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Datasheet for the decision of 22 January 2024

Case Number: T 0496/21 - 3.3.06

Application Number: 12847646.2

Publication Number: 2776691

IPC: C10L1/22, C10L10/06, C10L1/12, C10L1/182, C10L1/188, C10L1/222

Language of the proceedings: EN

Title of invention:
USE OF A FUEL COMPOSITION

Patent Proprietor:
Afton Chemical Corporation

Opponent:
INNOSPEC LIMITED

Headword:
Fuel + additive composition/Afton

Relevant legal provisions:
RPBA 2020 Art. 13(2)
EPC Art. 83

Keyword:
Amendment after summons - exceptional circumstances (no) - taken into account (no)
Sufficiency of disclosure - enabling disclosure (no)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0496/21 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 22 January 2024

Appellant: (Opponent)	INNOSPEC LIMITED Innospec Manufacturing Park Oil Sites Road Ellesmere Port, Cheshire CH65 4EY (GB)
Representative:	Appleyard Lees IP LLP 15 Clare Road Halifax HX1 2HY (GB)
Respondent: (Patent Proprietor)	Afton Chemical Corporation 500 Spring Street Richmond, Virginia 23219 (US)
Representative:	SSM Sandmair Patentanwälte Rechtsanwalt Partnerschaft mbB Joseph-Wild-Straße 20 81829 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 5 March 2021 rejecting the opposition filed against European patent No. 2776691 pursuant to Article 101(2) EPC.**

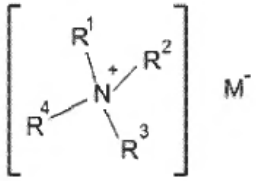
Composition of the Board:

Chairman	J.-M. Schwaller
Members:	R. Elsässer
	C. Heath

Summary of Facts and Submissions

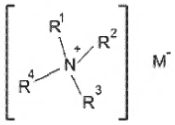
I. The appeal of the opponent lies from the decision of the opposition division to reject the opposition. Independent claims 1 and 7 as granted have the following wording:

"1. Use of a fuel composition to reduce the Long Term Fuel Trim (LTFT) for a direct fuel injected internal combustion gasoline engine wherein the fuel composition comprises: a major amount of fuel and an amount of a quaternary ammonium salt having a thermogravimetric analysis (TGA) weight loss of greater than 50 wt.% at 350 °C when heated from 50 °C to 900 °C at a rate of temperature increase of 20 °C per minute under a nitrogen atmosphere flowing at a rate of 60 ml per minute, wherein the amount of quaternary ammonium salt present in the fuel ranges from 5 to 200 ppm by weight, based on a total weight of fuel and is sufficient to reduce the LTFT by at least 30% in the direct fuel injected engine having combusted said composition compared to the LTFT of said engine having combusted a fuel composition that does not contain said quaternary ammonium salt, as measured by the procedure disclosed in Society of Automotive Engineer (SAE) International publication 2009-01-2641 "Test and Control of Fuel Injector Deposits in Direct Injected Spark Ignition Vehicles", wherein the quaternary ammonium salt comprises a compound of the formula



wherein each of R^1, R^2, R^3, and R^4 is selected from a hydrocarbyl group containing from 1 to 50 carbon atoms, wherein at least one and not more than three of R^1, R^2, R^3, and R^4 is a hydrocarbyl group containing from 1 to 4 carbon atoms and at least one of R^1, R^2, R^3, and R^4 is a hydrocarbyl group containing from 8 to 50 carbon atoms, M^- is selected from the group consisting of carboxylates, nitrates, nitrides, nitrites, polynitrites, phenates, carbamates, carbonates, and mixtures thereof, wherein the carboxylate is not an oxalate."

7. A method of improving the injector performance of a direct fuel injected internal combustion gasoline engine comprising operating a direct fuel injected gasoline engine comprising combusting in the engine a fuel composition comprising a major amount of fuel and from 5 to 200 ppm by weight based on a total weight of the fuel of a quaternary ammonium salt having a thermogravimetric analysis (TGA) weight loss of greater than 50 wt.% at 350° C when heated from 50 °C to 900 °C at a rate of temperature increase of 20 °C per minute under a nitrogen atmosphere flowing at a rate of 60 ml per minute, wherein the amount of quaternary ammonium salt present in the fuel is sufficient to improve the injector performance of the engine to provide a reduction in LTFT of at least 30% as measured by the procedure disclosed in Society of Automotive Engineer (SAE) International publication 2009-01-2641 "Test and Control of Fuel Injector Deposits in Direct Injected Spark Ignition Vehicles"; and, the quaternary ammonium salt comprises a compound of the formula



wherein each of R^1, R^2, R^3, and R^4 is selected from hydrocarbyl groups containing from 1 to 50 carbon atoms, wherein at least one and not more than three of R^1, R^2, R^3, and R^4 is a hydrocarbyl group containing from 1 to 4 carbon atoms and at least one of R^1, R^2, R^3, and R^4 is a hydrocarbyl group containing from 8 to 50 carbon atoms, M^- is selected from the group consisting of carboxylates, nitrates, nitrides, nitrites, hyponitrites, phenates, carbamates, carbonates, and mixtures thereof.

The document referred to in these claims is D10 in these proceedings.

II. With its grounds of appeal, the appellant argued inter alia that the invention was not sufficiently disclosed (Article 100(b) EPC).

III. With its reply, the proprietor (and respondent) filed nine auxiliary requests and argued that the invention was sufficiently disclosed.

IV. With letter dated 16 January 2024, the respondent filed 17 auxiliary requests and new documents labeled **D28** (ASTM D-1319), **D29** (ASTM D-5453), **D30** (ASTM D-86), **D31** (ASTM D-381), **D32** (ASTM D-240) and **D33** (Declaration of Amanda Stone).

V. At the oral proceedings held on 22 January 2024 the final requests of the parties were as follows:

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent requested that the appeal be dismissed, in the auxiliary, that the patent be upheld on the

basis of one of auxiliary requests 1-17, all filed with letter dated 16 January 2024.

Reasons for the Decision

1. Admissibility of documents **D28-D33**

1.1 These documents having been submitted with letter of 16 January 2024, i.e. after the notification of the communication under Article 15(1) RPBA and shortly before the oral proceedings, they, as well as any argumentation based thereon, represent an amendment to the respondent's appeal case which shall in principle not be taken into account, unless there are exceptional circumstances justified by cogent reasons (Article 13(2) RPBA).

1.2 The respondent argued that the ASTM tests **D28-D32** were filed in reaction to an argument presented for the first time by the Board in point 12.1 of its preliminary opinion, namely that a fuel that matches the exact properties set out in table 2 of **D10** could not be obtained. This objection had not been raised before. Rather, the appellant had only argued that the definition was "too broad" in the sense that it included fouling and non-fouling fuels.

1.3 This argument does not convince the board because page 16 of the grounds of appeal already contained the statement that "***D10*** *does not use a commercially available base fuel that can be obtained by any other party than the Patentee*", and further down, in the paragraph bridging page 16 and 17, the appellant pointed out that the fuel of **D18** was not identical to the fuel of **D10** but only "resembles it" because the two fuels differ in the sulfur content. Thus, the argument

that the proprietary base fuel of **D10** is not readily available and that another fuel can only be considered to represent this base fuel if its properties match the "narrow" values disclosed in table 2 thereof is not a new one. Reference can also be made to **D13**, point 15, where it is stated that table 2 details "precisely" the results of seven ASTM tests and that it would be extremely difficult to formulate a fuel having these properties. Therefore, the Board concludes that in essence, the objections set out in point 12.1 of the preliminary opinion do not go beyond the objections made by the appellant.

While it is correct that the appellant also argued that table 2 of **D10** encompassed fouling and non fouling fuels, which corresponds to the objection that the definition of the fuel is "too broad", these two objections are not mutually exclusive, see point 15 of **D13**, and so this does not detract from the fact that the objection of a "too narrow" definition was also already made, see above.

1.4 Furthermore, and irrespective of the reasons set out above, the Board holds that the documents are not to be admitted because of their extreme lateness, since the preliminary opinion was issued on 9 October 2023, i.e. three months before the oral proceedings. So, even if for the sake of the argument, it was assumed that the documents represented a reaction to a new argument, they could and should have been filed earlier than four working days prior to the oral proceedings, in particular in view of the fact that ASTM standards can be obtained without delay. Thus, admitting them at this stage of the proceedings would be unfair to the appellant, and admitting them and postponing the oral

proceedings would be detrimental to procedural economy.

1.5 As to **D33**, this document was filed in response to the argument made in the preliminary opinion that the LTFT shift obtained in the clean-up test of **D10** differed from the one obtained in **D18**. But also this document was filed unacceptably late and is therefore not admitted also. As the decision is moreover not based on this argument (see below) the document is irrelevant.

1.6 It follows from the above considerations that there are no exceptional circumstances, justified by cogent reasons, which would justify taking into account said documents.

2. Article 100(b) EPC

2.1 It is common ground between the parties that the claimed invention is defined by an unusual parameter, namely the LTFT reduction. In such a case, the proprietor is under a particular obligation to disclose all the information necessary to reliably determine the new parameter (Case Law of the Boards of Appeal, 10th edition, II.C.5.5.3), and the respondent accepted at the oral proceedings that the burden of proof that the parameter could be measured without undue burden lies with him. Furthermore, the parties accepted that the LTFT reduction could only be measured reliably if the specific fuel used in **D10** could be readily obtained.

2.2 In this respect, it is noted that according to **D10**, a "proprietary base fuel" was specifically formulated for the purposes of the test and this fuel was as such not commercially available (this was also accepted by the parties). It is true that table 2 discloses seven properties of the "proprietary fuel" but there are

serious doubts based on declaration **D13**, point 15, whether it is possible, without undue burden, to obtain a fuel that matches all seven values. This finding was contested by the respondent who argued that a fuel having the properties set out in table 2 of **D10** could be readily obtained from a custom blender. In fact it can be derived from declaration **D18**, point 9 and appendix A and B, that the respondent had obtained from a vendor a fuel which "resembled" the base fuel of **D10**. However, is is evident from the certificate of analysis (appendix A) that the properties of this "resembling" fuel do not match with the values of **D10**, as the two fuels differ in particular in their aromatics, olefins and sulfur contents and their T90-value. Moreover, unlike **D10**, **D18** does not indicate the heating value of the fuel. One can thus only conclude that the skilled person can obtain a fuel that resembles the proprietary base fuel of **D10** in terms of its properties and that this fuel can also be used to measure LTFT reductions. However, by means of its reference to **D10**, the claim requires that the LTFT reduction be measured using the base fuel of **D10**, and not one that only resembles it. It follows that, since it has not been shown that this base fuel can be obtained without undue burden, there is no evidence that the unusual parameter defining the invention can be reliably reproduced, and so that the invention can be carried out without undue burden.

2.3 The respondent argued that the skilled person could establish via "reverse engineering" whether a fuel was suitable or not, namely by repeating the runs 1 and 2 (table 4) of the patent. If the results obtained corresponded to those reported in the patent, the fuel was suitable to carry out the test. The Board is not convinced by this argument, because first of all, it has not been proven that such reverse engineering works

in this specific case, and secondly, the board is of the opinion that a fuel that does not exactly match the properties of table 2 of **D10** cannot be equated with the proprietary base fuel, regardless of the LTFT-shift it might cause. Therefore, "reverse engineering" does not necessarily enable the skilled person from obtaining a fuel as defined by table 2 of **D10**.

2.4 On a more general note, the respondent pointed out that **D10** is an article in a peer-reviewed journal, but this is irrelevant for the present case, since the requirements for an article to be published in such a journal differ from the patentability requirements under the EPC. In particular, scientific articles have no requirement of enabling disclosure.

2.5 It follows from the above considerations that, since the measurement method set out in **D10** requires a specific proprietary fuel which is not readily available, the claimed invention cannot be carried out without undue burden and so the requirements of sufficiency of disclosure of the invention according to Article 83 EPC are not met.

2.6 This conclusion applies to all requests on file, since they all define the invention by means of the same unusual parameter.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

A. Pinna J.-M. Schwaller

Decision electronically authenticated