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D E C I S I O N
of 4 November 2002

Case Number: T 0717/98 - 3.3.6

Application Number: 91306360.8

Publication Number: 0466512

IPC: C10L 1/30

Language of the proceedings: EN

Title of invention:

Process of operating a spark ignition internal combustion engine.

Patentee:

ETHYL CORPORATION

Opponent:

Mr William C. Orr

Headword:

Reactivity of exhaust products/ETHYL CORPORATION

Relevant legal provisions:

EPC Art. 69(1), 54, 56

Keyword:

"Interpretation of use claim - claim clear on its own wording"
"Novelty of second or further non-medical use - (yes)"
"Inventive step - (yes) The burden of proof lies on the party alleging that experimental evidence is not reliable"

Decisions cited:

T 0416/87, G 0002/88, G 0006/88, T 0254/93, T 0892/94,
T 0219/83

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0717/98 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 4 November 2002

Appellant: Mr William C. Orr
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 18 May 1998
concerning maintenance of European patent
No. 0 466 512 in amended form.

Composition of the Board:

Chairman: P. Krasa
Members: L. Li Voti
C. Holtz

Summary of Facts and Submissions

I. The present appeal is from the interlocutory decision of the Opposition Division to maintain in amended form the European patent No. 0 466 512 relating to the use of a cyclopentadienyl manganese tricarbonyl compound (hereinafter referred to as MMT) in a formulated unleaded gasoline fuel.

Claim 1 of the set of claims found to comply with the requirements of the EPC had the following wording:

"1. Use of at least one cyclopentadienyl manganese tricarbonyl compound in an amount equivalent to up to 1/32 gram of manganese per gallon (3.78 litres) in a formulated lead free gasoline fuel comprising a plurality of hydrocarbons of the gasoline boiling range containing not more than 30 volume percent of aromatics to reduce the reactivity of tailpipe exhaust products produced on combustion of said gasoline in a spark-ignition internal combustion engine."

Dependent claims 2 to 6 related to particular embodiments of the claimed use.

II. In its notice of opposition the Appellant (Opponent) sought revocation of the patent on the grounds of Article 100(a) EPC, in particular because of an alleged lack of novelty and inventive step of the claimed subject-matter, and cited inter alia the following documents:

(2): WO-A-87/01384

(7): G.H.Unzelman: "Reformulated gasolines will challenge product-quality maintenance", Oil and Gas Journal, 09 April 1990, pages 43 to 48.

The Respondent (Patent Proprietor) cited during the written procedure the following document:

(24): SAE Technical Paper series 900710: "A Method for Evaluating the Atmospheric Ozone Impact of Actual Vehicle Emissions" by A. Lowi, Jr. and W.P.L. Carter.

III. In its decision, the Opposition Division found in particular that

- the claimed use was novel over document (2) since this document did not contain any indication that the addition of MMT would result in a decrease of the reactivity of the tailpipe exhaust products;
- as regards inventive step, the comparative test of Example 4 of the patent in suit could not be relied upon since the base fuel used in combination with MMT was different from the base fuel used without the additive; however, Example 3 showed a convincing reduction of the reactivity of the exhaust products in a fuel comprising MMT (MMT fuel) compared to a so-called XY fuel, i.e. a similar fuel without MMT and comprising xylenes to match the octane number of the MMT fuel and butane to match its Reid Vapour Pressure (hereinafter referred to as RVP); this improvement was not to be expected in the light of the teaching of the prior art;

- therefore the claimed use was novel and involved an inventive step.

IV. An appeal was filed against this decision.

The Appellant's arguments in regard to novelty, submitted in writing and during the oral proceedings held before the Board on 04 November 2002, can be summarized as follows:

- document (2) disclosed an unleaded gasoline fuel comprising MMT and corresponding in all features with that used in the patent in suit; this document did not explicitly address the reduction of the reactivity of tailpipe exhaust products; however, MMT was used therein as a catalyst in order to render the combustion products of the fuel more complete and clean and to reduce undesirable emissions; this effect obtained by the use of MMT had to be understood to be the same as that claimed in the patent in suit;
- moreover, the wording of claim 1 was unclear insofar as it did not specify which was the term of comparison for the reduction of reactivity to be achieved and whether this reduction of reactivity had to be observed on the whole of the exhaust products, i.e. not only in regard to the hydrocarbons but in regard to all chemical species present in the exhaust; the claim had thus to be interpreted in the light of page 2, lines 39 to 45 of the description, teaching explicitly that MMT was used in the therein described invention as an anti-knock additive in order to raise the octane quality and reduce the aromatics content of an unleaded fuel, the resulting MMT fuel having a lower maximum reactivity of the hydrocarbon tailpipe emissions than that of a similar fuel

wherein MMT was replaced by aromatics to match the octane number;

- therefore claim 1 related in reality to the known use of MMT as an anti-knock agent in an unleaded gasoline fuel, which had only one possible use in a spark ignition internal combustion engine; any other effect achieved by the use of MMT underlaid this known use;
- therefore, the claimed reduced reactivity of the tailpipe exhaust products had not to be regarded as a new technical feature within the terms of G 2/88 and G 6/88 but just as a feature explaining the effect obtained by the known use of MMT, as similarly decided, for example, in T 254/93 and T 892/94;
- the claimed use was thus anticipated by the use of MMT in document (2).

Both documents (2) and (7) were regarded to be relevant to the issue of inventive step since document (2) suggested the use of MMT as a catalyst for achieving more complete and clean combustion products and reducing undesirable emissions and document (7) suggested the use of MMT as an anti-knock agent for reducing the amount of aromatics in an unleaded fuel (thus for reducing the reactivity of its exhaust products) and taught that MMT had an effect on the composition of the tailpipe exhaust.

As regards the experimental evidence contained in the patent in suit the Appellant submitted that:

- the tests had been run only for 500 or 1000 miles, whilst acceptable tests had to be carried out for at least 5000 miles, which was the point at which

an undesirable increase in the hydrocarbon emissions started to occur as explained on page 28 of document (2);

- the tests concerned only the reduction of the reactivity of hydrocarbons and disregarded the presence in the exhaust products of other gases, which were also responsible for the ground ozone formation;
- there were discrepancies between the Carter reactivity constants used in the patent in suit for calculating the hydrocarbons maximum reactivity and those reported in document (24); the validity of the values calculated in the patent was thus dubious;
- all the comparisons of a MMT fuel with a XY fuel were not relevant since the latter contained more xylenes, which were known to be very reactive compounds;
- Example 4 was unclear since the MMT fuel appeared to have been prepared from a base fuel having a different composition from that used as comparison;
- consequently, the tests could not prove that a reduction of the reactivity of the exhaust products was achieved simply by adding MMT.

Since the reduction of the reactivity of the tailpipe exhaust products had not been proven, the technical problem underlying the patent in suit had to be reformulated as the provision of an anti-knock agent

which would lead to a minor increase of the reactivity of the hydrocarbon emissions than xylenes; the use of MMT for this purpose was, however, obvious in the light of the teaching of document (7).

V. The Respondent argued in writing and during the oral proceedings inter alia that:

- claim 1 of the patent in suit had to be interpreted in the light of the passage on page 2, lines 45 to 49 of the description and related therefore to the reduction of the reactivity of the tailpipe exhaust products as compared to the reactivity of that produced by the same fuel without MMT;
- document (2) regarded only the reduction of the quantity of hydrocarbon emissions in the exhaust and did not contain any teaching in regard to tailpipe exhaust products reactivities; moreover it required the use of a synergistic mixture of MMT with other components in order to achieve the therein described effect;
- there was no known relationship between the octane number or the volatility of a fuel or the total quantity of hydrocarbons in the exhaust products and the reactivity of the tailpipe exhaust, which depended on its composition;
- the reduction of the reactivity of the tailpipe exhaust products had thus to be regarded as a new technical feature within the terms of G 2/88 and G 6/88.

As regards inventive step it submitted inter alia that

- Example 4 of the patent in suit related to a comparison between a base fuel without MMT and the same fuel with added MMT and showed that the claimed effect had been successfully achieved;
- document (2) was not relevant since it did not contain any teaching in regard to tailpipe exhaust products reactivities;
- document (7) suggested the use of MMT only as antiknock agent and suggested the use of different additives for reducing the reactivity of the exhaust products;
- the prior art therefore did not suggest to use MMT as in claim 1 of the patent in suit.

VI. The Appellant requests that the decision of the first instance be set aside and the patent be revoked.

VII. The Respondent requests that the appeal be dismissed.

VIII. At the end of the oral proceedings, the chairman announced the decision of the Board.

Reasons for the decision

1. *Interpretation of claim 1*

1.1 Claim 1 relates to the use of MMT in a formulated unleaded gasoline fuel for reducing the reactivity of tailpipe exhaust products produced on combustion of said gasoline in a spark-ignition internal combustion engine.

In the Appellant's view this wording did not specify which was the term of comparison for the mentioned reduction of the reactivity of tailpipe exhaust products and whether the reduction of reactivity regarded only the hydrocarbons contained in the exhaust or all the reactive species contained therein.

Therefore, it alleged that this claim was unclear and had to be interpreted taking into account the respective parts of the description in accordance with Article 69(1) EPC.

Since the passage on page 2, lines 39 to 45, of the description suggests that MMT was added for improving the octane number of the base fuel while at the same time maintaining or reducing its quantity of aromatics, which fact brought about a lower maximum reactivity than the hydrocarbon emissions of the same fuel wherein MMT was replaced by aromatic hydrocarbons to achieve the same octane quality, and Examples 1 to 3 compared the reactivity of the tailpipe exhaust products in a MMT fuel with that of a similar XY fuel, the claim must be interpreted as relating to the use of MMT as anti-knock agent as specified in the above mentioned passage of the description.

1.2 The Board cannot accept the Appellant's arguments for the following reasons:

1.2.1 It is established case law of the Boards of appeal of the EPO that for judging the novelty or inventive step of an unclear claim, its wording must be interpreted taking into account the respective parts of the description in accordance with Article 69(1) EPC.

Moreover a claim, which is clear on its own wording, might also have to be interpreted in the light of the

description if it does not contain a feature, which is specified in the description to be an overriding requirement of the invention (see T 416/87, OJ EPO 1990, 415, point 5 of the reasons for the decision).

The Board remarks that claim 1 identifies the unleaded fuel to which MMT has to be added in order to achieve the reduction of the reactivity of the tailpipe exhaust, i.e. one having not more than 30% volume aromatics; therefore, the claimed reduction in reactivity must be achieved according to the wording of the claim in regard to this fuel without added MMT.

Finally, since the claim does not specify that the claimed reduction in reactivity should be limited to a specific class of exhaust products and it was not disputed by the Appellant that the skilled person was aware at the priority date of the patent in suit of the chemical identity of the products contained in the tailpipe exhaust, the wording of claim 1 can only be considered to encompass all reactive species in the tailpipe exhaust.

The Board finds therefore that the claim is clear on its own wording and only if the description would indicate other features to be of so overriding importance for the claimed invention so that they must be read into the claim or if the teaching of the description would be contradictory to the wording of the claim, another more consistent interpretation would have to be sought.

- 1.2.2 In the present case, the interpretation of the claim on its own words is in agreement with the passage on page 2, lines 45 to 49, of the description and with the results of Example 4, especially page 16, lines 25 to 27, indicating that the hydrocarbon emissions of a

base fuel with added MMT have substantially lower total maximum reactivities than the hydrocarbon emissions from the same base fuel devoid of the MMT, since the reduction of the reactivity of the hydrocarbons in the exhaust has necessarily an impact on the total reactivity of the exhaust.

The reactivity of the exhaust is in fact determined in the patent in suit by detecting the amount of each emitted hydrocarbon and by calculating the total reactivity of the hydrocarbon species by means of the Carter's reactivity constants (see page 4, lines 16 to 19, 48 to 49 and 53 to 56). This is confirmed by the passage below Table 8 of Example 3 on page 15, lines 31 to 33 of the patent in suit, reading: "...the MMT fuel of this invention produced a substantially less reactive hydrocarbon exhaust and as a consequence, had a lower ground level ozone forming potential."

- 1.2.3 The Board agrees with the Appellant that the passage of page 2, lines 39 to 45 of the description of the patent in suit, suggests that MMT is used as an anti-knock agent for increasing the octane number of a base fuel while reducing the quantity of aromatics and that therefore the reactivity of the exhaust gases of the resulting fuel would be lower compared to that of a similar fuel without MMT but containing aromatics to reach the same octane number of the MMT fuel and that the Examples 1 to 3 compare a MMT fuel with a XY fuel.

However, this is not in contradiction with the passage on lines 45 to 49 of page 2 and Example 4 and only indicates other properties of MMT and of the fuels obtained by the claimed use, which properties, however, like the octane quality of the fuel or the reactivity of the exhaust products as compared to a XY fuel **are not the subject-matter** of claim 1. Therefore the passage on page 2, lines 39 to 45 and Examples 1 to 3

do not call for an interpretation of the claim deviating from or going beyond its wording, which is clear on its own, as explained above under point 1.2.

The Appellant's interpretation of claim 1 has thus to be rejected.

2. *Novelty*

2.1 As regards the novelty of the subject-matter of claim 1 the Appellant submitted that document (2) already disclosed an unleaded gasoline fuel for a spark-ignition internal combustion engine containing up to 1/32 grams per gallon of MMT and up to 30% by volume of aromatic hydrocarbons but it did not contain any explicit disclosure that MMT was used for reducing the reactivity of tailpipe exhaust products.

The Board agrees with this finding (see the Table bridging pages 13 and 14 as well as page 17, lines 3 to 7, 17 to 21 and 30 to 33; page 18, lines 12 to 16; page 26, lines 14 to 18 and page 41, lines 20 to 25 of this document).

However, the Appellant argued that the wording "MMT acts as some form of catalyst... so that the combustion product... is more complete and clean" (page 31, lines 10 to 13 of document (2)) implied that MMT acted in the same way as claimed in the patent in suit or that at least brought about a technical effect having as a consequence a reduction of the reactivity of the tailpipe emissions.

2.2 According to the established jurisprudence of the Boards of Appeal, in a second or further non-medical use of a known compound for achieving a technical effect, the attainment of such a technical effect has

to be considered a functional technical feature of the claim. The claim is thus to be regarded as being novel if this functional technical feature has not been previously made available to the public by any of the means set out in Article 54(2) EPC, e.g. by a prior art document disclosing directly and unambiguously the subject-matter in question when also taking account of everything which would be considered by a skilled person as part of the common general knowledge in connection with the disclosed subject-matter at the publication date of the cited document, even though the technical effect might have inherently taken place in the course of carrying out what had previously been made available to the public (G 2/88, OJ EPO 1990, 093, point 10.3 of the reasons for the decision and G 6/88, OJ EPO 1990, 114, point 9 of the reasons for the decision).

However, if this technical feature, though being undisclosed in the prior art, just contributes to or explains the known effect obtained by the known use of the prior art, the claim cannot be regarded as novel (see T 254/93, OJ EPO 1998, 285, point 4.8 of the reasons for the decision and T 892/94, OJ EPO 2000, 001, points 3.4 and 3.5 of the reasons for the decision).

2.3 The question to be replied in the present case is therefore whether document (2) implicitly teaches that MMT is added for reducing the reactivity of tailpipe exhaust products or that MMT brings about a technical effect causing a consequent reduction of such reactivity.

Document (2) deals mainly with the reduction of the polluting emissions caused by the use of various anti-knock additives in an unleaded fuel. This document explains, for example, that MMT, by causing the

formation of unoxidized or partially oxidized hydrocarbons and of oxides of manganese, leads to a gradual undesirable increase of the emission of hydrocarbons and to the plugging of the exhaust catalyst (see page 2, lines 2 to 5 and 18 to 32; page 11, lines 10 to 16; page 28, lines 31 to 34). Lower molecular weight alcohols cause an increased front end volatility or Reid Vapour Pressure (RVP) and consequently increased evaporative emissions (page 5, lines 16 to 21) as well as the so-called "technical enleanment", i.e. a deviation from the predetermined stoichiometric ratio of air to fuel. Aromatic hydrocarbons cause potentially harmful emissions, tend to increase exhaust emissions such as NO_x, carbon monoxide and hydrocarbons and create driveability problems (page 10, lines 15 to 20; passage bridging pages 23 and 24 and page 31, lines 3 to 6).

This document teaches further to combine MMT with lower molecular weight alcohols and aromatics in specific amounts in order to alleviate and correct the phenomena of increased hydrocarbon emissions, technical enleanment, increased RVP, initial and mid-range distillation depression, high end boiling point temperatures and resultant increases in emissions (page 12, lines 19 to 29; page 13, lines 15 to 19 and page 29, lines 9 to 11).

The Board finds thus that the passage on page 31, lines 10 to 20 of this document reading that "MMT acts as some form of catalyst (in combination with aromatics and lower molecular alcohols)..., so that the combustion product... is more complete and clean, thereby reducing the emissions otherwise associated with the use of aromatic hydrocarbons and MMT", read in the light of the preceding parts of the description mentioned above, means that the addition of MMT together with the other components brings about a

quantitative reduction of the evaporative emissions as well as of the exhaust emissions such as the amount of hydrocarbons in the tailpipe exhaust, but does not contain any teaching in regard to a reduction of the reactivity of the tailpipe exhaust products, i.e. in regard to a modification of the chemical distribution of the reactive species in the exhaust as compared to the same fuel without MMT.

Moreover, the known use of MMT as anti-knock agent for improving the octane number of a fuel, as well as the other technical effects explicitly mentioned in document (2), such as the quantitative reduction of the evaporative emissions and of the exhaust emissions, have no known relationship with the reduction of the reactivity of the exhaust products. The Appellant has not submitted any evidence to the contrary.

- 2.4 Therefore claim 1 regards the use of a known substance (MMT) for producing a reduction of the reactivity of tailpipe exhaust products, i.e. a modification of the distribution of the reactive chemical species in the exhaust as compared to a fuel without MMT, which is a different technical effect from that obtained by the use described in document (2), which is the quantitative reduction of the polluting emissions.

From the above the Board concludes that the present case falls squarely within the ambit of decisions G 2/88 and G 6/88 and that decisions T 254/93 and T 892/94 do not apply.

Therefore, the subject-matter of claim 1 is novel over document (2).

3. *Inventive step*

3.1 Most reasonable starting point and technical problem

3.1.1 Claim 1 of the patent in suit relates to the reduction of the reactivity of tailpipe exhaust products produced on combustion of a formulated unleaded gasoline fuel in a spark-ignition internal combustion engine and thus to the reduction of the fuel potential for ground ozone formation (see page 2, lines 10 to 18).

Document (2), dealing only with the problem of the quantitative reduction of the evaporative emissions as well as of the exhaust emissions and not with the reduction of the reactivity of the tailpipe exhaust products, i.e. with the modification of the chemical distribution of the reactive species in the exhaust, as put forward above under point 2.3, cannot be considered as a suitable starting point for evaluating the inventive step of the claimed subject-matter.

On the contrary, document (7) deals explicitly with the reduction of emissions contributing to ground level ozone formation in reformulated gasolines such as unleaded gasoline fuels (see page 43, middle column, lines 3 to 13 and page 45).

Therefore the Board finds this document to represent a more reasonable starting point for such an evaluation.

3.1.2 Document (7) explains that heavy aromatics like xylenes and especially olefins are the most reactive components found in the evaporative and exhaust emissions of a gasoline and those that mostly contribute to ground-level ozone formation (see page 43, middle column-

lines 20 to 34; page 45, left column-lines 40 to 46, left column-line 58 to middle left column-line 24, middle right column-lines 9 to 11, right column-lines 1 to 16 and 34 to 37, Table 5).

This document teaches that MMT can be used as anti-knock additive in order to lower the level of aromatics (which can also be used for improving the octane number of a fuel), lowers the gasoline volatility and that is able to shift slightly the balance among tailpipe carbon monoxide, nitrogen oxides and hydrocarbons (see page 47, right column, lines 6 to 12 and page 48, middle column-lines 1 to 10).

However, it does not clarify if the use of MMT modifies the composition of the exhaust products so that the resulting composition is less reactive or if the mentioned balance shift among tailpipe carbon monoxide, nitrogen oxides and hydrocarbons have an effect at all upon reactivity.

Finally, this document teaches that tertiary amyl methyl ether (hereinafter referred to as TAME) is able to convert very volatile and reactive olefins into a very low vapour pressure and clean burning ether and thus to reduce this type of tailpipe emissions (page 47, passage bridging middle left and middle right columns).

Therefore the disclosure of this document differs from the claimed subject-matter insofar as it suggests the use of TAME for reducing the reactivity of the tailpipe exhaust products and suggests MMT only as an anti-knock agent and for reducing the volatility of the fuel.

- 3.1.3 The technical problem underlying the patent in suit, seen in the light of document (7), can thus be formulated as the provision of an alternative additive

capable of providing a reduction of the reactivity of the tailpipe emissions, i.e. of providing a composition of the emitted products which is less reactive than that obtained by a fuel without this additive.

3.2 Experimental evidence

- 3.2.1 Example 4 of the patent in suit relates to a comparison "between the maximum total reactivity of the speciated hydrocarbons from the MMT Fuel of Example 1 and the same base fuel with which no additional xylenes or other aromatics were added. In short, this evaluation compared the base fuel of Example 1 with the identical base fuel containing MMT at a concentration of about 1/32 gram of manganese per gallon (3.78 litres)." (page 15, lines 45 to 49).

It is pointed out that the base fuel of Example 1 contains, according to Table 2 (page 9), 28.6% of aromatics and that therefore example 4 represents a use of MMT in accordance with claim 1 of the patent in suit.

This comparison shows that the reactivity of the tailpipe emissions of the "MMT Fuel" is less than that of the "Base Fuel" (see Table 9).

- 3.2.2 The Appellant alleged that such a difference in reactivity appeared to originate rather from the use of two different base fuels than from the addition of MMT to the "Base Fuel".

In this respect it relied on the fact that Table 2 in Example 1, listing the respective compositions of the tested fuels, reported that the "MMT Fuel" had a greater amount of aromatics and a lower amount of olefins than the "Base Fuel". This would imply, in the Appellant's view, that the base fuel from which the MMT

fuel was prepared was not the **tested** base fuel without MMT and that therefore this comparison could not prove that the addition of MMT to a base fuel would result in a reduced reactivity of the tailpipe exhaust products.

The Board cannot accept this argumentation since the second sentence of the passage of Example 4 quoted above in point 3.2.1, as well as the passage of Example 1 on page 8, lines 29 to 36, make it clear that the **same** base fuel was used.

Therefore, the differences in composition between the "MMT Fuel" and the "Base Fuel" can only originate, in the Board's judgement, from the addition of MMT and the results reported in Example 4 are a valid support for the claimed effect of MMT.

This finding is also corroborated by the sentence following Table 9 and reading:

"It can be seen from the data in Table 9 that the MMT Fuel of this invention not only produces less total hydrocarbon tailpipe emissions but even more importantly, the total maximum reactivity of the speciated hydrocarbon emissions from the MMT-fuel vehicle was substantially lower (28% lower) than the speciated hydrocarbon emissions from the clear (manganese-free) base fuel." (page 16, lines 24 to 27).

- 3.2.3 The Appellant, which has in this case the burden of proof for its allegations (see T 219/83, OJ 1986, 211, Corr.OJ 1986, 328, point 12 of the reasons for the decision), has not provided any evidence to that end.

Therefore, the Board has no reason in the present case to distrust the teaching contained in the patent in suit.

3.2.4 The Appellant's other objections raised against the tests and the reactivity constants used for the calculation of the reactivity of the exhaust in the patent in suit (see point IV above) have also not been substantiated by any evidence and cannot thus be accepted by the Board for the same reasons put forward above in point 3.2.3. The Board has in fact no reason to conclude that the comparative tests carried out in the patent would have led to different results if performed on a longer run or by using different reactivity constants or by calculating the maximum reactivity by including, additionally to the hydrocarbons, all other reactive species comprised in the exhaust.

Therefore the Board concludes that the patent in suit has successfully solved the underlying technical problem mentioned above in point 3.1.3.

3.3 Evaluation of inventive step

As explained in point 3.1.2 above, document (7) suggested the use of MMT only for improving the octane number of the fuel and reducing its volatility, which technical effects have no known relationships with the reactivity of the tailpipe emissions as explained in point 2.3 above, and suggested the use of TAME for modifying reactive olefin species.

Document (2) suggested the use of MMT in combination with other components for reducing the quantity of evaporative and tailpipe emissions but not for modifying their reactivity (see point 3.1.1).

Therefore, the skilled person would not have expected in the light of the teaching of the prior art that MMT is able to render less reactive the exhaust of a fuel as compared to the same fuel without MMT.

The Board concludes therefore that the subject-matter of claim 1 involves an inventive step.

The dependent claims 2 to 6 derive their patentability from that of claim 1.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

P. Krasa