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Datasheet for the interlocutory decision of 27 June 2023

Case Number: T 0438/19 - 3.3.03

Application Number: 11830390.8

Publication Number: 2626911

IPC: H01L31/042, C08F210/02, C08K5/541, C08L23/08, C09K3/10, C09D123/08

Language of the proceedings: EN

Title of invention:
SOLAR CELL SEALING MATERIAL, AND SOLAR CELL MODULE

Patent Proprietor:
Mitsui Chemicals, Inc.
Mitsui Chemicals Tohcello, Inc.

Opponent:
Borealis AG

Relevant legal provisions:
RPBA Art. 12(4)
EPC Art. 100(b), 54(2), 112(1)(a)

Keyword:
Document resubmitted with the statement of grounds of appeal - admitted (yes)
Sufficiency of disclosure (yes)
Inventive step
Referral to the Enlarged Board of Appeal

Decisions cited:
G 0002/88, G 0006/88, G 0001/92, G 0007/93, G 0003/14, G 0001/19, T 0206/83, T 0026/85, T 0952/92, T 0977/93, T 0326/01, T 0370/02, T 0946/04, T 1553/06, T 2045/09, T 2458/09, T 0510/10, T 0023/11, T 0877/11, T 0971/11, T 2048/12, T 1833/14, T 0505/15, T 2068/15, T 1452/16, T 1666/16, T 1540/21, High Court of England and Wales TAKEDA UK LTD v F. HOFFMANN-LA ROCHE AG [2019] EWHC 1911

Catchword:
The following questions are referred to the Enlarged Board of Appeal for decision:

1. Is a product put on the market before the date of filing of a European patent application to be excluded from the state of the art within the meaning of Article 54(2) EPC for the sole reason that its composition or internal structure could not be analysed and reproduced without undue burden by the skilled person before that date?

2. If the answer to question 1 is no, is technical information about said product which was made available to the public before the filing date (e.g. by publication of technical brochure, non-patent or patent literature) state of the art within the meaning of Article 54(2) EPC, irrespective of whether the composition or internal structure of the product could be analysed and reproduced without undue burden by the skilled person before that date?

3. If the answer to question 1 is yes or the answer to question 2 is no, which criteria are to be applied in order to determine whether or not the composition or internal structure of the product could be analysed and reproduced without undue burden within the meaning of opinion G 1/92? In particular, is it required that the composition and internal structure of the product be fully analysable and identically reproducible?

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Case Number: T 0438/19 - 3.3.03

I N T E R L O C U T O R Y D E C I S I O N
of Technical Board of Appeal 3.3.03
of 27 June 2023

Appellant: (Opponent)	Borealis AG Trabrennstrasse 6-8 1020 Vienna (AT)
Representative:	Dehns St. Bride's House 10 Salisbury Square London EC4Y 8JD (GB)
Respondent: (Patent Proprietor)	Mitsui Chemicals, Inc. 2-1, Yaesu 2-chome Chuo-ku Tokyo 104-0028 (JP) Mitsui Chemicals Tohcello, Inc. 7, Kanda Mitoshiro-cho Chiyoda-ku Tokyo 101-8485 (JP)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 3 December 2018 rejecting the opposition filed against European patent No. 2626911 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	D. Semino
Members:	F. Rousseau
	A. Bacchin

Summary of Facts and Submissions

I. The appeal lies against the decision of the opposition division rejecting the opposition filed against European patent No. 2 626 911, whose claim 1 reads as follows:

"1. A material suitable as an encapsulating material for solar cell, which comprises an ethylene/α-olefin copolymer which has

(a1) a content of 80-90 mol% of structural units derived from ethylene and 10-20 mol% of structural units derived from C_{3-20}-(α-olefin);

(a2) a MFR of 10-50 g/10 minutes, measured according to ASTM D1238 at 190°C and under a load of 2.16 kg;

(a3) a density of 0.865-0.884 g/cm^3, measured according to ASTM D1505;

(a4) a shore A hardness of 60-85, measured according to ASTM D2240; and

(a6) a content of aluminum element of from 10 to 500 ppm."

An opposition was filed on the grounds of Article 100(a) in conjunction with Article 56 EPC and of Article 100(b) EPC.

II. The opposition proceedings were based among others on the following items of evidence:

D1: WO 2008/036708 A2
D2: WO 2010/114028 A1

D5: ENGAGE™ 8400, Technical Information, Dow, 7 September 2011
D5a: ENGAGE® polyolefin elastomer, Product Information, DuPont Dow Elastomers, February 2004
D12: Analytical Chemistry, Practice Series, Equipment Analysis 4, ICP emission analysis, published by Kyoritsu Shuppan Co. Ltd., 2013, pages 196-205,
D12a: Pages 196-203 of D12, wherein translated passages are highlighted
D12b: Translation of the highlighted passages of D12a
D13: Modern Methods for Trace Element Determination, C. Vandecasteele and C.B. Block, published by Maruzen Co. Ltd., 1995, pages 9-21
D13a: Pages 9-11 of D13, wherein translated passages are highlighted
D13b: Translation of the highlighted passages of D13a
D15: Graph showing the resistivity as a function of the aluminium-content for the synthesis examples of the patent in suit (filed by the proprietor with letter of 6 March 2017)
D16: BS EN 1122:2001 Plastics - Determination of cadmium - Wet deposition method
D18: US 5,986,028

III. The reasons for the contested decision which are pertinent for the appeal proceedings can be summarised as follows:

(a) D16 whose admittance was not disputed was admitted into the proceedings.

(b) D18 related to resins different from those defined in claim 1 of the patent in suit, since it disclosed aluminium levels of catalyst residue in the polyethylene of less than 20 ppm, most preferably of less than 5 ppm, which only

marginally overlapped with that of 10 to 500 ppm defined in claim 1 of the patent in suit. This document was therefore not prima facie relevant and accordingly not admitted into the proceedings.

(c) Regarding sufficiency of disclosure, paragraph 172 of the patent in suit and the common general knowledge taught that a defined mass of material was wet decomposed to measure the aluminium content. D16 referred to the wet decomposition of plastic to determine the content of cadmium, but not that of aluminium. It had not been shown that the use of different acids or of the two methods described in D16 for determining the amount of cadmium would lead to different results when measuring the amount of aluminium. Although the claimed composition could comprise in addition to the aluminium content in the ethylene copolymer further aluminium, this did not have an effect on the determination of the aluminium content in the ethylene copolymer. Furthermore, it belonged to common general knowledge to predetermine the aluminium content of the claimed materials in line with the synthesis examples of the patent in suit. Accordingly, the invention was sufficiently disclosed.

(d) Example 3 of D1 disclosed all the features of claim 1 except the aluminium content. All other available prior art documents were structurally more remote. It was therefore concluded that the product ENGAGE® 8400 described in Example 3 of D1 represented the closest prior art.

Synthetic example 13 of the patent in suit concerned a copolymer having an aluminium content

of 5 ppm. That level was comparable to the content of 4.4 ppm disclosed for ENGAGE® 8400. This example exhibited a very good volume resistivity. The experiments summarised by the patent proprietor in D15 did not demonstrate the criticality of the amount of aluminium defined in claim 1 for providing an improved volume resistivity. The problem solved over D1 was therefore the provision of an alternative encapsulant material for solar cells.

In view of the information provided in paragraphs [0044] and [0045] of the specification, it appeared that the proprietor had realised that an optimised range for the aluminium content existed when taking into account practical and economical constraints. If, as alleged by the opponent, an encapsulation composition had better properties when the aluminium content was lower, it had to be concluded that the skilled person would have rather reduced the amount of aluminium to zero. In addition, it was unreasonable to assume that the skilled person would have increased the aluminium content in example 3 of D1 as this would have either required to add aluminium-ions to ENGAGE® 8400, which was not realistic, or to select a different polymer which did not necessarily satisfy all other requirements of claim 1. It was therefore concluded that the amount of aluminium defined in claim 1 as granted was not obvious to the skilled person.

(e) The opposition was therefore rejected.

IV. An appeal against that decision was lodged by the opponent (appellant). With the statement of grounds of appeal the appellant resubmitted document D18.

V. With the reply to the statement of grounds of appeal, the patent proprietor (respondent) filed auxiliary requests 1 to 5, whose wording is not relevant for the present decision.

VI. In preparation of the oral proceedings, a communication pursuant to Article 15(1) RPBA 2020 conveying the Board's provisional analysis on certain issues relevant to the decision to be taken was issued. While the appellant's objections as to lack of sufficiency of disclosure did not appear convincing, a decision as to whether the subject-matter of granted claim 1 involved an inventive step ultimately depended on the question of whether the (commercially available) product ENGAGE® 8400 had been made available to the public before the effective date of the present patent. Concerning the respondent's submission that the commercial product ENGAGE® 8400 had not been made available to the public within the meaning of Article 54(2) EPC having regard to the rationale of the opinion of the Enlarged Board of Appeal G 1/92 (OJ EPO 1993, 277), the Board indicated that a referral to the Enlarged Board of Appeal might be necessary. An analysis of opinion G 1/92 and its interpretation in various decisions of the Boards of Appeal was given in the communication, as well as proposed questions to be referred to the Enlarged Board of Appeal.

VII. The appellant with a letter dated 12 July 2022, and the respondent in a letter dated 18 August 2022 together with an annex attached thereto, took position on the public availability of ENGAGE® 8400 and the interpretation to be made of opinion G 1/92.

VIII. Oral proceedings were held on 8 September 2022 in the course of which:

- the appellant requested that the decision under appeal be set aside and that the European patent be revoked,

- the respondent requested that the appeal be dismissed, or alternatively that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of any of auxiliary requests 1 to 5 filed with the reply to the statement of grounds of appeal,

- the Board decided to admit document D18 into the appeal proceedings,

- the Board announced the conclusion that the patent fulfilled the requirements of sufficiency of disclosure,

- the question of whether in the present case a decision on inventive step required a referral to the Enlarged Board of Appeal in accordance with Article 112(1)(a) EPC to clarify the application of opinion G 1/92 was discussed.

After closure of the debate on that issue, the Board informed the parties that the proceedings were going to continue in writing.

IX. The parties' submissions, in so far as they are pertinent, may be derived from the reasons for the decision below. Apart from the admittance of D18 and the issue of sufficiency of disclosure relating to the determination of the content of aluminium, the issue in

dispute essentially concerns the interpretation to be made of opinion G 1/92. While the appellant supports a referral to the Enlarged Board in order to clarify how G 1/92 should be applied, the respondent disagrees that there are different reasonable interpretations of opinion G 1/92 which would be decisive for the outcome in the present case.

Reasons for the Decision

Admittance of D18

1. The appellant filed document D18 with letter of 10 September 2018, in preparation of the oral proceedings scheduled before the opposition division, and resubmitted it with the statement of grounds of appeal. The appellant requested that the decision of the opposition division not to admit document D18 into the proceedings be overturned.

1.1 This request is subject to the Board's discretionary power to hold inadmissible facts, evidence and requests which could have been presented or were not admitted in the first instance proceedings (Article 12(4) RPBA 2007, which applies in view of Article 25(2) RPBA 2020). According to the established case law, in particular decision G 7/93 (OJ EPO 1994, 775), point 2.6 of the Reasons, a Board of Appeal should only overturn discretionary decisions of first instance departments if it concludes that the first instance department has not exercised its discretion in accordance to the right principles or it has exercised its discretion in an unreasonable way.

However, even if the opposition division applied the correct criteria in a non-unreasonable way, the Board has nevertheless to independently exercise its own discretion under Article 12(4) RPBA 2007, since the document was resubmitted and its admittance in appeal was requested by the appellant on the basis of additional submissions and changed circumstances. In this context, the Board, following the line adopted in T 971/11 of 4 March 2016, considers that a document which would have been admitted into appeal proceedings if it had been filed for the first time at the outset of those proceedings should not be held inadmissible for the sole reason that it was already filed before the department of first instance (and not admitted) (see point 1.3 of the Reasons).

1.2 In this respect, at the oral proceedings before the opposition division, after the division had decided not to admit D18 into the proceedings, the patent proprietor argued for the first time in the proceedings that example 3 of D1, considered by the opponent to represent the closest prior art, could not be reproduced and hence was not a suitable starting point for assessing inventive step (minutes, page 4, lines 6-10). Referring to point 1.4 of the Reasons for opinion G 1/92 and decision T 23/11 of 13 February 2014, the patent proprietor submitted that the disclosure of said example was not enabling, since D1 did not disclose the polymerisation process resulting in ENGAGE® 8400. The opposition division, however, decided that example 3 of D1 using ENGAGE® 8400 was a suitable starting point for assessing inventive step, without dealing with that argument (Reasons for the decision, page 9, lines 6-16).

In the statement of grounds of appeal, the appellant preemptively dealt with the enablement of the disclosure of example 3 of D1 and submitted that D18 is cross-referenced in the paragraph bridging pages 14 and 15 of D1 as a document describing the preparation of ENGAGE® polymers. D1 describes in said passage that homogeneously branched, substantially linear ethylene/ α-olefin polymers, for which AFFINITY® and ENGAGE® polyethylene available from The Dow Chemical Company are given as examples, are especially preferred and are more fully described in three US patents, one corresponding to reference D18.

Accordingly, the resubmission of document D18 with the statement of grounds of appeal in connection with the argument that this document would demonstrate the enabling character of the disclosure of ENGAGE® 8400 with the consequence that example 3 of D1 can be taken as the closest prior art is a legitimate reaction, at the earliest possible stage, to the new submissions made by the patent proprietor during the oral proceedings after the opposition division had already decided not to admit D18. This, in the Board's view, constitutes a sufficient reason to admit D18 into the proceedings.

1.3 Contrary to the respondent's argument, it could not be expected that the appellant would immediately react to this new and brief submission by requesting anew, during the oral proceedings, to admit D18 into the proceedings. Not allowing at the onset of the appeal proceedings submissions in direct response to this new circumstance and evidence brought forward would be contrary to procedural fairness. In this context the respondent's argument that an objection as to lack of enablement of a disclosure would be nothing out of the

ordinary, is thus irrelevant. The respondent's argument that D18 would not be part of the common general knowledge and cannot demonstrate an enabling character of ENGAGE® 8400 actually pertains to the merits of the discussion and is therefore not relevant for the admittance of D18.

1.4 Under these circumstances, the Board has no reason to make use of its discretionary power under Article 12(4) RPBA 2007 to hold D18 inadmissible. D18 is therefore admitted into the appeal proceedings.

Sufficiency of disclosure

2. According to the established jurisprudence of the Boards of Appeal of the EPO a European patent complies with the requirements of sufficiency of disclosure, if a skilled person, on the basis of the information provided in the patent specification and, if necessary, using common general knowledge, is able to carry out the invention over the whole area claimed without undue burden, i.e. with reasonable effort. This means in the present case to prepare a material that meets the parametric and structural definition of present claim 1, in particular the content of aluminium.

The objection of the appellant concerns the ability of the skilled person to accurately and reliably determine that amount of aluminium in the ethylene/α-olefin copolymer. The appellant argues that, owing to the absence of sufficient information on how to determine that amount, claim 1 lacks sufficiency of disclosure.

2.1 It is undisputed that the presence of aluminium in the ethylene/α-olefin copolymer is taught to find its origin in the use of an organic aluminumoxy compound or

organic aluminium compound added as co-catalyst for the polymerisation of the ethylene/α-olefin copolymer (page 4, lines 12-15 and paragraph 44 of the patent in suit), paragraph 44 describing that the aluminium content is dependent on the concentration of said co-catalyst added during the polymerisation process. It is also uncontested that general guidance for producing the claimed ethylene olefin copolymer is provided in paragraphs 81 to 93 of the patent in suit, including a description of the amount of catalyst and co-catalyst to be used (see paragraphs 86 and 87 of the patent in suit).

2.2 The respondent pointed out in section 51 of their rejoinder that the disputed patent describes several synthesis examples providing a detailed description of catalysts and reaction conditions used for the preparation of the material of claim 1. Indeed, specific preparation methods are described in paragraphs 186 to 198 of the patent in suit for thirteen copolymers for which the feed rates for ethylene, the comonomer, the catalyst and aluminium-based co-catalyst compounds, as well as the amount of aluminium residue in the produced copolymers, are indicated.

Despite the fact that some of the copolymers produced are not in accordance with the present invention, as they do not meet all properties recited in claim 1, these preparation methods nevertheless show how the skilled person wishing to prepare a copolymer comprising an amount of aluminium residue as required by granted claim 1 would adjust the feed rates of ethylene, α-olefin, catalyst and aluminium-based co-catalyst compounds so as to obtain the copolymers defined in claim 1 of the patent in suit.

The appellant did not argue, let alone provide any evidence, that the skilled person, repeating the teaching provided in the patent in suit and using a reasonable amount of experimentation, would not be in the position to obtain the ethylene/α-olefin copolymer meeting the parametric definition of claim 1, including the amount of residual aluminium.

2.3 The appellant's objection that the skilled person is not in a position to perform the invention rather concerns the ability of the skilled person to accurately determine the amount of aluminium in an ethylene/α-olefin copolymer, when aiming at verifying whether the amount of residual aluminium targeted is in accordance with granted claim 1.

It is however not contested that the skilled person would find in paragraph 172 of the patent in suit the relevant teaching for said measurement, according to which the ethylene/α-olefin copolymer is decomposed by a wet process and then diluted with pure water to a given final volume, the amount of aluminium being quantified using a specific spectrometer. It is therefore concluded that the skilled person would find, after performing a few experiments, suitable conditions (particle size of copolymer sample to be analysed, type of acid, concentration, temperature and time) to effectively decompose the ethylene/α-olefin copolymer in order to reliably measure the content of aluminium in a given copolymer sample. Reference is made in this respect to D12 (see D12a and D12b), D13 (see D13a and D13b) and D16, which provide general guidance on how to decompose organic material such as plastics (D12 and D16) for the purpose of determining the content of metal elements comprised therein.

2.4 The argument concerning the difficulty in exactly determining the amount of aluminium in a given ethylene/α-olefin copolymer in the absence of any indication of said specific experimental conditions boils down to the argument that the boundaries of granted claim 1 are not clearly defined. This a matter of clarity, which, in view of the ruling of G 3/14 (OJ EPO 2015, A102), cannot be examined.

The alleged lack of accuracy for the measurement of the content of aluminium residue, however, has not been argued to constitute an obstacle for the skilled person seeking to reproduce the claimed material when using a specific set of conditions for decomposing the ethylene/α-olefin copolymer. The Board has no reason to take a different view. It is observed in this context that Synthesis Examples 2 and 13 of the patent in suit show that copolymers meeting all other requirements of claim 1 can be prepared, even if the amount of aluminium residue is outside the range defined in operative claim 1. This shows that an achievement of the exact amount of aluminium residue defined in granted claim 1 is not critical in order to meet the other parametric requirements of claim 1 when ethylene/α-olefin copolymers are prepared in accordance with the instructions given in the patent in suit.

2.5 The appellant's argument that the amount of aluminium would be the only novel parameter of the present invention or would be critical to its inventiveness has no bearing on the assessment of sufficiency of disclosure, which constitutes a separate requirement of the EPC.

2.6 In view of the above analysis, it is concluded that the subject-matter of the granted patent fulfills the requirements of sufficiency of disclosure.

Inventive step

3. The appellant objects that the claims as granted lack inventive step in view of the disclosure of document D1, particularly its Example 3 with the commercially available product ENGAGE® 8400.

Closest prior art

3.1 In this respect, the appellant submits that ENGAGE® 8400, which is described in D1 in Example 3 (page 30) and Tables 1 and 7 (pages 31 and 39) as being suitable for the manufacture of solar cell modules, represents an appropriate starting point for the present invention and therefore the closest prior art for assessing inventive step. According to the appellant ENGAGE® 8400, an ethylene/1-octene copolymer having an MI of 30 g/10 min and a density of 0.870 g/cm^3, fulfills all the requirements of claim 1, with the exception of the content of aluminium which is indicated to be 4.4 ppm (point 31 of the statement of grounds of appeal). The appellant refers in this respect to the experimental report submitted with the letter of the respondent (then applicant) of 20 February 2015.

3.2 The reproducibility of ENGAGE® 8400 is questioned by the respondent with reference to opinion G 1/92. The respondent accordingly also contests that this product, as described in D1, could be regarded as the closest prior art for the assessment of inventive step.

3.3 The appellant dismisses the respondent's argument that ENGAGE® 8400 is itself somehow insufficient under opinion G 1/92 (point 40 of the statement of grounds of appeal). As submitted at the oral proceedings, the appellant does not accept that the product reproduced should be exactly the same, as this would represent in the present technical field an insurmountable hurdle. According to the appellant, irrespective of the extent in which the ENGAGE® 8400 polymer can be reproduced, certain properties of that material, which are covered by the claimed subject-matter, such as the density, MFR, shore hardness, and comonomer content together with the product itself have been placed in the public domain, as shown by D1, D2 and D5/D5a. It would be incorrect and unreasonable if such publically available information of a commercially available product could be disregarded on the basis that the specific commercial material could not be exactly reproduced.

3.4 While the respondent does not dispute that ENGAGE® 8400 was commercially available and fulfilled all properties of claim 1 as granted, with the exception of the content of aluminium, it argued, relying on paragraph 1.4 of the Reasons for opinion G 1/92 and decision T 23/11, that the commercial product ENGAGE® 8400 had not been made available to the public within the meaning of Article 54(2) EPC.

According to the respondent's submissions based on the above mentioned opinion and decision, the availability to the public within the meaning of Article 54(2) EPC of the commercial product ENGAGE® 8400 would require that the skilled person is able to produce a polymer that it is not somewhat similar to, but is exactly ENGAGE® 8400 and this without undue burden (points 75 to 79 of the rejoinder). The Board notes that this

argument of the respondent also implies that an exact analysis of the commercial product ENGAGE® 8400 can be carried out. The respondent submits that reverse-engineering a commercial polymer without knowledge of the synthesis conditions, in particular the specific catalysts and reaction conditions would require an extensive research programme, for which success is not even guaranteed. The need to perform such a research programme would represent an undue burden (respondent's letter of 18 August 2022, page 3, 4th paragraph), with the consequence that the commercial product ENGAGE® 8400 could not be considered enabled and thus could also not constitute prior art. The respondent is therefore of the view that the closest prior art is the generic disclosure of D1, which is, however, structurally more remote than the examples of D1 using ENGAGE® 8400, as it does not provide any limitation on MFR or Shore A hardness (point 88 of the rejoinder).

4. It follows that in the present case the determination of the closest prior art, which is the first stage of so-called "problem-solution approach" used for an objective and predictable assessment of inventive step (G 1/19, OJ EPO 2021, A77, point 26 of the Reasons), depends on the application of opinion G 1/92.

5. However, as shown in detail below, diverging approaches by the Boards of Appeal exist with regard to the application of opinion G 1/92. In addition, in line with the appellant's submissions during the oral proceedings and in letter dated 12 July 2022, the determination of which features of ENGAGE® 8400 can be considered to be known to the skilled person, either by analysis or through indications in documents which have been published before the filing date of the patent in

suit, is also dependent on the application of opinion G 1/92.

For the reasons set out in detail below, the Board therefore considers it necessary to seek clarification by the Enlarged Board of Appeal of the questions referred to in the Order of the present decision (Article 112(1)(a) EPC).

Reasons for the referral to the Enlarged Board of Appeal

6. Under Article 112(1)(a) EPC, the board of appeal shall, during proceedings on a case and either of its own motion or following a request from a party to the appeal, refer specific questions of law to the Enlarged Board of Appeal if it considers that a decision of the Enlarged Board is required in order to ensure a uniform application of the law or it considers that clarification of the referred questions concerns a point of law of fundamental importance.

As to the **admissibility** of a referral, it is generally considered necessary that the decision of the Enlarged Board on the questions referred to it be decisive for the outcome of the referral case.

7. With regard to the present case, the appellant only raised objections under Article 100(b) EPC and Article 100(a) in conjunction with Article 56 EPC against the patent as granted. After acknowledging sufficiency of disclosure (see point 2. and following above), the sole issue to be decided upon for the main request is thus the appellant's objection of lack of inventive step, based on the product ENGAGE® 8400, described in example 3 of document D1, as the closest prior art. As indicated above, clarification regarding the

application of G 1/92, particularly as to the extent to which the commercial product ENGAGE® 8400 must be reproducible by the skilled person in order to constitute prior art within the meaning of Article 54(2) EPC, appears decisive for assessing inventive step of claim 1 as granted. Since the Board follows the appellant's argument that the product ENGAGE® 8400, if acknowledged as prior art, is likely to prejudice inventive step of claim 1 as granted, also on account of D18, which it admitted into the appeal proceedings (see point 1.4 above) and which teaches a level of aluminium overlapping with the range defined in claim 1 as granted, the question to be clarified is essential for the outcome of the present case.

The Board further notes that the question at stake is of considerable practical relevance, rather than merely theoretical, as it potentially arises whenever the assessment of prior art involves the possibility to analyse and reproduce the chemical composition of a commercially available product. The Board therefore finds that the requirements of Article 112(1)(a) EPC are met.

Opinion G 1/92

8. Opinion G 1/92 concerns the interpretation of the requirement "made available to the public" referred to in Article 54(2) EPC in relation to the prior use of a product (point 1.1 of the Reasons for the opinion). In line with the absence of a distinction in the EPC, the opinion concerns any product such as chemical products and mechanical or electrical articles. The conclusion and the corresponding headnote of the opinion read:

"*1. The chemical composition of a product is state of the art when the product as such is available to the public and can be analysed and reproduced by the skilled person, irrespective of whether or not particular reasons can be identified for analysing the composition.*

2. The same principle applies mutatis mutandis to any other product."

8.1 Paragraph 1.4 of the Reasons for the opinion reads: "*An essential purpose of any technical teaching is to enable the person skilled in the art to manufacture or use a given product by applying such teaching. Where such teaching results from a product put on the market, the person skilled in the art will have to rely on his general technical knowledge to gather all information enabling him to prepare the said product. Where it is possible for the skilled person to discover the composition or the internal structure of the product and to reproduce it without undue burden, then both the product and its composition or internal structure become state of the art*".

8.2 Having regard to the meaning of the expression "the state of the art" used in Article 54(2) EPC, the last sentence of paragraph 1.4 of the Reasons for the opinion G 1/92 could appear to indicate that a product put on the market becomes state of the art and therefore available to the public only when the composition or internal structure of the product can be discovered and reproduced without undue burden. The reproducibility of the product as a criterion for its availability to the public also appears in the first sentence of paragraph 2.1 of the Reasons for the opinion, in which it was held that taking into account

any particular reasons for the public to identify the composition or internal structure of a product put on the market "*would remove a commercially available and reproducible product from the public domain*".

8.3 The question, however, arises whether the exclusion of a product put on the market as regard to its availability to the public within the meaning of Article 54(2) EPC could have been meant by the Enlarged Board, since the precondition of the analysis of said product as appearing in the conclusion of G 1/92 is that "the product as such is available to the public".

This would also appear to be in contradiction with the statement of the Enlarged Board in point 10 and point 8 of the Reasons for decisions G 2/88 and G 6/88 (OJ 1990, 93 and 114), respectively, regarding the meaning of the term "available" when defining what constitutes the state of the art in accordance with Article 54(2) EPC.

8.4 Article 54(2) EPC reads: "*The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.*"

As highlighted in the first paragraph of point 2.1 of the Reasons of T 952/92 (OJ 1995, 755) dealing with the interpretation of opinion G 1/92, the Enlarged Board stressed in decisions G 2/88 and G 6/88 that the word "available" within the meaning of Article 54(2) EPC carried with it the idea that, for lack of novelty to be found, all the technical features of the claimed invention in combination must have been communicated to the public, or laid open for inspection.

8.5 The mere fact that a product was put on the market would therefore appear to result in that product being laid open for inspection (and therefore "available"), which obviously constitutes a logical requirement or precondition for analysing the product in accordance with the requirements indicated in opinion G 1/92, as reflected in point 1 of the conclusion of the opinion and the corresponding headnote by the wording "*when the product as such is available to the public*".

8.6 The respondent submits that the condition "*when the product as such is available to the public*" defined in the headnote of opinion G 1/92 is meant to define "when the product is accessible to a member of the public", so that an analysis and attempt of reproduction can be performed (see items 9 and 12 of the annex to the respondent's letter of 18 August 2022). Following that reading, no possible contradiction would be present between the headnote and paragraph 1.4 of the Reasons.

8.6.1 The respondent's view is based on a passage of point 6.5.4 of the Reasons of decision T 1553/06 of 12 March 2012, quoting point 2.1 of the Reasons for T 952/92. This passage reads: "*whatever the means of disclosure (written description, oral description, use, etc.), availability in the sense of Article 54(2) EPC involves two separate stages: availability of the means of disclosure, and availability of information which is accessible and derivable from such means.*"

8.6.2 Accordingly, the respondent is of the view that opinion G 1/92 should be interpreted as to stipulate three essential criteria for a product to become "available to the public" in the sense of Article 54(2) EPC (see

item 14 of the annex to the respondent's letter of 18 August 2022):

1. a member of the public is able to access the product;
2. a skilled person must be able to analyse the composition or internal structure (i.e. must be able to access the information that is inherent to the product); and
3. a skilled person must be able to reproduce the product based on common knowledge and without undue burden, as only then it represents a complete technical teaching.

8.6.3 Regarding the first criterion, the respondent submits that access by the public of the product, i.e. availability for an analysis, is similar to the availability of a written document to the public from which information can be gained.

The Board can follow the respondent's position in that the possibility of a direct and unambiguous access to some particular means of disclosure, in the present case a commercial product, is a logical precedent to its analysability.

8.6.4 Concerning the third criterion, the respondent generally refers to the section of the Case Law of the Boards of Appeal of the EPO in its 9th version which has the title "Reproducibility of the content of the disclosure" and which is to be found under the same numbering I.C.4.11 in its 10th edition of 2022 (in the following "Case Law"). The respondent specifically refers to decision T 206/83 (OJ EPO 1987, 5).

9. It may indeed be useful for the purpose of better understanding the enablement criterion set out in opinion G 1/92 and its implications concerning the assessment of patentability to consider the existing case law of the Boards of Appeal of the EPO at the date of the opinion concerning enablement of a disclosure in relation to patentability requirements. The decisions which are relevant in this respect and which address the meaning of "available to the public" are T 206/83 cited by the respondent, as well as T 26/85 (OJ 1990, 22).

9.1 The Board stated in section 2 of the Reasons for decision T 206/83 that "*...a compound defined by its chemical structure can only be regarded as being disclosed in a particular document if it has been "made available to the public" in the sense of Article 54(2) EPC.*" The Board added in the same section that "*This need for an enabling disclosure not only applies to documents cited under Article 54(2) and (3) EPC but is also in conformity with the principle expressed in Article 83 EPC for patent applications which must, accordingly, "disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art" (emphasis added). The requirements as to the sufficiency of disclosure are, therefore, stated to be identical in all these instances.*"

It was concluded in T 206/83 that the compounds described in a prior art document cited under Article 54(3) EPC and which were alleged to be novelty destroying were not effectively disclosed in view of the insufficiency of the disclosure (points 11 and 12 of the Reasons).

9.2 In T 26/85 the Board held in point 8 of the Reasons that the wording in Article 54 EPC "*an invention shall be considered to be new if it does not form part of the state of the art*" which "*shall be held to comprise everything made available to the public by means of a written ... description ...*" was not to be interpreted to apply only to the means of disclosure (e.g. the written description). It should equally apply "*to the content, in the sense that anything comprised in the state of the art can only be regarded as having been made available to the public in so far as the information given to the person skilled in the art is sufficient to enable him to practice the technical teaching which is the subject of the disclosure, taking into account also the general knowledge in the field to be expected of him*".

9.3 These two decisions therefore convey the idea that the enablement of a disclosure is a necessary condition for this disclosure to have been made available to the public within the meaning of Article 54(2) EPC. In other words, a disclosure which is not enabling would not be comprised in the state of the art defined in Article 54(2) EPC. This appears also to be the rationale underlying the reasoning of the Enlarged Board in point 1.4 of the Reasons for opinion G 1/92.

Meaning of "available to the public" according to the Travaux Préparatoires to the EPC

10. In order to understand the legislative intent underlying the expression "available to the public", it appears helpful to consult the historical documentation related to the genesis of Article 54 EPC, whose parts mentioned below have been identified as particularly relevant.

10.1 Proceedings of the 1st meeting of the Patents Working Party held at Brussels from 17 to 28 April 1961 (LT 234/82, Section 5, IV/2767/61-E)

According to the minutes of the meeting on 18 April 1961 in which Article 14 of the Preliminary Draft concerning novelty was discussed (page 12, second paragraph), *"the Working Party decided to adopt the wording "available to the public". The word "available" emphasised the possibility of taking note of the invention."* According to the third paragraph on the same page, *"the Chairman stated that an invention was only disclosed if, by virtue of the disclosure, a person skilled in the art could carry out the invention. It did not seem necessary for this principle to be expressly stated in the Convention. If the matter made available to the public did not allow the invention to be carried out, the invention remained novel."*

The Working Party instructed the Drafting Committee to draw up the text of paragraphs 1 and 2 of Article 14 in accordance with the results of the discussions (page 12, fifth paragraph of the document). The text of paragraphs 1 and 2 of Article 14 defining novelty was adopted in the meeting of 20 April 1961 (page 47). Its wording on page 5 of document IV/2498/1/61-E is essentially the same as that of Article 54(2) EPC. It reads:

"*(1) An invention shall be considered to be new if it does not form part of the state of the art.*

(2) The state of the art shall comprise everything made available to the public before the date of filing of

the European patent application, by means of a written or oral description, by use or in any other way."

That text of the Working Party is the same (apart from a reordering of the wording in paragraph (2)) as that comprised in the Preliminary Draft Convention for a European System for the Grant of Patents (BR/6/69, page 19).

10.2 Proceedings of the 5th meeting of the Patents Working Party held at Brussels from 2 to 18 April 1962 (LT 234/82, Section 4, 3076/IV/62-E)

The relevant passages of that document are the last paragraph of page 141 and the three first paragraphs of page 142 which read:

"*Regarding paragraph 2 of Article 14, Mr. Fressonnet drew attention to the French proposal which specified that the prior art had to be made available in a manner adequate to enable a skilled person to produce the subject-matter of the publication.*

Mr. van Benthem pointed out that that proposed wording amounted to a change of substance. The condition proposed by Mr. Fressonnet was to be found in the Netherlands law and in practice it was a very strict criterion. Very often the descriptions given in patent applications were not sufficient to carry out the inventions. If the French wording were adopted, such prior applications and patents could not be regarded as forming part of the state of the art. Furthermore, there were also purely theoretical publications which could not technically be carried out directly. They were, however, still part of the state of the art.

Mr. Fressonnet said that it was not the intention of the French delegation to change the substance of Article 14(2). He therefore agreed with the majority of the Working Party.

Article 14 was adopted without any change beyond those agreed on earlier."

10.3 Proceedings of the 10th meeting of the Patents Working Party held at Brussels from 16 to 27 September 1963 (LT 234/82, Section 11, 9081/IV/63-E)

The relevant part of that document is to be found on page 66 (highlighting by the Board). It reads:

"AIPPI wanted formal proof to be required of the content and date of oral disclosure.

UNICE felt that a general description of an inventive idea should not destroy its novelty and proposed the following wording: "the state of the art shall be held to comprise everything made available to the public, in a manner sufficient to enable the invention to be carried out ... ". Finally UNION would like the term "public" to be defined.

The views of the Austrian Government were similar to those of UNION.

The Chairman summarised the problems regarding paragraph 2:

1. Additional evidence is wanted in connection with oral disclosure.
2. Further definition is wanted of the description.

3. Further definition of the word "public" is also wanted.

Regarding the first problem, the Working Party was unanimous that there was no need for specific evidence regarding oral disclosure.

The question could safely be left to the courts which were used to such evidence.

The Working Party also rejected the second suggestion. It preferred the current, more objective wording."

10.4 Based on the above documents relating to the genesis of Article 54 EPC, it would therefore appear that the expression "available to the public" in Article 54(2) EPC was intended to express the possibility of the public to take note of the prior art, i.e. the accessibility to the public of the prior art, without any requirement as to its enablement. The requirement to reproduce the product without undue burden in section 1.4 of the Reasons of opinion G 1/92 would appear to go beyond the intended meaning of "available to the public" in Article 54(2) EPC.

10.5 This could be seen to imply that any element of the composition or internal structure of a product put on the market which can be discovered by the skilled person per analysis is state of the art within the meaning of Article 54(2) EPC, irrespective of the reproducibility of the product by the skilled person.

Diverging applications of opinion G 1/92 in the case law and relevance for the present case

11. In the case law of the Boards of Appeal, diverging approaches have been adopted in applying opinion G 1/92. The present Board has identified divergent decisions with regard to the following aspects:

(i) interpretation of "available to the public" leading to the exclusion from the state of the art within the meaning of Article 54(2) EPC of the *product* itself (including its chemical composition/internal structure) or only of its chemical composition/internal structure,

(ii) the degree of detail required for the analysis of said product and

(iii) the requirements for its reproducibility.

As shown below, a proper application of opinion G 1/92 in relation to these three aspects is essential for the present case.

(i) Exclusion of the state of the art

12. The Boards have reached diverging conclusions when it was found that the product put on the market could not be analysed or reproduced, deciding either that (a) its chemical composition (or internal structure) was not state of the art (T 946/04 of 2 March 2006, point 3.31 of the Reasons; T 1666/16 of 23 January 2020, point 11 of the Reasons), i.e. adopting the wording of the conclusion of opinion of G 1/92, or that (b) the product itself was not state of the art, thus including

its chemical composition or internal structure (T 370/02 of 14 December 2006, point 8.8 of the Reasons; T 2045/09 of 14 May 2014, points 29 to 39 of the Reasons; T 1833/14 of 7 December 2017, points 1.9 and 1.10 of the Reasons; T 23/11, point 2.5 of the Reasons) based on the wording in point 1.4 of the Reasons for opinion G 1/92.

12.1 While the difference may seem of theoretical interest at first sight, it may lead in practice to significantly different conclusions. As a direct example related to the present case, if in application of opinion G 1/92 a product is not state of the art pursuant to Article 54(2) EPC, that product cannot be used as starting point for assessing inventive step.

If the conclusion is only that its composition is not state of the art, but the product itself is still state of the art as commercially available, it could be used as a starting point for the assessment of inventive step, should technical information about that product reported in documents of the state of the art, including its potential uses and advantages, make it of particular interest for the skilled person. This is the case in the present appeal, as the commercial product ENGAGE® 8400 is shown in the examples of D1 to be suitable for the same purpose as the present invention, namely as an encapsulating material for solar cells and solar cell modules.

12.2 The mere fact that the chemical composition of a product proposed as starting point for assessing inventive step would not be state of the art, for example because it could not be fully analysed or exactly reproduced, does not necessarily mean that a different claimed composition which solves a particular

problem over said commercial product is necessarily inventive. This rather depends on the peculiarities of the case at issue. This would be particularly relevant in a situation like the present one in which leaflets for a sold product are available providing information on it, which would already be sufficient for comparing the product with the subject-matter claimed, without further analysis of the product's exact composition. It is undisputed in the present case that the leaflets available for ENGAGE® 8400 do not disclose the aluminium content of that product, but that they demonstrate that said commercial product fulfills all the other requirements of claim 1.

12.3 Accordingly, as shown in the present case and also illustrated by certain decisions of the Boards (T 505/15 of 11 July 2017, points 2 to 3.1 of the Reasons; T 2458/09 of 30 June 2014, point 6.1 of the Reasons) the question of applying opinion G 1/92 in order to assess the availability of the chemical composition of a product put on the market in relation to inventive step issues, in particular to decide whether said product could constitute the closest prior art, is not only theoretical.

(ii) and (iii) Analysability and reproducibility

13. Concerning the ability to analyse and reproduce a commercial product such as ENGAGE® 8400 which is a polyolefin it is important to bear in mind, as outlined by the respondent in point 78 of their rejoinder that "*a polymer is a complex material and a mixture of different molecules of different weights and structures that interact with each other in certain ways*".

13.1 Indeed like many other synthetic polymers, polyolefins exhibit complex molecular structures. They do not consist of a single molecular compound whose composition and structure can be easily determined and defined, but, at a molecular level, of a complex mixture of heterogeneous polymeric chains, e.g. in terms of molar mass, the incorporation of the comonomer between the chains and within the chains, branching and stereoregularity. At a larger scale, the definition of the polymer includes other aspects such as the orientation of the various polymeric chains which fill the available space and entangle. This is the reason why polyolefins, although their monomers are composed of only carbon and hydrogen atoms, have a complex three dimensional structure. For these reasons, polyolefins are usually defined in terms of various properties and statistical parameters at a macroscopical level which relate to their structure.

13.2 A decision on the ability of the skilled person to reproduce a product put on the market (as a condition according to the Headnote of G 1/92), which one could understand as the ability to reproduce it identically, in the sense that the product put on the market and that reproduced are indistinguishable for the skilled person, would not only require an assessment of the level of detail or type of characterisation required for analysing a given product, but also a definition of the degree of variance which can be accepted in order to qualify the product reproduced to be identical to that put on the market.

13.2.1 In this respect, the difficulty in fully defining a polyolefin would reside in the apparent absence of a generally recognised definition in the art of what would constitute a comprehensive analysis of such a

type of polymer. While the assessment of whether a product falls within the ambit of what is claimed is based on an objectively defined reference, i.e. the combination of features claimed, assessing whether a commercial product has been reproduced would necessitate first a definition of that product which would appear to be dependent on deliberate choices concerning the aspects of the composition or structure to be analysed and the level of identity required.

13.2.2 Accordingly, if the assessment of whether a product put on the market and its chemical composition/internal structure belong to the state of the art within the meaning of Article 54(2) EPC were made dependent on the possibility to exactly replicate that product, this assessment would appear to entail, at least in the present field, the use of subjective criteria, resulting in legal uncertainty when novelty and inventive step need to be examined in the light of said product. It is however clear from opinion G 1/92 that the Enlarged Board, for reasons of legal certainty, did not wish to provide a definition of the state of the art which would result in a subjective assessment of novelty (see last sentence of point 2.1 of the Reasons for the opinion). There is also no apparent reason why this should be different when the ability to analyse and reproduce a commercial product becomes critical for assessing inventive step, e.g. when said product is proposed as the closest prior art.

13.2.3 Taking into account that the Enlarged Board stated that the same principle should apply *mutatis mutandis* to any other product, this would be also pertinent for example for mechanical or electrical products made of a large amount of various components. Should the analysis in that case be confined to some structural elements? To

what extent? Should the analysis comprise the chemical composition of those components and to what extent? Should this be required even if some of these characteristics are not relevant for the subject-matter under examination? These questions constitute only examples illustrating the difficulty in appreciating the level of information needed for the analysis and the reproduction of a product put on the market in order to apply what could seemingly appear to be a criterion for assessing whether the product or its chemical composition/internal structure become state of the art (i.e. is available to the public within the meaning of Article 54(2) EPC).

14. The Boards have taken diverging views regarding the degree of analysis required for a commercial product to determine its composition or internal structure in the sense of opinion G 1/92. Whereas some Boards took as a criterion the exact composition of the product, in other decisions such a strict condition was not required.

14.1 In T 946/04 (points 3.8.3, 3.8.4 and 3.9 of the Reasons) the Board required that the exact composition of the sold product be determinable, i.e. that a complete analysis had been carried out. This was considered to be in line with the requirements set out in G 1/92.

In T 2068/15 of 25 January 2017 (points 2.6 to 2.6.4 of the Reasons), the Board considered that the condition of analysability of G 1/92 was met as the skilled person at the priority date of the patent would have been able to determine the exact composition of the product sold.

Novelty was denied in T 877/11 of 30 September 2014 (points 2.4 and 2.5 of the Reasons) on the ground that a detailed and precise analysis regarding the composition of the commercial product could indeed be carried out without difficulty in order to determine at least the main components of that product.

14.2 Instead, in decision T 952/92 (point 4.4 of the Reasons) the Board, also relying on opinion G 1/92, took the view that a complete analysis of a product put on the market was not required to take away the novelty of the claimed subject-matter, but that it was sufficient to inform a person skilled in the art that the product had a composition falling within the terms of the claimed subject-matter.

This approach was also followed in T 1452/16 of 20 September 2017 (points 4.4 and 4.5 of the Reasons).

In T 2048/12 of 19 January 2016 (point 2.4.3 of the Reasons) it was held that opinion G 1/92 did not imply that the commercial availability of a chemical product as such necessarily amounted to a disclosure of (also) all the impurities contained therein without being mentioned in the context of the product's commercialisation, let alone of their respective relative amounts, merely because it was possible to identify and quantify these impurities by analytical means.

In decision T 2458/09 (point 6.1 of the Reasons, last but one paragraph) in which the commercial product Omnic® had been taken as closest prior art (see above point 13.3), it was held that the absence of certainty about the knowledge of some structural elements of Omnic® did not disqualify that product as the closest

prior art. The skilled person would take the information that had been made publicly available when selecting a particular prior art as starting point. This was the case for the publicly available commercial product Omnic®, and it would have also been the case if the disclosure was in a written prior-art document. It was held that these findings were not in contradiction with the principles set out in Enlarged Board of Appeal opinion G 1/92 and applied in decision T 952/92.

15. The situation is similar with regard to the reproducibility condition. Whereas some Boards have taken as a criterion the ability to exactly reproduce the product, in other decisions such a strict condition has not been required.

15.1 In T 977/93 (OJ 2001, 84, points 11.1 to 13 of the Reasons) the reproducibility condition according to opinion G 1/92 was considered not met as it was impossible to establish the identity of the reproduced vaccine with the starting vaccine.

In T 1833/14 (points 1.4 to 1.7 of the Reasons), when analysing whether the reproducibility condition in opinion G 1/92 had been met, the Board stated that the relevant question was whether or not the skilled person would have been in the position to prepare the product as such, i.e. a sample identical to the product of the prior use in all its properties and not only in those specified in the relevant claim.

15.2 The need for a complete analysis, so as to enable an exact reproduction of the product in question, was instead not considered necessary in T 952/92. In a detailed analysis of opinion G 1/92, the Board firstly stated in point 2.1 of the Reasons that *"the disclosure*

of a product which has been used is the information that a skilled person can learn from it, either visually or by analysis for example". It then added in point 2.2 of the Reasons that *"it is the fact that direct and unambiguous access to information concerning the composition or internal structure of a prior used product is possible, for example by means of analysis, which makes such composition or internal structure "available to the public" and thus part of the state of the art for the purpose of Article 54(2) EPC"* and concluded in the last paragraph of point 2.3 of the Reasons that "*The novelty of a claimed invention is destroyed by the prior use of a product, for example, sale of a product, if an analysis of a product using available analytical techniques is such as to inform the skilled person of an embodiment of the product which falls within the claim of the patent"* thereby not accepting *"the patent proprietor's submissions to the effect that a complete analysis of a prior used product must be possible, so as to enable an exact reproduction of such product, in order to destroy the novelty of the claimed product*."

In T 1540/21 of 23 February 2023 (points 3.8.5 to 3.8.9 of the Reasons) the Board, following T 952/92, considered that the reproducibility condition in opinion G 1/92 did not require a full reproduction of the product in question.

In T 1452/16 (point 4.5 of the Reasons) the reproducibility addressed was that of the combination of features of the claim under consideration which had been identified (analysed) to be present in the commercial product.

15.3 In other decisions some Boards relying on opinion G 1/92 have considered that a product put on the market was novelty destroying or represented the closest prior art without explicitly addressing or only partially addressing its reproducibility.

In T 510/10 of 17 April 2012 (point 2.3 to 2.7 of the Reasons) and T 326/01 of 23 November 2005 (points 4 to 6 of the Reasons), it was considered in the Reasons whether the features defined in the claim could be identified in the commercial product by analysis, which had been contested by the patentee. There is no indication as to whether the patentee also contested the reproducibility of the product, whether that condition was implicitly considered to be met or whether it did not play any role in the Board's reasoning.

In T 877/11 (points 2.4 and 2.5 of the Reasons) it was held that a detailed and precise analysis regarding the composition of the chewing gum Nicotinell® could indeed be carried out without difficulty in order to determine at least the main components of the chewing gum. Reproducibility was mentioned as a precondition, but not addressed in any detail.

In decision T 2458/09 (point 6.1 of the Reasons) in which the commercial product Omnic® had been taken as the closest prior art, the reproducibility of the commercial product was not addressed.

16. The existence of diverging interpretations of opinion G 1/92 can also be illustrated by reference to the decision of the High Court of England and Wales TAKEDA UK LTD v F. HOFFMANN-LA ROCHE AG [2019] EWHC 1911, in particular its sections 119 to 135. The Court

considered that the correct approach to read opinion G 1/92 regarding the question of how exact the reproduction of the product must be, was that, as long as the information the skilled person could obtain by analysing the product enabled the skilled person to produce a version of the product anticipating the claim, it would lack novelty (see in particular points 122, 130 and 193). The fact that other characteristics of a product could not be determined or reproduced did not mean that no information about the product (composition) at all had been put into the state of the art by the prior use (point 125). This was particularly valid if the feature which could not be reproduced had nothing to do with the invention (point 126). The Court not only identified the divergent approaches in the EPO case law, but clearly considered the one interpreting G 1/92 as requiring that for a product to be state of the art the skilled person would have to be in the position to prepare the product as such, in all its properties (not only those specified in the claimed subject-matter), as going beyond the spirit of G 1/92 (point 124).

17. A similar conclusion is drawn in some literature, which considers the approach of the "full reproducibility" of the marketed product (as endorsed for instance in T 977/93 and T 1833/14) as not mandatorily required by G 1/92 (see Moufang in *Schulte, Patentgesetz mit EPÜ*, 11. Auflage, § 3 Rn 56, footnote 172). It is observed that following this approach a patent applicant would have the possibility of obtaining patent protection for a product despite this having being on the market for a long time. Commercially available products should not become subsequently object of patent protection.

18. On the basis of the analysis in above points 14 to 17, the Board cannot follow the respondent's submission (points 43 to 51 of the annex to their letter of 18 August 2022) that no divergence would be present in the case law regarding the reproducibility condition, this condition requiring the ability to exactly reproduce the product in question.

Additional considerations

19. The respondent addressed in point 54 of the annex to their letter of 18 August 2022 (page 18) the situation of a commercial product whose production would require know-how that the manufacturer willingly kept secret resulting in said product not being enabled without that information. According to the respondent, considering in this case said product to be comprised in the state of the art under Article 54(2) EPC would result in an inventor to be deprived of their just reward for their contribution to the art which resides in disclosing to the public how the commercial product can actually be prepared. This touches upon the points addressed in the historical documentation related to the genesis of Article 54 EPC which are mentioned in above points 10 to 10.5. The question would arise in this case whether the just reward for the inventor's contribution to the art would be the product itself or the process for the manufacture of the product.

20. In order to counter the position of the respondent and illustrate the case at hand, the appellant referred to the recipe for Coca Cola known to be secret. In the hypothetical situation of a claim merely defining a caramel color containing fizzy drink, could Coca Cola which undoubtedly falls within such definition, not be seen to anticipate such subject-matter? Could it be

said that it is not state of the art that Coca Cola contains water, carbon dioxide and caramel color?

21. The submissions of the parties on the issue underline the need to resolve the diverging views identified above regarding what is available to the public and the conditions of analysability and reproducibility. In answering the relevant questions it has to be taken into account that, other than in the case of a paper invention for which the product itself cannot be materialised, if the invention lacks enablement, a commercial product has come into existence and is accessible to the public for use and analysis.

22. As an additional aspect, it appears of relevance to note that partial properties or structural information of a product put on the market are frequently reported in documentation such as technical leaflets, patents or scientific journals published before the relevant filing date. Comprehensive information about the composition or internal structure of those products is *de facto* never provided in said documentation. There is no apparent reason why such partial information about products put on the market reported in said literature without any information as to the reproducibility of said product, which information might even be the result of a partial analysis of said product performed by the authors of the publication, should be treated differently from any information which could be gained from a partial analysis of the same commercial product.

23. An application of opinion G 1/92 requiring a full analysis of the product and its reproducibility without burden would have the consequence that the information about a characteristic of a commercial polymer which can be easily determined, e.g. its density or comonomer

content, would be excluded from the state of the art, if it was not demonstrated that the product itself can be analysed and reproduced without undue burden, although this information might already have been made available to the public before the filing date by standard analysis or through product leaflets or patents.

23.1 The respondent submits in this respect that such public information found for example in datasheets should not be treated differently and therefore should not be considered for the assessment of novelty and inventive step if the commercial product cannot be exactly reproduced. The appellant does not share this view and considers that it would be wrong for measurable or disclosed features of a known material to be considered invisible to the skilled person on the basis that they are measured or disclosed in connection with a commercial material whose specific preparation is a secret.

23.2 This question is of particular relevance for the present appeal, as partial information about ENGAGE® 8400, which reflects its structure and composition and which is relevant for the features of the present claim 1, i.e. melt flow rate, density, Shore A hardness and octene content, is described in D1, D2 and D5/D5a (point 30 of the statement of grounds of appeal and point 85 of the rejoinder).

Conclusion

24. From the above, it can be seen that opinion G 1/92 has given rise to diverging interpretations by the Boards of Appeal over the past 30 years, leading to legal uncertainties when it comes to assessing what

constitutes state of the art within the meaning of Article 54(2) EPC in relation to a commercially available product. This results in the need to refer a number of questions to the Enlarged Board of Appeal, both to ensure uniform application of the law and because points of law of fundamental importance have arisen. A decision as to under which conditions for a product put on the market before the filing date, as is the case for ENGAGE® 8400, the product itself and partial information about its composition published prior to the filing date is state of the art within the meaning of Article 54(2) EPC is relevant to the present case, as the possibility to use such a product in the analysis of inventive step is decisive to determine the outcome of the case. In addition, the diverging interpretations made of G 1/92 are of considerable practical relevance in a large number of cases as illustrated by the various decisions mentioned above, and a mere theoretical importance is excluded.

Order

For these reasons it is decided that:

The following questions are referred to the Enlarged Board of Appeal for decision:

1. Is a product put on the market before the date of filing of a European patent application to be excluded from the state of the art within the meaning of Article 54(2) EPC for the sole reason that its composition or internal structure could not be analysed and reproduced without undue burden by the skilled person before that date?

2. If the answer to question 1 is no, is technical information about said product which was made available to the public before the filing date (e.g. by publication of technical brochure, non-patent or patent literature) state of the art within the meaning of Article 54(2) EPC, irrespective of whether the composition or internal structure of the product could be analysed and reproduced without undue burden by the skilled person before that date?

3. If the answer to question 1 is yes or the answer to question 2 is no, which criteria are to be applied in order to determine whether or not the composition or internal structure of the product could be analysed and reproduced without undue burden within the meaning of opinion G 1/92? In particular, is it required that the composition and internal structure of the product be fully analysable and identically reproducible?

The Registrar: The Chairman:

D. Hampe D. Semino

Decision electronically authenticated