiveness cannot be decided by considering whether

a skilled person could have done something, but rather whether he would have done it with a reasonable expectation of solving the particular technical problem. The conclusion that a skilled person would have used the compounds I or II in the method of present Claim 1 in view of the disclosure of document (1) rests on the assumption that he would have known that all compounds comprising a 2-(2-hydroxyphenyl)-1,3,5-triazine system and a sulphonate group have more or less the same properties, at least those that are important to solving the existing technical problem and that, therefore, compounds I and II can be used as technical analogues of the compounds known from citation (1). This implies that the legitimacy of conclusions in respect to the properties of chemical compounds based on the consideration of structural features depends on how much is known on the respective technical field about the relationship between structure and properties (see also the decision T 0020/83, No. 5 of the Reasons for the Decision; OJ EPO 1983, 419, 421).

- 4.4 The Appellant emphasised that the compounds I and II, with the sulphonate group being directly linked to the phenyl group, were not structurally close to but were structurally distinct from those of document (1), where the sulphonate group was separated from the phenyl residue by an alkoxy group. He also pointed out that because of these structural differences, which were also conceded by the Examining Division, the skilled person would have expected different resonance characteristics and, thus, different properties for the respective compounds (page 3, first paragraph of the Statement of Grounds of Appeal). Therefore, the

Appellant in effect denied the possibility of any common general knowledge which would have allowed predictions regarding the usefulness of substituted sulphonated 2-(2-hydroxy-phenyl)-1,3,5-triazinyl compounds other than those disclosed in document (1) and in particular of the compounds of formula I and II.

- 4.5 This submission is supported by document (2) giving "Improvement Factors" for a number of substituted sodium 4-hydroxy-3-(2-triazinyl)-benzene-sulphonates. These Improvement Factors are a measure for the lifetime improvement of wool fabric after exposure to simulated sunlight for 2000 hours at 45°C or for 1000 hours at 75°C achieved by treatment with the respective sulphonates. Whereas these Improvement Factors range from 2.2 to 4.4 at 45°C, and from 1.8 to 2.9 at 75°C for compounds which are used according to present Claim 1, they are only 1.0 (i.e. the value of the untreated fabric) at both temperatures for sodium 4-hydroxy-2-methoxy-5-(3,5-diphenoxy-2-triazinyl)-benzene-sulphonate and for sodium 2,4-dihydroxy-5-(3,5-diphenoxy-2-triazinyl)-benzene-sulphonate (compounds XIII and XV in Table 1, which are not to be used according to the method of the present Claim 1).
- 4.6 Such evidence remained unconsidered by the Examining Division for not comprising a comparison with the state of the art. However, it rebuts, in the Board's judgment, the Examining Division's *prima facie* assumption that there existed some common general knowledge, which would have allowed the skilled person to disregard the said structural differences of the respective compounds and to draw valid conclusions regarding the usefulness of substituted sulphonated 2-

(2-hydroxyphenyl)-1,3,5-triazinyl compounds as agents for protecting proteinaceous fibres against photodegradation from the technical teaching of document (1).

4.7 Thus, the Appellant has chosen a particular group of compounds from a host of possible structural alternatives to the compounds known from document (1) and demonstrated that they serve - in contrast to other conceivable substituted 2-(2-hydroxyphenyl)-1,3,5-triazinyl compounds comprising sulphonate groups - as a solution to the existing technical problem. In the absence of any sign post directing to the compounds of formula I and II, their use according to Claim 1 was not obvious over document (1).

4.8 The Board also considered document

(3) EP-A-0 112 120,

which was cited in the Examining Division's first communication, but not referred to in the appealed decision.

This citation relates to the use of substituted 2-(2-hydroxyaryl)-2H-benzotriazolesulphonates for protecting synthetic and natural fibres against phototendering (page 1, lines 4 to 7). These compounds may have the sulphonate group directly linked to the hydroxyaryl group (see compounds I, II, and III on page 5, lines 3 to 14). However, there is nothing available to the Board which would have justified to transfer results obtained with substituted 2-(2-hydroxyaryl)-2H-benzotriazole-sulphonates to substituted 2-(2-

hydroxyphenyl)-1,3,5-triazinesulphonates and to draw any conclusions from the properties of the former in respect to the properties of the latter.

- 4.9 It follows from the above that the subject-matter of the present Claim 1 would not have been obvious to the notional skilled person in the light of the cited documents. Dependent Claims 2 to 8, which refer to preferred embodiments of Claim 1 and Claim 9, which relates to proteinaceous fibres treated according to Claim 1, are based on the same inventive concept and derive their patentability from that of Claim 1.

## **Order**

### **For these reasons, it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a patent with Claims 1 to 9 as published and the description, pages 1 to 28, also as published.

The Registrar:

The Chairman:

E. Görgmaier

A. Jahn