

**FEDERAL COURT OF AUSTRALIA**

LEE, HEEREY AND LEHANE JJ

**THE COURT:**

**Nature and history of proceedings**

1           These appeals concern a patent for liquid compositions used in refrigeration. The patent is Australian Patent No 638710. The respondent in each appeal (Lubrizol) is the patentee. The priority date (subject to questions arising as a result of an amendment of the patent) is 25 April 1989.

2           The proceeding giving rise to the first appeal was commenced by the present appellant (ICI). ICI sought, by its application filed on 14 March 1997, a declaration that certain threats contained in letters written on behalf of Lubrizol were unjustifiable, an injunction to restrain Lubrizol from continuing the threats, damages and an order that the patent be revoked. That latter order was sought on the basis of a number of alleged grounds of invalidity. Those which remain in contest are want of novelty, obviousness, false suggestion and lack of fair basis.

3           In the second proceeding, Lubrizol sought injunctions to restrain the present appellants (Woolworths, Austral, Woolworths (Victoria) and Lawrence) from infringing the patent and damages or an account of profits. By cross-claim, the appellants sought an order revoking the patent on the same grounds as those relied upon by ICI in the first proceeding. The two proceedings were heard together.

4           Lubrizol accepted that claim 1 and claims 4 to 9 inclusive of the patent had been anticipated and therefore could not be supported. The primary judge held that the remaining claims were novel and not obvious and that allegations that the claimed invention was not a “manner of manufacture” and lacked utility, and that the patent had been obtained on a false suggestion or representation, were not made out. (The “manner of manufacture” ground was expressly abandoned on the appeals, and no argument was addressed to the allegation of

inutility.) His Honour held, however, that the otherwise valid claims were not fairly based on the matter described in the specification; but he directed that the patent be amended so as to omit the invalid claims, consequentially and formally to amend the remaining claims and to amend the body of the specification so that it would not include matter extending beyond the substance of the remaining claims. As a result, ICI's claim in the first proceeding was dismissed, as was the cross-claim of Woolworths, Woolworths (Victoria), Austral and Lawrence in the second proceeding. In the second proceeding, his Honour held that Lubrizol had established infringement of a number of the remaining claims and granted injunctive relief. He made directions for the trial of Lubrizol's claim for damages or, in the alternative, an account of profits.

5           The primary judge delivered his reasons in four parts. In the first, delivered on 31 March 1999 (the March reasons) and reported at (1999) 45 IPR 577, he found that all the alleged grounds of invalidity, except lack of fair basis, had not been established, leaving for further consideration the question of amendment; he also held that Woolworths, Woolworths (Victoria), Austral and Lawrence had infringed the patent, assuming validity. In the second part, delivered on 20 May 1999 (the May reasons) and reported at (1999) 45 IPR 617, his Honour gave further consideration to the question of fair basis, and affirmed his earlier decision on that question. On 15 October 1999 (the October reasons), the primary judge gave reasons for his conclusion that Lubrizol was entitled to an order that the patent be amended so as to delete the claims which were not novel and to narrow the specification so as to cure the want of fair basis. Finally, on 5 November 1999, his Honour gave reasons, having regard to the conclusions reached in his earlier judgments, for making the orders from which the appellants now appeal (the November reasons, reported at (1999) 47 IPR 110).

6           To the extent necessary, the primary judge granted leave to the present appellants to appeal against the orders, in each proceeding, giving effect to the conclusion that the patent should be amended and should not be revoked, to Woolworths, Woolworths (Victoria), Austral and Lawrence in the second proceeding to appeal against the orders consequent on his Honour's finding of infringement, and to Lubrizol in each proceeding to appeal against the orders resulting from the finding that, without amendment, the remaining claims were not fairly based on the matter appearing in the body of the specification. The various parties have appealed and cross-appealed accordingly.

## Refrigeration, refrigerants and lubricants

7            Refrigeration involves a transfer of heat. A refrigerant is contained within what is described as a refrigeration loop. Liquid refrigerant, under pressure, is released into an evaporator, where, now under low pressure, it boils, absorbing heat from the space to be refrigerated. In the course of that process, the liquid refrigerant is entirely evaporated. It is drawn into a compressor in which it is both compressed and further heated. Thence it passes through tubing to a condenser. There, still under pressure, it loses heat through the walls of the condenser, condensing into liquid. It is then piped once more to the evaporator. The process continues so long as the compressor operates. In general terms, that is the way in which both refrigerators, domestic and industrial, and air-conditioning systems (including those installed in motor vehicles) work.

8            The compressor requires lubrication in order both to protect its moving parts (particularly bearings) against excessive wear and to provide an effective seal, particularly between the piston and the cylinder in which the refrigerant is compressed. Stationary refrigeration systems are charged with refrigerant and the sump of the compressor is filled with lubricant. Quantities of lubricant are, however, unavoidably caught up, or entrained, in the refrigerant as it passes through the compressor. In automotive air-conditioners, refrigerant and lubricant are intentionally mixed and effective lubrication depends on an adequate amount of lubricant being returned to the compressor. In both stationary and automotive systems, efficient operation depends on compatibility between refrigerant and lubricant. Compatibility generally requires that one be soluble in, or miscible with, the other.

9            For many years, chlorofluorocarbons (CFCs) have been used as refrigerants. It has long been recognised also that certain hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) were effective refrigerants. A molecule of each of those classes of refrigerants may be described as a hydrocarbon molecule (that is, a molecule containing only carbon and hydrogen atoms) in which some or all of the hydrogen atoms have been replaced with a halogen atom which is either chlorine or fluorine (halogens are the elements fluorine, chlorine, bromine, iodine and astatine). So, for example, a trichlorofluoromethane molecule is made up of a carbon atom, a fluorine atom and three chlorine atoms. Three of the hydrogen atoms of methane ( $\text{CH}_4$ ) have been replaced by chlorine atoms and the remaining hydrogen atom by a fluorine atom. Hence trichlorofluoromethane is a CFC. Similarly, a

difluoromonochloromethane molecule contains a carbon atom, two fluorine atoms, one chlorine atom and one remaining hydrogen atom. It is an HCFC. A molecule of 1,1,1,2 – tetrafluoroethane contains two carbon atoms, four fluorine atoms and two hydrogen atoms: four of the hydrogen atoms of a molecule of ethane ( $C_2H_6$ ) have been replaced by fluorine atoms.

10 Refrigerants are classified according to a numbering system. The system is based on a three digit number, XYZ, where Z is the number of fluorine atoms in a molecule, Y is one more than the number of hydrogen atoms and X is one less than the number of carbon atoms. X is omitted if there is only one carbon atom. Customarily, the prefix “R-” precedes the number. Sometimes the word “Freon”, which means refrigerant, is used in place of that prefix. Sometimes CFC, HCFC or HFC, as the case may be, replaces it. Thus trichlorofluoromethane is R-11 (or Freon 11 or CFC 11); difluoromonochloromethane is R-22 (or Freon 22 or HCFC 22); 1,1,1,2-tetrafluoroethane is R-134a (or Freon 134a or HFC 134a). The use of a letter following the number (as in R-134a) distinguishes molecules which contain the same numbers of the same atoms but have different structures. Thus the difference between R-134 and R-134a is a difference in molecular structure, not a difference in the types or numbers of atoms contained in a molecule.

11 Until the late 1980s, the most commonly used refrigerants were CFCs. They were effective, generally regarded as safe and readily miscible with mineral oils. It had for some time been recognised, however, that CFCs had a detrimental effect on the ozone layer of the earth’s stratosphere. Concern about the continuing use of the CFCs led to the Montreal Protocol on Substances that Deplete the Ozone Layer (the Montreal Protocol) which was opened for signature in September 1987. The Montreal Protocol provided for the phasing out of the use of CFCs. It did not initially restrict the use of HCFCs, the ozone depletion potential (ODP) of which is much lower than that of CFCs. There was, however, a recognition that (as occurred some years later) ultimately the use of HCFCs was likely to be phased out as well. HFCs, the ODP of which was zero, thus appeared as the candidate for general use as a refrigerant, replacing CFCs and HCFCs as well.

12 The broad classes of lubricants used in refrigeration systems are mineral oils and synthetic oils. Mineral oils were used with CFCs and with some HCFCs. They are readily available, safe, easily handled and effective as lubricants. They are readily compatible with

CFCs in general and the widely used refrigerants, R-11 and dichlorodifluoromethane (R-12), in particular. They are not, however, miscible with HFCs, particularly R-134a, which is widely recognised as a likely candidate to replace CFCs and HCFCs. Thus, if R-134a were to be used in refrigeration, a compatible synthetic oil had to be found. A number of classes of synthetic lubricants were available. They included synthetic hydrocarbons, alkylbenzenes, esters such as dibasic acid esters, polyol esters (a class which included neopentyl esters), phosphate esters, silicate esters and polyalkyleneglycols (known as “PAGs”). In 1987, when the Montreal Protocol was opened for signature, a synthetic oil had not been identified which both was compatible with R-134a and worked satisfactorily as a lubricant in refrigeration systems. It was, of course, important, if R-134a was to live up to its promise, that a compatible and suitable lubricant be available. The evidence before the primary judge indicated that the most pressing concern was to find a lubricant which would work with R-134a in automotive engineering. There was evidence particularly that the three large American motor vehicle manufacturers, General Motors, Ford and Chrysler, were actively engaged, with potential suppliers, in the search.

### **Lubrizol’s researches**

13 Lubrizol is an American corporation which manufactures and sells lubricants and lubricant additives. In late May 1988, General Motors sought Lubrizol’s help in finding a lubricant to work with HFCs, particularly R-134a, in motor vehicle air-conditioners. The research task was given to Dr Scott Jolley, a research chemist employed by Lubrizol. Dr Jolley is the inventor named in the patent. He began his research in early June 1988. It will be necessary later to consider in more detail the course of his research. For present purposes, it is sufficient to record that the research led Dr Jolley to identify certain polyol esters as suitable lubricants. His discovery led, in early 1989, to the making of an application for the United States patent on which the Australian patent is based and from which it derives its priority date.

### **The patent**

14 The patent describes the field of the invention as follows:

*“This invention relates to liquid compositions comprising a major amount of at least one fluorine-containing hydrocarbon, and a minor amount of at least one lubricant. More particularly, the invention relates to liquid compositions useful as refrigeration liquids.”*

Under the heading “Background of the Invention”, the specification proceeds to describe the effect of CFCs on the ozone layer and the consequent requirement to replace them with HCFCs or HFCs. The problem to be overcome was that the mineral oils used with CFCs were unsuitable for use with HCFCs or HFCs. What was needed was described as follows:

*“In order to perform as a satisfactory refrigeration liquid, the mixture of refrigerant and lubricant must be compatible and stable over a wide temperature range such as from about 0°C and above 80 °C. It is generally desirable for the lubricants to be soluble in the refrigerant at concentrations of about 5 to 15% over a temperature range of from – 40 °C to 80 °C. These temperatures generally correspond to the working temperatures of an automobile air-conditioning compressor. In addition to thermal stability, the refrigeration liquids must have acceptable viscosity characteristics which are retained even at high temperatures, and the refrigeration liquid should not have a detrimental effect on materials used as seals in the compressors.”*

15 After a discussion of certain prior art, the invention is summarised as follows:

*“ A liquid composition is described which comprises*

*(A) a major amount of at least one fluorine containing hydrocarbon containing one or two carbon atoms; and*

*(B) a minor amount of at least one soluble organic lubricant comprising at least one carboxylic ester of a polyhydroxy compound containing at least 2 hydroxy groups and characterised by the general formula*



*wherein R is a hydrocarbyl group, each R<sup>1</sup> is independently hydrogen, a straight chain lower hydrocarbyl group, a branched chain hydrocarbyl group, or a straight chain hydrocarbyl group containing from 8 to about 22 carbon atoms provided that at least one R<sup>1</sup> group is hydrogen, a lower straight chain hydrocarbyl or a branched chain hydrocarbyl group, or a carboxylic acid or carboxylic acid ester-containing hydrocarbyl group, and n is at least 2.*

*Liquid compositions also are described wherein the fluorine-containing hydrocarbons also contain other halogen such as chlorine. The liquid compositions are useful particularly as refrigeration liquids in refrigerators and air-conditioners including auto, home and industrial air-conditioners.”*

16 Under the heading “Description of the Preferred Embodiments”, the specification proceeds to define a number of terms and to provide numerous examples. Among the more significant definitions is that of the term “lower” as used, for example, in relation to

hydrocarbyl groups: a lower hydrocarbyl group is one which contains no more than seven carbon atoms. It is also made clear that the fluorine-containing hydrocarbon “may contain other halogens such as chlorine” (that is, it may be either an HFC or and HCFC). A number of examples is given within each of those classes.

17 The carboxylic ester lubricants are described as reaction products of one or more carboxylic acids (or lower esters thereof) with polyhydroxy compounds (or alcohols) containing at least two hydroxy groups. The class of polyhydroxy compounds is wide indeed. It is represented by the general formula  $R(OH)_n$ , R being a hydrocarbyl group containing “from 4 to about 20 or more carbon atoms” and n being at least two. The specification says that:

*“The number of carbon atoms and number of hydroxy groups contained in the polyhydroxy compound used to form the carboxylic esters may vary over a wide range, and it is only necessary the carboxylic ester produced with the polyhydroxy compounds be soluble in the fluorine-containing hydrocarbon (A).”*

18 The carboxylic acids to be used are described as follows:

*“The carboxylic acids utilized in the preparation of the carboxylic esters useful in the liquid compositions of the present invention may be characterized by the following general formula*



*wherein  $R^1$  is (a) [H, (b)] a straight chain lower hydrocarbyl group, (c) a branched chain hydrocarbyl group, or (d) a mixture of one or both of (b) and (c) with a straight chain hydrocarbyl group containing from about 8 to about 22 carbon atoms or (e) a carboxylic acid- or carboxylic acid ester-containing hydrocarbyl group. Stated otherwise, at least one  $R^1$  group in the ester of Formula I must contain a lower straight chain hydrocarbyl group or a branched chain hydrocarbyl group. The straight chain lower hydrocarbyl group ( $R^1$ ) contains from 1 to about 7 carbon atoms, and in a preferred embodiment, contains from 1 to about 5 carbon atoms. The branched chain hydrocarbyl group may contain any number of carbon atoms and will generally contain from 4 to about 20 carbon atoms.”*

19 A series of embodiments or types of the carboxylic acids is then described. Various ways are described of reacting the acids with the alcohols. A series of examples follows. The method of solubility testing is then described, and some examples are given.

20 Finally, there are statements of what, in the liquid compositions of the invention, are “major” and “minor” amounts respectively, an inclusive list of additives which may be included to enhance the performance of the liquids and illustrative examples of the liquid compositions.

21 That brings us to the claims. Claim 1 is in the same terms as the summary of the invention which we have already quoted, except that the word “about” has been omitted from the description of “a straight chain hydrocarbonyl group containing from 8 to about 22 carbon atoms”. That claim, as we have mentioned, is conceded to have been anticipated by the United States Patent, Williamitis (1957) (the Williamitis patent), which we will consider in some detail when dealing with the issue of novelty. The Williamitis patent certainly anticipates a liquid composition comprising HCFCs and lubricants of the patent (the primary judge held that it did not also disclose a composition comprising an HFC and such a lubricant). Claim 1 includes in component (A) HCFCs as well as HFCs and for that reason the claim was anticipated. Claims 4 to 9 inclusive are dependent on claim 1 and in each case component (A) is an HCFC: thus, they are conceded, like claim 1, to have been anticipated. Claim 2 is for the composition of claim 1 “wherein fluorine is the only halogen in the fluorine-containing hydrocarbon (A)”: that is, it is limited to HFCs. Claim 3 is for the composition of claim 1 “wherein the fluorine-containing hydrocarbon (A) is 1,1,1,2-tetrafluoroethane”: that is, it is limited to a particular HFC, R-134a. Claim 10 mirrors claim 2 except that “a major amount” becomes “from 70 to 99% by weight” and “a minor amount” “from 1 to 30% by weight”. Similarly, claim 18 mirrors claim 3, with the same substitution. Claims 11 to 17 and 19 to 26 are narrower claims within the territory marked out by claim 10 and claim 18 respectively. Nothing turns on the detail of those claims.

### **Applicable statutory regime**

22 The patent was granted under the *Patents Act 1952* (Cth) (the 1952 Act). The 1952 Act has been repealed and the legislation now in force is the *Patents Act 1990* (Cth) (the 1990 Act). Section 233 of the 1990 Act provides:

“233(1) *Subject to this Chapter and the Regulations, this Act applies in relation to a standard patent or a petty patent granted under the 1952 Act as if the patent had been granted under this Act.*

...



(4) *Objection cannot be taken to a patent mentioned in subsection (1), and such a patent is not invalid, so far as the invention is claimed in any claim, on any ground that would not have been available against the patent under the 1952 Act.”*

23 It follows that the patent can only be revoked under the 1990 Act, and only on a ground of invalidity which is provided by that Act and would also have been available under the 1952 Act. And where the ground of invalidity under the 1952 Act is narrower than the corresponding ground under the 1990 Act, the patentee has the benefit of the narrower ground. That follows from the decision of the Full Court in *N V Philips Gloeilampenfabrieken v Mirabella International Pty Ltd* (1993) 44 FCR 239 at 253, 254.

24 It follows from s 233(1) of the 1990 Act that that Act applies to questions relating to infringement.

### **Novelty**

25 The appellants' case on novelty relied on alleged anticipation by the Williamitis patent, either by itself or in combination with the earlier United States Patent, Midgley (1931) (the Midgley patent).

26 The Williamitis patent disclosed a “working fluid” for a refrigeration apparatus consisting of refrigerant and lubricant. His Honour found that some of the lubricants in the patent in suit were disclosed in the Williamitis patent. However, his Honour held that the Williamitis patent (either by itself or in combination with the Midgley patent) did not disclose the use of those lubricants in combination with HFC refrigerants. In his Honour's words, the patent in suit

*“involves the engineering of the boundaries of a class of lubricants which will work with the new generation of refrigerants being HFCs generally and R-134a particularly. That problem is simply not addressed in the Williamitis Patent.”*

### **(a) Alleged anticipations**

27 In the specification of the Williamitis patent, one of the stated objects of the invention is the provision of a working fluid for a refrigeration apparatus “which includes a fluoro halo substituted aliphatic hydrocarbon refrigerant ... and a lubricant comprising an organic acid

ester of pentaerythritol". The refrigerant "preferably comprises a fluoro halo derivative of an aliphatic hydrocarbon of the character disclosed in the patent to Midgley ... as, for example, trichlorofluoromethane (Freon 11), dichlorodifluoromethane (Freon 12) and particularly difluoromonochloromethane (Freon 22)". In current terminology these substances, as we have mentioned, are referred to as R-11, R-12 and R-22. The first two are CFCs. R-22 is an HCFC.

28           The specification notes problems that have been encountered with mineral oil lubricants when used at very low temperatures with R-12 or at any temperature with R-22. It says that a combination of properties which to a high degree meet the requirements of a refrigeration system lubricant exist in a class of compounds broadly described as organic acid esters of pentaerythritol. After detailing the chemical composition of these compounds, the specification records solubility tests of the lubricant of the invention compared with two conventional commercial mineral oil lubricants (described as oils A and B). The refrigerant used was R-22. The specification then notes tests of the thermal and chemical stability of the two mineral oils and the lubricant of the invention, again with the refrigerant R-22. The results of the latter tests are expressed in terms of "Refrigerant decomposed in milligrams of released chlorine" and shows

Oil A	100 to 385 in various tests
Oil B	35
Pentaerythritol ester	7.5

29           After reference to some other tests, six claims of combinations of refrigerant and lubricant are made. All include a nominated refrigerant, none of which is an HFC.

30           The Midgley patent claims processes of (and involved in) refrigeration, using as refrigerants a wide variety of halo fluoro derivatives of aliphatic hydrocarbons. It discloses the replacing of hydrogen by fluorine or other halogen, or both, in aliphatic hydrocarbons in which at least one hydrogen atom has already been replaced by a fluorine atom. It discusses the characteristics, relevant to the refrigeration process, of a number of such compounds, some of which are CFCs, some HCFCs and others HFCs, one of which is R-134a.

**(b) Reasoning of the primary judge on novelty**

31 His Honour rejected the appellants' argument that any disclosure made in the Williamitis patent must be read by a skilled addressee as at 24 April 1989, the priority date of the patent in suit. As at that date, the addressee would understand that "fluoro halo substituted aliphatic hydrocarbon" included R-134a. His Honour said:

*"71. It was not suggested that there had been any change in the meaning of the term ['fluoro halo substituted aliphatic hydrocarbon'] since the publication of the Williamitis Patent but only that any disclosure made in the Williamitis Patent must be read by a skilled addressee as at 24 April 1989. The contention appears to entail the proposition that, even if the claim under attack would have been novel if first disclosed at the time of the publication of the alleged anticipating document, it was not novel at the time of its actual disclosure, simply because the hypothetical skilled addressee would know more in 1989 than in 1957. Such a proposition appears to me to blur the distinction between lack of novelty and obviousness. Common general knowledge is clearly an expanding, or at least variable, universe. Something, which might be obvious in 1989 may not have been obvious in 1957 because common general knowledge has expanded during the intervening time. On the other hand, ICI's proposition appears to entail the notion that the prior art base might expand or at least be varied."*

32 His Honour then made this finding as to the meaning of "fluoro halo":

*"72. The expression 'fluoro halo' when used in the Williamitis Patent must be read in its immediate context. That context is to state, in very general terms, an object of the invention rather than to define specifically or expose the elements of the invention. The term did not have a completely fixed meaning in chemical usage either in 1957 or 1989. At its broadest, the term may refer to a hydrocarbon where fluorine is substituted for one of the hydrogen atoms and then a further halogen (whether fluorine, chlorine, bromine, etc.) is substituted for a further hydrogen atom. In a narrower sense, as illustrated in the examples and claims of the Williamitis Patent, the term may refer to fluorine plus a halogen other than fluorine, which would usually be chlorine, substituting for the hydrogen."*

33 Proceeding from that finding (which was not attacked on appeal), his Honour observed that the Williamitis patent did not state that the lubricants disclosed by it would work with every compound which fell within the widest meaning of "fluoro halo". The balance of the specification confirmed that the invention was suitable for use with R-22, an HCFC, and with HCFCs generally. But there was no assertion that the lubricants would work

with any one HFC or with all HFCs, whether R-134a or otherwise. The specification gave three examples of refrigerants, R-11 and R-12 (CFCs) and “particularly” R-22 (an HCFC). The Williamitis patent discussed the solubility of ester lubricants compared with traditional mineral oil lubricants. The refrigerant chosen for this comparison was R-22 because solution of lubricant oil in it was more difficult than in other refrigerants. There was no mention of the solubility of the lubricants with R-134a or with any other HFC.

34 His Honour then noted that, in comparing the stability of a lubricant of its invention with the two mineral oils, the Williamitis patent assesses the results in terms of decomposition in quantities of released chlorine. Thus no stability test is propounded which is applicable to an HFC, which of course contains no chlorine.

35 As to tests generally, the Williamitis patent does not refer to any tests of its lubricants with any HFCs. It provides no reasoning, as a matter of chemistry, as to why the lubricants would work with refrigerants which, unlike R-11 and R-22, contain no chlorine.

36 His Honour then said:

*“77. Most significantly, all the claims of the Williamitis Patent are limited to HCFCs, namely, refrigerants containing chlorine. The purpose of the claims is to define the invention. I do not consider that it is permissible to rely upon statements in the body of the specification, which are at best ambiguous and incidental, in order to find an anticipation of a patent claiming a refrigerant without chlorine in composition with a lubricant, in circumstances where the claims are unambiguously limited to refrigerants containing chlorine.”*

37 His Honour then referred to a number of other matters which confirmed that the Williamitis patent limited the ambit of discourse to HCFCs. First, at the time the Williamitis patent was published the commercially used refrigerants were R-11, R-12 and R-22. HFCs, and in particular R-134a, were not commercially available. Further, on a fair reading of the Williamitis patent it is a specification about R-22 and HCFCs and provides a solution to the particular problem of the lack of solubility of HCFCs with mineral oils.

38 Against the possibility that he was wrong concerning disclosure of the refrigerant component of the liquid, his Honour then went on to deal with the lubricants of the patent in suit. His Honour accepted that lubricants were described which would fall within the classes

of lubricant disclosed in the Williamitis patent. Therefore if, contrary to his conclusion, the Williamitis patent disclosed HFCs as refrigerants, lack of novelty would be made out, except in relation to claims 8, 16 and 24.

39           The Midgley patent did not take the matter any further. It was not directed to HFCs. His Honour said:

- “88. *In order to rely on an incorporation by reference, the reference must [unequivocally] and plainly demonstrate that the drafter has adopted the cross reference solely as a shorthand means of incorporating a writing and disclosing the invention – Nicaro Holdings v Martin Engineering Co. (1990) 91 ALR 513 at 538. The Midgley Patent claims to have identified a vast range of refrigerants and gives information on the inflammability and toxicity in combination with their boiling points.*
89. *The refrigerants commercially developed at the time of the Williamitis Patent were limited to R-11, R-12 and R-22. All contained chlorine atoms. It was also known that mineral oils worked satisfactorily as lubricants with R-11 and R-12, except perhaps at very low temperatures, but not with R-22. Thus, the skilled addressee, reading the Williamitis Patent, would treat the Midgley patent as being a background reference to refrigerants generally, a limited number of which had been commercialised, being the highly successful chlorine containing refrigerants. If the Williamitis Patent was saying something relevant to all possible refrigerants disclosed by the Midgley Patent, including those not commercially developed, the skilled addressee would expect the Williamitis patent to say so expressly.*
90. *There is nothing in the cross-reference to the Midgley patent in the Williamitis Patent which would disclose that the solution which Williamitis had found for R-22, and possibly R-12 is one which Williamitis claimed would work across the entire range of Midgley refrigerants, including those not yet commercially developed. That indicates that the cross-reference to the Midgley patent is for the limited purpose of indicating that, in an earlier work, a large number of refrigerants were identified and that the Williamitis Patent takes only some of those, being the ones then commercially available, all of which contain chlorine, and finds a suitable lubricant for them alone.”*

**(c) Conclusion on the appeal - novelty**

40           The appellants argued that the Williamitis patent had to be read from the point of view of the skilled addressee in light of the common general knowledge in the relevant field

as at the priority date of 25 April 1989. In advancing this argument, the appellants accepted that the construction of the Williamitis patent was to be determined as at the date of its publication in 1957 and that there had been no change in its construction since then. However, the argument drew a distinction between, on the one hand, construction, a question of law, and, on the other, “assessment of lack of novelty”, which was a question of fact.

41           The suggested distinction begs the question. How is lack of novelty to be assessed where a document is relied on as anticipation? Is the document to be read by the hypothetical skilled addressee as at the date of its publication or as at the priority date of the patent in suit?

42           In the context of the present case, the appellant’s argument assumes that the primary judge was correct in construing the Williamitis patent as not disclosing in 1957 an invention which included refrigerants without chlorine. Nevertheless, as at 25 April 1989 the skilled addressee would, in light of knowledge acquired over the intervening thirty-two years, read the Williamitis patent as a disclosure that the lubricants therein mentioned could work with non-chlorine refrigerants.

43           The question thus raised is not as straightforward as might at first sight appear. There is, of course, ample authority (including *Minnesota Mining & Manufacturing Co v Beiersdorf (Australia) Ltd* (1980) 144 CLR 253 at 292, 293; *Nicaró Holdings Pty Ltd v Martin Engineering Co* (1990) 91 ALR 513 at 526, 532 et seq) for the proposition that it is not permissible, in considering novelty, to make a mosaic. Each prior publication must be looked at separately. Thus it is not permissible to supplement a prior publication by reference to some other disclosure, forming part of the common general knowledge, in order to assess whether the publication truly amounts to an anticipation. It is, on the other hand, equally clear that, though construction is a matter for the Court, a prior publication is to be assessed by reference to what it would disclose to the skilled addressee. The question then is whether the skilled addressee is taken to consider the publication at its date or (as the Full Court assumed, but without needing to decide the point, in *Ramset Fasteners (Aust) Pty Ltd v Advanced Building Systems Pty Ltd* (1999) 164 ALR 239 at 248) at the priority date of the patent the claims of which are under challenge.

To that question the English Court of Appeal gave what appeared to be a clear answer in *General Tire & Rubber Company v Firestone Tyre & Rubber Company Ltd* [1972] RPC 457 at 485:

*“The earlier publication and the patentee’s claim must each be construed as they would be at the respective relevant dates by a reader skilled in the art to which they relate having regard to the state of knowledge in such art at the relevant date. The construction of these documents is a function of the court, being a matter of law, but, since documents of this nature are almost certain to contain technical material, the court must, by evidence, be put in the position of a person of the kind to whom the document is addressed, that is to say, a person skilled in the relevant art at the relevant date.”*

That statement of principle was quoted with approval by Gummow J, with whom Jenkinson J agreed, in *Nicarò* at 523, 524. The context makes clear, however, that Gummow J was not there concerned particularly with identifying the “relevant date”. Later in his Honour’s judgment, in dealing with a particular claimed anticipation, his Honour referred, again with evident approval, to a passage in the speech of Lord Reid in *Van der Lely NV v Bamfords Ltd* [1963] RPC 61 at 71:

*“... the judge ought not, in my opinion, to attempt to read or construe the photograph himself; he looks at the photograph in determining which of the explanations given by the witnesses appears to be most worthy of acceptance.*

*The photograph must be looked at through the eyes of the typical addressee of the appellants’ specification – the kind of person who would be expected to make a machine of this kind.”*

The photograph referred to was, of course, part of the alleged anticipation; the appellants’ specification was the specification of the patent in suit. Again, plainly enough, neither Lord Reid nor Gummow J should be taken to have been directing his attention particularly to the question whether what is disclosed to the skilled addressee is to be judged as at the priority date of the patent in suit or at an earlier date. Probably, on the facts of *Van der Lely*, it did not matter. But the assumption appears to be that made by the Full Court in *Ramset*. The same assumption seems to us to underlie what was said by Lord Dunedin (with whom Lord Sumner and Lord Blanesburgh agreed) in a case to which senior counsel for Lubrizol referred us, *British Thomson-Houston Co Ltd v Metropolitan-Vickers Electrical Co Ltd* (1928) 45 RPC 1. Lord Dunedin construed the claim in question and, at 22, proceeded to consider the *Tesla* Patent, the alleged anticipation:

*“Now that being my view of the Claim, I turn to Tesla, and what I have to ask myself is this – Would a man who was grappling with Rosenberg’s problem, without having seen Rosenberg’s Patent, and who had Tesla’s Specification in his hand, have said: ‘That gives me what I wish?’ I do not think he would. I do not think it would have occurred to him that Tesla had actually solved a problem which was not before him by one of his arrangements used in a particular way – for that must be done, the switches must be operated in a certain procession – in a machine which was intended to solve another problem altogether.”*

46 If it is true that the skilled addressee is taken to consider the alleged anticipation at the priority date – and, as will appear, it is not necessary for us to decide that issue – the question would be whether the skilled reader would in 1989 (when a switch to ozone friendly refrigerants was required, and there was a need to find a compatible lubricant) have noticed what might have escaped that reader’s counterpart in 1957: that among the refrigerants which the Williamitis patent, at least by cross-reference, disclosed were a number of HFCs, including R-134a. To treat that as a relevant question would not, we think, be to engage in mosaic-making.

47 That leads to another significant matter to which we must refer before turning to the alleged anticipation. It is that expert evidence as to what will be inferred by the skilled addressee is important. In the course of discussing *Van der Lely*, Gummow J said in *Nicaro*, at 542:

*“Lord Reid was at pains to point out the importance of evidence in resolving such an issue. The question was what the eye of the man with appropriate engineering skill and experience would see in the photograph. ...*

*[Lord Reid’s] words are to be borne in mind where, as in the present case, the appellants’ submissions invited a close analysis of the drawings and descriptions constituting the alleged anticipations. ...*

*The evidence in this respect was strikingly deficient. In substance, what the appellants were seeking to have this Court do on appeal was substitute its view, unaided by evidence of the category I have described, for the construction placed upon [an alleged anticipation] by the learned trial judge.”*

48 It was undisputed that there has been no change in the meanings of the particular terms used in the Williamitis patent. They had in 1957 the same meanings as they had in 1989. Halogens both in 1957 and in 1989 included chlorine and fluorine. A fluoro halo substituted aliphatic hydrocarbon (the general class of refrigerants described in the Williamitis



patent) included at both dates, literally, an aliphatic hydrocarbon in which a fluorine atom had been substituted for at least one hydrogen atom and a halogen atom for at least one other hydrogen atom; and “halogen”, literally, included fluorine. Additionally, the specification of the Williamitis patent proceeded, as we have mentioned, to say that the refrigerants used preferably comprised a fluoro halo derivative of an aliphatic hydrocarbon of the character disclosed in the Midgley patent: and the Midgley patent (though it said nothing about lubricants or compositions) disclosed and discussed HFCs as well as CFCs and HCFCs.

49 To say those things, however, does not answer the question whether, with sufficient clarity, the Williamitis patent disclosed a composition made up of an HFC refrigerant and the lubricants which it described, that is – the combining of lubricants and refrigerants being of itself hardly novel – the selection of a group of esters as suitable lubricants to be combined with an HFC (see *Rocky Mountain Traders Ltd v Hewlett Packard GmbH* [2000] FSR 411 at 427, 428). No doubt expert evidence would have been relevant to that question. But the only evidence to which we were referred was that of Professor Rae. Professor Rae was held not to represent the skilled addressee. In any event, the passage in Professor Rae’s affidavit evidence to which we were referred, while it deals with the meanings of technical terms used, is not, we think, directed towards the present question nor, we think, was the passage to which we were referred in his cross-examination, which in any event is directed to the position in 1957, not 1989.

50 Substantially, therefore, we are left in the same position as the Full Court in *Nicaro*. The primary judge proceeded on the basis that the Williamitis patent, including its cross reference to the Midgley patent, was to be read as a whole in order to assess whether it disclosed the invention sought to be protected by any of the claims (other than the abandoned claims) of the patent in suit. In adopting that approach his Honour was, in our view, plainly correct. That approach involves having regard not merely to the literal meaning of the terms used or the width of the class of refrigerants disclosed in the Midgley patent but also to important other aspects of the Williamitis patent: to the circumstances, for example, that the only refrigerants exemplified in the Williamitis patent are CFCs and HCFCs, that the Williamitis patent does not disclose any tests or experiments involving refrigerants other than CFCs and HCFCs and that, though a refrigerant is an integer of each of its claims, none of those refrigerants is an HFC.

51 In those circumstances, and in the absence of relevant expert evidence, we think that the primary judge was correct to conclude that Williamitis did not anticipate the claims of the patent in suit. A familiar metaphor illustrating the concept of anticipation is that the prior inventor must clearly be shown to have planted his flag at the precise destination before the patentee: *General Tire* at 485, 486. In the present case, the appellants' argument involved the skilled addressee rummaging through the Williamitis flag locker to find a flag which Williamitis possessed and could have planted.

## **Obviousness**

### **(a) The statutory test**

52 The 1990 Act provides, in s 138(3), that the Court may revoke a patent, wholly or so far as it relates to a claim, on a number of grounds, one of which is that the invention is not a patentable invention; and it is a requirement of a patentable invention (s 18(1)) that, so far as claimed in any claim, it involves, when compared with the prior art base as it existed before the priority date of the claim, an inventive step. Further definition is provided by s 7(2) and the dictionary in Sch 1. Those provisions, however, need not be considered further because it is common ground that the matter is to be determined by reference to s 100(1)(e) of the 1952 Act which provided a similar, but narrower, ground of invalidity:

*“100(1) A standard patent may be revoked, either wholly or in so far as it relates to any claim of the complete specification ... on one or more of the following grounds, but on no other ground:*

...

*(e) that the invention, so far as claimed in any claim of the complete specification ... was obvious and did not involve an inventive step having regard to what was known or used in Australia on or before the priority date of that claim; ...”*

### **(b) The alleged invention**

53 The trial judge identified the alleged invention as follows (March reasons, par 98; 45 IPR 577 at 597):

*“The alleged invention, ignoring the abandoned claims, can be characterised as the choice of a class of compounds which will be compatible, in the sense of miscible, with HFCs.”*

54 The appellants submitted that the trial judge used, at various places in the March reasons a variety of descriptions of the alleged invention. The following formulation, for example, appears in par 125 (45 IPR at 602, 603):

*“The essence of the alleged invention is identifying the acids and alcohols which will react to create esters which will have properties suitable for use as lubricants and which will be miscible with appropriate HFCs.”*

55 In substance, in our view, there is no significant difference between the two formulations we have quoted: the former concentrates more on the outcome, the latter more on the process by which it was reached. The other formulations to which we were referred appear in passages in the judgment dealing with alleged grounds of invalidity other than obviousness. The submission of senior counsel for the appellants was that his Honour’s difficulty in settling on a single alleged or possible inventive step was indicative of a lack of inventive step and suggested that his Honour did not apply a constant reference point in assessing obviousness. In our view, however, his Honour’s reference point was the formulation in the former of the passages we have quoted. A more accurate, but substantially similar, description of the alleged inventive step may be that it was that of combining as a liquid composition an HFC refrigerant and a miscible or soluble ester suitable for use as a lubricant when the composition is used for refrigeration and like purposes. In any case, the submissions as to the identity of the inventive step played no identifiable part in the argument about whether what is claimed lacks the necessary quality of inventiveness.

**(c) *The art or field***

56 The primary judge identified, as the relevant art or field, “the manufacture and supply of hydrocarbons and lubricants suitable for combination and use together for purposes such as refrigeration and air-conditioning” (March reasons par 99; 45 IPR at 597). That formulation was criticised on the basis that the relevant classes of hydrocarbons – HFCs and HCFCs – were given (which, so far as it goes, is true); and that the relevant art or field was not the manufacture or supply of lubricants (or, for that matter, refrigerants) but the organic chemistry necessary to select, and possibly make and test, lubricants which would be compatible with the given refrigerants. The identification of the art or field, however, matters only for the purposes of proceeding to identify the hypothetical skilled worker in the field and

then to ascertain the content of the common general knowledge of skilled workers in the field in Australia at the priority date. Because, as will appear, there is no issue ultimately of any practical significance in relation to the identification either of the hypothetical skilled worker or common general knowledge, it is unnecessary for us to attempt a precise definition of the relevant art or field.

**(d) Common general knowledge**

57 Although it is to invert the logical order, it is convenient, before considering the identification of the hypothetical skilled worker, to deal with the question of common general knowledge in Australia at the priority date. There was little controversy about his Honour's findings on that subject, which are to be found in par 112 and par 113 of the March reasons (45 IPR at 599, 600):

*“The common general knowledge is the technical background to the hypothetical skilled worker in the relevant art. It is not limited to material which might be memorised and retained at the front of the skilled [worker’s] mind but also includes material in the field in which he is working which he knows exists and to which he would refer as a matter of course. It might, for example, include:*

- *standard texts and handbooks;*
- *standard English dictionaries;*
- *technical dictionaries relevant to the field;*
- *magazines and other publications specific to the field;*

*At the priority date of the Patent, I find that the following was part of the common general knowledge in the field which I have identified:*

- *CFCs such as R-11 and R-12 worked satisfactorily as refrigerants with mineral oil lubricants.*
- *R-22 worked as a suitable refrigerant in many areas with some but not all mineral oils.*
- *Because of the Montreal Protocol, there was a need to adopt an alternative refrigerant to R-12 and there was a range of at least 5 or 6 candidates, some of which were HCFCs and some of which were HFCs. Some of those were then commercially available such as R-22. Others such as R-134a were not yet commercially available and were still going through toxicity tests which were not expected to conclude until 1993.*

- *HCFCs were a short time replacement for CFCs and HFCs were a long term replacement.*
- *R-134a was the refrigerant of choice to replace R-12.*
- *There were several classes of synthetic lubricants, and many variations within each class, which were possible for use in particular applications, but there were no synthetic oils actually in use within the refrigeration industry.*
- *Mineral oils were not suitable for use with R-134a.*
- *There was no principle that allowed one to know in advance which lubricant would work for all or any particular purposes with any newly commercialised refrigerant.*
- *There was an awareness that work was being done on the problem overseas but no reports of the detail of that work were published or known in Australia.*
- *A possible exception was an article in 'Chemistry in Britain' which stated that ICI had solved the problem by using R-134a and PAGs. However, that magazine was likely to be read by organic chemists keeping up to date with the literature but not by persons directly in the field identified.*
- *The properties required of a refrigeration lubricant for it to be suitable for use in a wide range of applications included the following:*
  - (a) good inherent lubricity;*
  - (b) high thermal stability;*
  - (c) high chemical stability: in particular, there must be no reaction between refrigerant and lubricant;*
  - (d) suitable physical properties such as viscosity, pour point and viscosity index;*
  - (e) acceptable material compatibility with materials of construction;*
  - (f) compatibility with refrigerant by way of good miscibility.*
- *The process of esterification and how to carry it out.*
- *The relevance of polarity with respect to miscibility, at least in general terms.*
- *Methods to test combinations of refrigerant and lubricant for miscibility.*

- *The knowledge contained in the 1986 ASHRAE handbook.*”

58 The third last and the last items in that list require some explanation. Polarity was the subject of a good deal of attention in the evidence. In broad terms, a bond linking atoms in a molecule is polar if it joins atoms which differ in their tendency to attract electrons. The greater the difference, the greater the polarity. The polarity of a molecule depends both on the polarity of the bonds joining the atoms which it contains and on the structure of the molecule. The tendency of an atom to attract electrons is referred to as electronegativity. Hydrogen and carbon are particularly low in electronegativity; on the other hand, fluorine, chlorine and oxygen are among the most electronegative elements. As a general proposition, though polarity is no certain guide to miscibility, it is more likely that substances whose molecules are of like polarity will be miscible with each other than those whose molecules are of unlike polarity. The commonly used chlorofluorocarbons, R-11 and R-12, are of low polarity; so are the mineral oils commonly used in association with them. The HCFC, R-22, has considerably higher polarity. The polarity of R-134a is still greater.

59 ASHRAE is the American Society of Heating Refrigeration and Air Conditioning Engineers, the peak professional association for the refrigeration industry in the United States. ASHRAE publishes a handbook, the 1986 edition of which was generally available to air-conditioning and refrigeration engineers in Australia before 1989. Chapter 8 of that handbook deals with lubricants and contains a general discussion of oils which may be used and their properties. His Honour described the handbook’s treatment of synthetic oils as follows (March reasons par 32; 45 IPR at 583-584):

*“Under the heading ‘Synthetic Oils’, Chapter 8 of the 1986 ASHRAE handbook referred to the limited solubility of mineral oils with R-13, R-22 and R-502 as having led to the investigation of synthetic oils for refrigeration use. It was said that, of the available types, alkylbenzenes performed satisfactorily. The handbook then went on to state that numerous other synthetic oils were commercially available and that many have properties suited to refrigeration purposes. Among those listed were synthetic paraffins, polyglycols, dibasic acid esters, neopentyl esters, silicones, silicate esters and fluorinated compounds.”*

Chapter 8 also referred to a published paper describing certain properties of various synthetic oils.

The appellant's criticisms of his Honour's findings as to common general knowledge were minor and, we think, inconsequential. For example, it was submitted that his Honour should have included the article in '*Chemistry in Britain*' and the paper referred to in Ch 8 of the ASHRAE handbook in the common general knowledge, but it was not suggested that any particular consequence would follow from including them. There was some criticism of his Honour's statement that there was no principle that allowed one to know in advance which lubricant would work for all or any particular purposes with any newly commercialised refrigerant; but that must be read in the light of the other matters which the trial judge found were included in common general knowledge – for example, polarity and its potential relevance.

**(e) Hypothetical skilled worker**

61 The task of identifying the hypothetical skilled worker in the field was – and is – rather more difficult. As will be seen, however, little seems to turn, in the end, on whose submissions are accepted on this aspect of the case. The primary judge dealt with the question in pars 99 to 101 of the March reasons (45 IPR at 597):

*“... The skilled worker in that field could be expected to have practical knowledge of the chemical and other properties required of a lubricant, knowledge of the likely introduction of R-134a to replace CFCs and HCFCs and knowledge of the unsatisfactory nature of mineral oils as lubricants in that context.*

*The notional skilled reader may not be limited to a single person but may be a team whose combined skills would normally be employed in the art – Sachs LJ in General Tire & Rubber Co v Firestone Tyre & Rubber Co Ltd [1972] RPC 457 at 485, cited with approval in Leonardis v [Sartas] No 1 Pty Ltd (1996) 67 FCR 126 at 146. ICI contended that the skills of Mr Dobney and Mr Harrington would have been available to the hypothetical skilled worker. ICI also contended that if chemical matters went beyond the expertise of Mr Harrington, an academic or organic chemist, such as Professor Rae could be consulted. Accordingly, ICI contended, the skills of somebody in the position of Professor Rae should also be regarded as available to the hypothetical skilled worker.*

*However, there is no evidence that skilled practitioners in the field in fact consulted academic organic chemists for the purposes of devising refrigerant and lubricant compositions. Neither Mr Harrington nor Mr Dobney said that that was his practice and Professor Rae accepted that he had never made such a composition or advertised his ability to do so. Nor had he been asked to do so. Neither Lubrizol nor ICI had academic organic chemists as part of their teams. There is no basis for concluding that a chemist having skills*

*beyond that of an industrial chemist such as Mr Harrington would be regarded as a practitioner in the field which I have identified above. I do not consider, therefore, that the particular academic skills of Professor Rae should be regarded as being available to a hypothetical skilled worker for the purposes of this question.”*

62            Again, some explanation is necessary. Mr Dobney was called by Lubrizol. He is a mechanical engineer who has worked in the field of refrigeration systems and air-conditioning systems since 1944. He has a diploma in mechanical engineering. He is a member of ASHRAE and of the Australian Standards Association Committee in relation to refrigerants. He retired from full time employment in 1990 but, at the date of the trial, continued to act as a private consulting engineer in solving air-conditioning and refrigeration problems. His affidavit evidence was concerned principally with issues concerning infringement but he gave evidence in cross-examination on matters relevant to obviousness.

63            Mr Harrington holds the degree of BSc from London University. He has worked in the field of fluorocarbons and their use as refrigerants since 1962. He had extensive experience in industry as a chemist, plant manager, product manager and marketing manager of Pacific Chemical Industries. He acquired a good working knowledge of the operation of commercial and domestic refrigeration and air-conditioning systems and particularly the interaction of refrigerants with other components of the systems such as materials of construction, desiccants and lubricants. From 1984, he had been interested in HFC and HCFC refrigerants developed as likely replacements for CFCs and the progress which was being made in solving problems associated with the new generation of refrigerants. Mr Harrington was also called by Lubrizol and his affidavit evidence also was directed towards infringement issues. He also, however, gave evidence in cross-examination which is relevant to obviousness.

64            Professor Rae was called by the appellants. He is an expert in many aspects of organic chemistry. He has been involved in consulting work involving industrial chemicals. He is experienced in synthesising esters. He has had a long and distinguished academic career. He was Professor and Dean of the Faculty of Science at Monash University from 1990 to 1994. At the time he gave evidence he was a professorial fellow of the Department of History and Philosophy of Science at the University of Melbourne. Professor Rae gave detailed evidence about the relevant principles and processes of organic chemistry.



65           Although the trial judge eliminated Professor Rae from the team making up the hypothetical skilled worker, he did not explicitly identify the hypothetical worker (or hypothetical team) or the precise field of activity in which the worker or team might be found. His Honour appears implicitly to have accepted ICI's submission to the extent of crediting the hypothetical worker with the combined knowledge and skills of Mr Dobney and Mr Harrington.

66           Lubrizol's submission on the appeal proceeded on the basis that that was so and supported that view of the matter; particularly, Lubrizol supported the finding that, as a matter of fact, an academic such as Professor Rae would not be employed in order to assist in the search for a compatible lubricant as one which was open on the evidence before the primary judge. Senior counsel for the appellants, on the other hand, contended that an expert with the qualifications of Professor Rae should be regarded as a member of the hypothetical team of skilled workers. He pointed to some rather general evidence of Mr Dobney that, in 1989, his company had hired consultants in areas outside its expertise; evidence of Mr Harrington that, in the unlikely event that he had been asked to develop a lubricant suitable for use with HFCs and HCFCs, he would first have sought to "head hunt" someone from one of the oil companies or, if that failed, looked to the universities or the CSIRO; and to evidence of Professor Rae that he had on several occasions been consulted by companies large and small and had, on one occasion, "done some work with a consulting chemist on corrosion in refrigeration systems".

67           Undoubtedly the skilled worker, or skilled team, is hypothetical. Nevertheless, we cannot resist the impression that there is a degree of unreality about all this, going well beyond reasonable hypothesis. There was no evidence, as we understand it, of any work in fact done in Australia on the selection of particular lubricants for use with particular kinds of refrigerants. The evidence about the work done overseas, however, was that it was carried out, in a number of countries, within large companies involved in the chemical industry (for example, ICI and Dupont), within large oil companies (Shell, Mobil), by substantial corporations particularly concerned with the manufacture, sale and distribution of lubricants (Lubrizol itself), and by large corporations with a particular interest in ensuring that lubricants were available, when they were required, for use with the new generation of refrigerants (General Motors, Ford, Chrysler, Hitachi). In that context, it involves no disrespect to Mr Dobney or Mr Harrington to say that we are unconvinced that it was

appropriate to posit the construction of a team based on hypothetical persons having their particular skills and experience and then to ask the question whether those hypothetical persons might have called in aid someone like Professor Rae. We have the clear impression that matters developed the way they did adventitiously, as a result of a limited number of answers obtained in cross-examination (which in one case – that of Mr Harrington – were clarified in re-examination).

68           Despite those comments, however, we do not think that the material before us justifies us in holding that, on the evidence before him, the primary judge erred in approaching this question as he did. In any event, there is an additional factor which makes it unnecessary to pursue the matter further. Evidence given by Mr Dobney and Mr Harrington in cross-examination established that their combined stock of relevant background knowledge included aspects of the expertise of Professor Rae on which the appellants sought to rely. More particularly, Mr Harrington’s evidence made it clear that he understood the principles (including the relevance of polarity) of which Professor Rae gave evidence and which (as Dr Jolley’s own evidence established) guided Dr Jolley’s search. And no party submitted that the Court should look beyond the combined skills and knowledge of Mr Dobney, Mr Harrington and Professor Rae to find the hypothetical skilled worker.

69           With that by way of rather lengthy exordium, we can turn to the substantial question argued: whether Dr Jolley’s discoveries involved an inventive step.

*(f) Inventive step*

70           The primary judge recognised that it was necessary to draw a distinction “between an inventive step on the one hand and the trial and error which forms part of the normal industrial function of a skilled worker in the relevant field” (March reasons par 114; 45 IPR at 600). His Honour held that a number of matters indicated that the invention claimed in the patent involved an inventive step. They included the following:

- There was an urgent public need, resulting from the Montreal Protocol, to identify a composition which met the requirements of the Protocol.

- From mid 1986, substantial companies around the world had worked on the problem without solving it.
- ICI, in particular, commenced work in 1986. Their work was directed principally towards the use of PAGs but they investigated other possibilities as well (including “one or two tests” on polyol esters). They did not, however, in the course of their very extensive work on the problem over a long period, reach a satisfactory solution before the priority date of the patent, or for some time afterwards.
- The invention did not simply involve the selection of a particular compound. Its essence lay “in identifying the acids and alcohols which will react to create esters which will have properties suitable for use as lubricants and which will be miscible with appropriate HFCs” (March reasons par 125; 45 IPR at 602, 603).
- Dr Jolley’s work (which his Honour described in some detail) involved extensive research over nine months ranging broadly over many possible compounds: “Dr Jolley did not simply find one compound which was the solution. Rather he deduced, over time, from many experiments, certain principles which ultimately led to the solution. ... Many classes of compounds contain possible solutions. To reject PAGs and seek a solution from first principles by investigating a whole range of compounds is indicative of an inventive step” (March reasons par 139 and par 140; 45 IPR at 605).
- Chapter 8 of the ASHRAE Handbook warned that the widely differing properties of individual synthetic oils required that extreme caution be exercised in considering a synthetic oil for refrigeration purposes.
- The ASHRAE Handbook did not refer, in Ch 8, to HFCs but only to HCFCs. The considerations referred to in the chapter emphasised that the choice of a synthetic lubricant for use with a refrigerant was less than obvious.
- The evidence was that, worldwide, polyol ester lubricants had enjoyed a substantial commercial success and constituted the preferred technology for stationary applications.

71 Two passages in the judgment of Aickin J in *The Wellcome Foundation Ltd v V R Laboratories (Aust) Pty Ltd* (1981) 148 CLR 262 state the essence of the test under the 1952 Act, as we must apply it. First, at 270:

*“It is as well to bear in mind that the question of obviousness involves asking the question whether the invention would have been obvious to a non-inventive worker in the field, equipped with the common general knowledge in that particular field as at the priority date, without regard to documents in existence but not part of such common general knowledge.”*

Secondly, at 286:

*“It is still correct to say that a valid patent may be obtained for something stumbled upon by accident, remembered from a dream or imported from abroad, if it otherwise satisfies the requirements of the legislation. What is important is that the patent itself should involve an inventive step, whether or not it was consciously taken by the patentee and whether or not it appeared obvious to the patentee himself. The test is whether the hypothetical addressee faced with the same problem would have taken as a matter of routine whatever steps might have led from the prior art to the invention, whether they be the steps of the inventor or not.”*

72 The appellants relied both on Dr Jolley’s evidence as to the nature of his research and the steps which he took and on the findings as to common general knowledge in Australia (and the evidence on which those findings were based) to make good a submission that what the patent claims does not involve any inventive step because the hypothetical addressee, faced with the problem which Dr Jolley set out to solve, would have taken as a matter of routine the steps leading from the prior art to the invention. Thus, when asked whether he knew anything in particular about the properties of various synthetic oils that would make them likely to be suitable candidates, Dr Jolley replied:

*“I personally had never been associated with any kind of research with a synthetic lubricant before this time, so other than to say that I knew that polyalkylene glycols were a general class of lubricant used in air compressors or polyol esters for that matter a general class of lubricant that’s used in high temperature applications like jet engines. Just that kind of basic information is all that I knew.”*

Then, a little later, when asked whether he knew anything more about particular synthetic oils than that they were well known synthetic lubricants that were potential candidates, Dr Jolley replied:

*“Well, I didn’t – I suppose in a general sense – you know, if somebody had come up to me and asked in 1988, do you think the polyalkylene glycol would be a useful class, I would think about it for a minute and say, yeah, I believe that would be a useful class. I certainly didn’t have any type list formulated in my mind that was binding in any way as to whether or not it was a useful class or not, but the molecules and the kinds of way that you can modify them, they were known to me and as such then would be potential candidates yes, ... but certainly if I were given a list like this, ... then I would see those things and say okay, well gee I don’t know. Maybe there’s a bunch of classes here that would be worth trying, I don’t know.”*

The primary judge summarised a series of answers given by Dr Jolley as follows (March reasons par 136; 45 IPR at 604):

*“Dr Jolley agreed that the candidates identified by General Motors were worth trying and, as indicated above, that he would expect polarity to be a factor in miscibility. He acknowledged that the experimentation carried out by him and under his supervision was routine and quickly showed relevant trends. He agreed that when conducting experiments with the various esters, as he did, with one or two experiments starting with the same alcohol but different acids, one **could** begin to perceive a trend in relation to the property of solubility. He said that that was just a typical course that anyone in research would take when trying to flush out the scope of an invention. He would do some sort of an experiment like that to start to map out the boundaries. Within the first week or two, Dr Jolley had tested three products within the category that now come within the claims of the Patent.”*

73           The list referred to was provided by representatives of General Motors when Lubrizol was first asked to assist in the search. Included on the list were certain polyol esters, which General Motors had found not to be soluble in HFCs.

74           In short, the effect of the appellants’ submission was that the relevant fund of knowledge with which Dr Jolley began did not go beyond the common general knowledge in Australia; his own evidence was that the steps he took were routine; Mr Harrington gave evidence that the principles and processes were well known to him; accordingly the claimed invention was obvious to the hypothetical skilled but uninventive worker equipped with the common general knowledge in Australia at the priority date.

75           The appellants relied also on the circumstance that very shortly after he commenced his work Dr Jolley tested products which fall within the claims of the patent. Particularly, he had within the first few days, at the suggestion of his immediate superior, tested a commercial product known as Herculube F. Herculube F is a polyol ester and is within the

claims. While it was not an ideal candidate (it tested as insoluble over parts of the desired temperature range), Dr Jolley accepted that he kept it at the back of his mind and that it pointed him in the direction of polyol esters. It was submitted that the episode demonstrated at least that Herculube F was something which it was obvious to try; and that, a particular lubricant falling within the claims being obvious, the patent was not saved by the fact (if true) that the entirety of the area mapped out by the claims was not obvious. Indeed, it was also submitted, the area mapped out by the claims was so large that the inventor could not be said, in any realistic sense, to have marked out the boundaries.

76           Senior counsel for Lubrizol relied heavily on evidence as to work done by ICI and others to find a class of lubricants which would work with HFCs. The material relied on was in a series of ICI documents which were in evidence. It chronicled in some detail aspects, at least, of ICI's search and included reports of what people within ICI had found out about the activities of others. The material was said to show that a significant number of substantial corporations devoted large amounts of resources to the search, beginning as early as 1986, but had not, by the priority date, arrived at a satisfactory solution.

77           The appellants contended that it would be unfair to give any great weight to that evidence. In relation to third parties, particularly, it presented a picture that was at best partial and might well be misleading. In relation to ICI, it was said, the evidence should be considered in the light of the circumstances that the most urgent need, to which most efforts were directed, was to find a combination of lubricant and HFC which would work satisfactorily in automotive air-conditioners; that ICI's efforts were directed towards PAGs, which it already manufactured and which, according to the evidence, were cheaper than polyol esters; and that (as the evidence made clear) PAGs ultimately proved to be the lubricants of choice in automotive air-conditioners (polyol esters being more satisfactory, as the primary judge noted, in stationary applications). ICI, it was said, did not direct any particular attention to applications other than automotive air-conditioning until considerably later; and its earlier experiments with compounds other than PAGs were, on the evidence, directed towards solving other problems.

78           There is force in those submissions. Nevertheless, we do not think it is unfair to regard the evidence substantially as his Honour did: as indicating that ICI (and others) had been working on a solution to the problem, at least in one particular application, since 1986

and had not solved it; and that ICI's own preferred likely solution, PAGs, presented problems which, by the priority date, had not been overcome. Equally, in our view, there is no doubt that his Honour was right in describing the problem as urgent, especially in relation to automotive air-conditioning. In the light of the Montreal Protocol, that must have been so; and there was clear evidence that the motor vehicle manufacturers so regarded it, as did ICI. In that context, although the evidence about what others were doing does not necessarily answer the statutory question, plainly it is relevant to it.

79 In the end, this is one of those difficult cases involving questions of degree (*Beecham Group Ltd's (Amoxycillin) Application* [1980] RPC 261 at 290, 291; *Coopers Animal Health Australia Ltd v Western Stock Distributors Ltd* (1986) 6 IPR 545 at 567). The question to be asked is whether the hypothetical addressee, faced with the problem that confronted Dr Jolley and equipped with the common general knowledge in Australia as it existed at the priority date, would have taken as a matter of routine whatever steps might have led from that general knowledge to the invention defined by the claims. It is significant that, after stating the tests substantially in those terms, Aickin J proceeded (*Wellcome Foundation* at 286) to warn against a form of illegitimate use of hindsight which can result from "resort by those attacking a patent to the research and experiments of the inventor" (though this, of course, may be a case where "those equipped with the common general knowledge of the relevant art are unable to see from the specification and claims how the invention was arrived at"). The point can, perhaps, be illustrated by reference to the testing of Hercolube F. Dr Jolley tried Hercolube F not because it occurred to him that it represented an obvious possibility but because his superior suggested that he try it. Why it occurred to his superior we do not know. But it is a leap from the fact that it occurred to Dr Jolley's supervisor that Hercolube F should be tried to the conclusion that, merely because the hypothetical skilled worker in Australia had substantially the same background knowledge as Dr Jolley, it must have been obvious to that skilled worker that Hercolube F (or something like it) ought to be tried. And it is legitimate to be reassured as to one's scepticism about that leap by the evidence, with all its limitations, about the searches undertaken by others.

80 Senior counsel for the appellants relied on *Genentech Inc v The Wellcome Foundation Ltd* (1989) 15 IPR 423, particularly the discussion by Mustill LJ leading to his observation, at 544:

*“It is true that in many instances the fact that no competitor has produced the invention may be a strong, and indeed on occasion clinching, ground for concluding that it was not obvious – as in the example of the external condenser. But where there is a road to be travelled towards the goal, the winning of the race may tell one no more than that the winner was first in the field, or richer or more determined.”*

81 But there were significant differences of judicial opinion in *Genentech*, and it may well be that the test posed by Mustill LJ (including his Lordship’s analysis of the terms ‘inventive step’ and ‘obvious’ commencing at 540) is more rigorous than that established by High Court authority in Australia. The appellants also relied on *Coopers Animal Health*; but we do not think that the finding that, on the particular evidence of that case, *DGBE* was a solvent worth trying assists much in providing an answer, on the evidence in this case, to the question whether the skilled worker equipped with the common general knowledge in Australia would have found the class of compounds identified by Dr Jolley an obvious possibility for the solution of the problem posed by the introduction of HFCs. No doubt, for example, the polarity of lubricants within the class claimed was some guide to their miscibility with at least certain HFCs; but we were directed to no evidence that the claimed class stood out particularly, in that respect, among the numerous known types of synthetic oils. Senior counsel for the applicants relied also on *Aktiebolaget Hässle v Alphapharm Pty Ltd* (1999) 44 IPR 593; but in that case there was a good deal of evidence given by persons within the class of skilled workers in the field as to the steps which they would have taken if presented with the problem which the patent in suit claimed to have solved – including one such person who was unaware of the terms of the patent.

82 It was for the appellants to make good their claim that, having regard to the common general knowledge in Australia at the priority date, the invention claimed was obvious and did not involve an inventive step. The trial judge found that they had not done so. In our view, for the reasons we have given, the appellants have not shown that that conclusion involved an error of law or in reasoning.

### **False suggestion or representation**

83 Once again, the ground of revocation under s 100(1)(k) of the 1952 Act is narrower than the corresponding ground provided by s 138(3)(d) of the 1990 Act. Accordingly, the test which the appellants must satisfy is that provided by the former provision. It reads:



*“100(1) A standard patent may be revoked, either wholly or in so far as it relates to any claim of the complete specification ... on one or more of the following grounds, but on no other ground:*

*...*

*(k) that the patent was obtained on a false suggestion or representation.”*

84 The first Examiner’s report on the application for the patent was unfavourable. It included the following:

*“The invention you have defined in claim 1, 10 and 18 is not novel when compared with the following document:*

*JP61-181895 to Nippon Oil and Fats Co. Ltd 14 August 1986  
(14.08.86)*

*This document discloses an ester, which is used as a refrigerator oil, which falls within the scope of the formula 1 as defined in claim 1. It is common knowledge that refrigerator oils are used along with refrigerants which are mostly fluorine containing hydrocarbons.”*

85 The trial judge recorded that it was not clear from the report whether the Examiner had available the complete specification of JP61-181895 or only an extract. An extract had been received into the Patent Office Library by 4 March 1987. An English translation of the patent was published at the Patent Office Library on 19 September 1986. In those circumstances it is, perhaps, unlikely that the Examiner would not have seen the complete specification (and perhaps even more unlikely that the Examiner would not have read the complete specification when Lubrizol’s response to the report was received); but whether or not the Examiner read the complete specification is not, we think, a matter of great significance.

86 The abstract of JP16-181895 describes the invention as “flon-resistant refrigerator oil”. It states the purpose of the invention as follows:

*“To provide the titled refrigerator oil having excellent lubricating properties, thermal stability and flon-resistance and capable of eliminating the need for the use of additives, which comprises as main component an ester of a carboxylic acid mixture containing a hydroxyaryl acid with a polyhydric alcohol.”*

It is common ground that “flon” or “fron” is a Japanese term having the same meaning as “freon” – that is, it is a term which refers to refrigerants generally.

87 Progress was somewhat stately. The examiner’s report was received on 22 November 1991. On 14 April 1993, Lubrizol’s patent attorney replied. The reply was largely a verbatim transcription of comments provided by Lubrizol to the patent attorney. It read (the emphasis appears in the original):

*“The Examiner considers claims 1, 10 and 18 not novel when compared with JP61-181895. Based upon the abstract, this citation, which was filed in 1985, is directed **exclusively** to an oil intended to be used with freon, a chlorofluorocarbon (CFC). This we submit is not surprising, because the industrial paradigm change from systems using chlorofluorocarbon (CFC) type refrigerants with mineral oil lubricant to alternative, ozone-friendly hydrofluorocarbon (HFC) type refrigerants with alternative lubricants, did not really take place until about 1988 i.e. until well after the invention of the citation was made and then published. The realization that CFC-type refrigerants would have to be replaced by HFC-type refrigerants was accompanied by the discovery that the mineral oil lubricants that have been used so long and successfully with CFC refrigerants were not satisfactory for use with HFC refrigerants. Moreover, there was [no] clear indication as clearly evident from the reference, as to any particular chemistry which might reasonably be expected to combine acceptable lubricity, viscosity, and miscibility with HFC refrigerants.*

*An important reason understood by the skilled addressee for the difficulty in finding compatible lubricants for use with HFC refrigerants is the presence in the latter of a C-H bond, which dramatically reduces miscibility in comparison to, for example, R-12, a typical CFC-type refrigerant in which all available carbon bonds are completely occupied by halogen substituents. This reduced miscibility is further aggravated in HFC refrigerants lacking chlorine, which has a strong solubilizing influence: a prime example of this is R-134a ... one of the most important of the new alternative refrigerants.*

*Therefore, and to return to the present subject, the novelty of the presently claimed invention does not reside in the ester lubricant. Rather, it resides in the successful combination of the C-H bond containing fluorocarbon refrigerant with an ester lubricant as now first described in the present claims.*

*From the above, it appears the Examiner has in fact misstated the prior art when he indicates that ‘It is common knowledge that refrigerator oils are used along with refrigerants which are most [sic] fluorine containing hydrocarbons ...’ Prior to the recent drive towards ozone-friendly refrigerants, refrigerants have instead generally comprised chlorofluorocarbon and have generally not been hydrocarbon, in the sense that they have not contained any C-H bonds but have instead been fully substituted by halogen. The present invention we*

*submit is not disclosed by the prior art reference and is novel and patentable thereover.”*

88

We see no reason to doubt the correctness of a submission on behalf of Lubrizol that the Japanese patent in fact did not anticipate any of the claims of the patent in suit because of the requirement that the “ester of a carboxylic acid mixture” contain “a hydroxyaryl acid”: March reasons at par 81; 45 IPR at 593, 594. Certainly the appellants did not rely on the Japanese patent as an anticipation of any of the claims. However, the response to the Examiner’s report plainly stated that, “based upon the abstract”, the Japanese patent was directed exclusively to an oil intended to be used with freon (to be taken, apparently, as the same thing as “flon”) and that “freon” meant a CFC. It was undoubtedly incorrect to suggest that the universe of freons comprised only CFCs; and, as a matter of fact, the specification of the Japanese patent made it clear that the refrigerants with which it contemplated that its lubricant might be used included R-22, an HCFC. There is no evidence that Lubrizol had seen the complete specification of the Japanese patent and it was not suggested that the statements in the letter responding to the report were not made in good faith. But it is clear that a statement may amount to a false suggestion or representation, for the purposes of s 100(1)(k), although not fraudulent in the common law sense: *Prestige Group (Aust) Pty Ltd v Dart Industries Inc* (1990) 26 FCR 197. *Prestige Group* establishes also that, in order to make out the ground of invalidity under s 100(1)(k), it is not necessary to establish that the patent would not have been granted but for the false suggestion or representation; it is sufficient that the suggestion or representation was a material inducing factor which led to the grant: see at 201 per Lockhart J and at 218 per Gummow J, with whom Northrop J agreed.

89

The trial judge held that the ground of invalidity under s 100(1)(k) was not made out, essentially for two reasons. One was that, if there was a false suggestion or representation, it was material only to the abandoned claims which included an HCFC refrigerant as a component of the liquid composition. Those claims being abandoned, the representation, if false, should not lead to revocation of the remaining claims. The trial judge expressed the other basis of his conclusion at par 183 of the March reasons, 45 IPR at 613, 614, as follows:

*“Notwithstanding that the Commissioner was notified of the proceeding, the Commissioner has not participated. I do not consider that a statement to an examiner by an applicant, made in good faith, concerning the effect of the prior art, will fall within s 100(1)(k). The Commissioner and his examiners will take such steps as they are advised to determine whether or not an*

*alleged invention is novel. An applicant would be entitled, in my opinion, to make submissions to an examiner concerning the effect of the prior art. The fact that those submissions are ultimately shown to be wrong, does not mean the submissions constituted false suggestion or representation.”*

His Honour added the following observation:

*“Having regard to the specific grounds for revocation which are now found in the 1990 Act, there is good reason for construing s 100(1)(k) as limited to statements of fact about which the applicant has knowledge and about which the Patent Office would not normally have any information. It should have limited application in an area where there is debate between the Patent Office and the applicant about the construction or effect of a piece of prior art, cited by the Patent Office.”*

90 The appellants submitted, on the appeal, that it was not correct to describe the representation about the meaning of “freon”, and about the class of refrigerants to which the Japanese patent was directed, simply as a submission contrary to the construction, suggested by the Patent Office, of a piece of prior art. Rather, Lubrizol made an assertion, which was incorrect, about the meaning of a technical term of which Lubrizol had knowledge but about which, adopting his Honour’s terminology, the Patent Office would not normally have any information. The appellants submitted also that it was proper to infer, because the application proceeded to grant following the response to the Report, that the response was a material inducing factor. The Court, it was said, should not be deterred from drawing that inference by any lack of direct evidence as to the mental processes engaged in by the Commissioner or the Commissioner’s officers. They could not have been called: *Pracdes Pty Ltd v Stanilite Electronics Pty Ltd* (1995) 35 IPR 259 at 275. (It may be noted in passing that Windeyer J there refers, in support of that proposition, to the judgment of Lockhart J in *Prestige Group* at 201; but Lockhart J does not refer to the question whether evidence could be obtained from the Patent Office or whether any inference which might otherwise be drawn is strengthened or weakened by the circumstance that the Commissioner, being notified of proceedings, elects to take no part in them.)

91 We accept, as senior counsel for the appellants did, that an applicant for a patent is entitled to make submissions to the Patent Office as to the proper construction or effect of a piece of prior art and will not be found to have made a false suggestion or representation merely because such a submission is held to have been incorrect. We also accept, however, the submission that the representation as to the meaning of “freon” should not be regarded

simply as a submission of that kind. The evidence made it clear that “freon” meant refrigerants generally. There was no basis on which it could correctly be said that “freon” meant only CFCs. The representation that it had that limited meaning (though made in good faith) was, in our opinion, a false suggestion or representation.

92           Whether it was a matter materially inducing the grant is a more difficult question. In our view, however, the primary judge was entitled to take into account the fact that the Commissioner, though notified, had not elected to take part in the proceeding: the Full Court so held, in relation to an analogous question arising under the *Trade Marks Act 1995* (Cth), in *Transport Tyre Sales Pty Ltd v Montana Tyres Rims and Tubes Pty Ltd* (1999) 43 IPR 481 at 491. We think it is relevant also to bear in mind that the Examiner must be taken to have become thoroughly familiar with the specification and claims the subject of Lubrizol’s application; the Examiner should also be taken to have become familiar with at least the abstract but, we should think, more likely the complete specification, of the Japanese patent. A reaction more likely, we should think, than immediate acceptance of what was said on Lubrizol’s behalf was a further consideration, by the Examiner, of both. After all, where good faith is not in issue it is inappropriate to apply any presumption that the misrepresentation actually misled. In those circumstances, although the primary judge did not explicitly find that the appellants had not established that the representation materially induced the grant, such a finding is, however, in our view implicit in the passage we have quoted from the judgment. For the reasons we have given, which are in substance those of the primary judge, we think that such a finding is appropriate.

93           In any event, we agree with the primary judge that the representation was material only to the abandoned claims and that, even if did materially induce the grant, that need not and should not result in revocation of the remaining claims. The appellants submitted that it was not appropriate to assess false suggestion or representation on a claim by claim basis. The submission was based upon the wording of s 100(1) (“... the **patent** was obtained on a false suggestion or representation”) and on considerations of public policy said to underlie that ground of invalidity. We do not think, however, that the wording requires an all or nothing approach. Certainly – and unsurprisingly – par (k), unlike other paragraphs of s 100(1), speaks of the patent being obtained, not the patent to the extent of any claim being so obtained. But the opening words of s 100(1) contemplate, in relation to par (k) as much as in relation to the other paragraphs, that it may in a particular case be appropriate to revoke the

patent either in whole or as to particular claims. Where a misrepresentation made in good faith affects only particular claims (as, here, it might be taken to have suggested to be novel certain claims which were not – though not for the reason suggested by the Examiner) we can see no reason in public policy why revocation should extend beyond the affected claims. That is what the primary judge held and, in our opinion, his decision was correct.

94 It might be mentioned, in passing, that that is an approach which receives at least some indirect support from a second judgment delivered by Windeyer J in *Pracdes Pty Ltd v Stanilite Electronics Pty Ltd* (1995) 35 IPR 277. That was a case where the false suggestion or representation was made in the specification; his Honour ordered amendment of the specification by omitting the offending statement.

### **Fair Basis**

95 We turn to the cross-appeal from the decision of the primary judge, based on the conclusion reached in the March reasons and confirmed (after further argument) in the May reasons, that the claims remaining after deletion (or revocation) of the claims which Lubrizol did not seek to support were not fairly based upon the complete specification.

96 There is no substantial difference between the relevant provisions of the 1952 Act and those of the 1990 Act but again, if there is a relevant difference – see *Leonardis v Sartas No 1 Pty Ltd* (1996) 67 FCR 126 at 139 – the test to be applied is that in s 100(1)(c) of the 1952 Act. Section 100(1)(c) of the 1952 Act provided, as one of the grounds of revocation:

“ ...

(c) *that the complete specification ... does not comply with the requirements of section 40; ...”*

Section 40 provided, relevantly:

“40(1) *A complete specification –*

- (a) *shall fully describe the invention, including the best method of performing the invention which is known to the applicant; and*
- (b) *shall end with a claim or claims defining the invention.*

...

*(2) The claim or claims shall be clear and succinct and shall be fairly based on the matter described in the specification.”*

97 Under s 138(3)(f) of the 1990 Act it is a ground of revocation that the specification does not comply with subs 40(2) or (3). Those two subsections provide:

“40 ...

*(2) A complete specification must:*

- (a) describe the invention fully, including the best method known to the applicant of performing the invention; and*
- (b) where it relates to an application for a standard patent – end with a claim or claims defining the invention;*

...

*(3) The claim or claims must be clear and succinct and fairly based on the matter described in the specification.”*

98 His Honour took the view that, once the abandoned claims were omitted, what was claimed by the remaining claims was an invention significantly different from that described in the complete specification. The essence of his reasoning appears, we think, in pars 44 to 46 of the May reasons (45 IPR 617 at 626, 627):

*“44. Where there are several claims in a specification, some claims will be based on only a part of the matter contained in the body of the specification. As I have said above, that of itself is not a basis for complaint. However, if the Specification, when originally lodged, omitted the Abandoned Claims, there would have been a real tension between the disclosure of the invention in the body of the Specification and the delimitation of the invention in the Remaining Claims. It would not so much be a question of disclosure of additional, albeit irrelevant, information. The statements to which I have referred are simply wrong as to what comprises the invention. In that sense, I consider that the Remaining Claims are not fairly based on the matter contained in the Specification, as a whole. They are limited to refrigerants which do not contain chlorine, but the Specification says that the refrigerant element in the composition in which the invention consists can contain chlorine.*

*45. In the light of the tension between the body of the Specification and the invention as delimited by the Remaining Claims, doubt is raised as to the manner in which the invention so delimited is to be performed. In circumstances where the body of the Specification states that a*

*refrigerant containing chlorine may be comprised in the composition in which the invention consists, there must be doubt created, even in the mind of the skilled reader, as to what was intended by the inventor.*

46. *Of course, if the history of the application is examined and the presence of the Abandoned Claims in the unamended form of the Specification is observed, the tension can be explained. In other words, the reader would see that claims were originally made but that the grant of a patent was subsequently revoked by consent, in so far as it related to those claims. Nevertheless, as the Specification presently stands, it does not make clear that an essential element of the invention, as delimited in the Remaining Claims and to which the grant of monopoly is limited, is that the refrigerant in the composition must not contain any halogen other than fluorine.”*

99 As his Honour recognised, there is nothing unusual or improper about a series of claims the first of which may be a broad claim, claiming substantially the entirety of the invention described in the body of the specification (indeed often simply repeating the terms of a consistory clause), the subsequent claims being within the territory marked out by the first (and described in the specification) but claiming smaller portions of it. That practice was noted, without disapproval, in *Welch Perrin & Co Pty Ltd v Worrel* (1961) 106 CLR 588 at 612, 617, 618. The purpose, of course, is to escape, to the maximum extent that may be found possible, the “classical dilemma” described by Gummow J in *Sartas No 1 Pty Ltd v Koukourou & Partners Pty Ltd* (1994) 30 IPR 479 at 497:

*“A claim may be narrow in the sense that by reason of its inclusion of a large number of integers, a potential infringer may escape; but it may be a strong claim in the sense that there is a lesser likelihood of anticipation. If the patentee draws a claim which has less integers, the patentee may be in a stronger position as against an infringer, but in a weaker position to withstand an attack on novelty. That in a sense is a classical dilemma for the person drafting a patent claim.”*

100 Where a series of claims is drawn in that conventional way it will always be the case that most of the claims will incorporate integers or limitations such that what is claimed will be less than the totality of the invention described in the complete specification. It does not follow, as the primary judge recognised, that such claims are not fairly based on the complete specification. Nor, where the conventional drafting method is adopted, is it to be regarded as totally unexpected that wider claims will be found to fail – for example because they are anticipated – but narrower claims found to be valid. But there would be little point, that being so, in adopting that drafting method if the failure of the broader claims was likely to



have the consequence that narrower claims, within the territory described, would then fail because, the wider claim being revoked, they ceased to be fairly based. It is thus, to our minds, a surprising result in this case that the disappearance of the abandoned claims has the result that the remaining claims, otherwise fairly based on the complete specification, are found not to be so based.

101           Certainly the authorities proceed on the basis that, ordinarily at least, what will deprive a claim of fair basis in a complete specification is that the claim is broader than the invention as described in the specification. Thus Barwick CJ stated the question which arose in *Olin Corporation v Super Cartridge Co Pty Ltd* (1977) 180 CLR 236 at 239, 240 as follows:

*“The critical question which in my opinion remains is whether the product claims in question are fairly based on the disclosure of the specification and do not exceed it, or, as it is put, are not too wide, having regard to the terms of the application.”*

102           Barwick CJ was in dissent, but Gibbs J proceeded on the same understanding of fair basis (see at 250) as did Stephen and Mason JJ at 263. In *F Hoffman-La Roche & Co Aktiengesellschaft v Commissioner of Patents* (1969) 123 CLR 529, which involved the question whether claims in a complete specification were fairly based on matter disclosed in a basic application made in Switzerland, Gibbs J said, at 542, 543:

*“If a basic application disclosed a large class of compounds, all of which were claimed to be of pharmaceutical utility, and it were found that the claim was false, in that only some of the compounds were useful, or it appeared that some of the compounds had a particular and peculiar value, there would be much to be said for the view that a claim limited to those compounds selected for the utility or special value would not be fairly based on matter disclosed in the basic application, at least if the basic application did not itself provide a guide to that selection, and a fresh inventive step were necessary to enable it to be made.”*

103           The leading discussion of fair basing in this Court is to be found in the decision of the Full Court in *CCOM Pty Ltd v Jiejing Pty Ltd* (1994) 51 FCR 260. The Court pointed out, in a passage commencing at 278, that the concept of fair basing, introduced by the 1952 Act, dealt with two different kinds of disconformity. One was the disconformity between complete and provisional specifications. The other concerned the relationship between the claims and the body of the complete specification. The Full Court quoted, as explaining the

basis of an attack on validity founded on disconformity between claim and complete specification, the following passage from the speech of Lord Macmillan in *Mullard Radio Valve Co Ltd v Philco Radio and Television Corporation of Great Britain Ltd* (1936) 53 RPC 323 at 347:

*“But a claim may be for an article which is new, which is useful and which has subject-matter, yet it may be too wide a claim because it extends beyond the subject-matter of the invention. The consideration which the patentee gives to the public by disclosing his inventive idea entitles him in return to protection for an article which embodies his inventive idea but not for an article which, while capable of being used to carry his inventive idea into effect, is described in terms which cover things quite unrelated to his inventive idea, and which do not embody it at all.”*

The Full Court proceeded to quote the observation (which we also have quoted) of Barwick CJ in *Olin*. Finally, their Honours referred to observations of Graham J in *Stauffer Chemical Co’s Application* [1977] RPC 33, commenting, at 280:

*“His Lordship pointed out that “fair basing” had been introduced in 1949 for two different reasons. The first was to replace previous provisions dealing with disconformity between provisional and complete specifications. The second was to deal with cases of undue width of claim, such as in Mullard.”*

104 In *Sartas No 1* Gummow J summarised, at 496, the two aspects of fair basing discussed in *CCOM*:

*“The first is that the claimed monopoly should not be wider than warranted by the disclosure to the public made in the body of the complete specification. The second is that the novelty of a claim should not be protected by a priority date given by the provisional specification if the claim is not fairly based on the disclosure in the provisional specification.”*

His Honour added, at 497:

*“As counsel for Mr Leonardis points out, it is no objection to any particular claim that it claims a monopoly for less than every feature described in the body of the specification. It cannot be the case that, for example, a claim is restricted to the precise embodiment which is depicted in the body of the specification.”*

105 The Full Court upheld the decision of Gummow J on that aspect of the case: *Leonardis v Sartas No 1 Pty Ltd* (1996) 67 FCR 126: see particularly at 143. The discussion of principle at 139-144 draws upon, and is entirely consistent with, *CCOM*. Another Full

Court adopted the same approach in *Atlantis Corporation Pty Ltd v Schindler* (1997) 39 IPR 29 at 51, 52. See also *Root Quality Pty Ltd v Root Control Technologies Pty Ltd* [2000] FCA 980 at par 111.

106           There is no doubt that the consistency clause in the complete specification describes the invention as including, as component (A), a refrigerant which may be either an HFC or an HCFC: “a major amount of at least one fluorine containing hydrocarbon containing one or two carbon atoms”. Lubrizol is right, we think, in suggesting that it does so in a way which suggests that HFCs are the preferred option:

*“Liquid compositions also are described wherein the fluorine-containing hydrocarbons also contain other halogen such as chlorine.”*

Similarly, a preferred embodiment is described in which the refrigerant is an HFC:

*“As noted above, the fluorine-containing hydrocarbons useful in the liquid compositions of the present invention may contain other halogens such as chlorine. However, in one preferred embodiment, the hydrocarbon contains only carbon, hydrogen and fluorine.”*

107           In the section of the specification dealing with the background of the invention there are mentioned, as suggested candidates to replace CFCs, three HFCs and one HCFC. Similarly, a table of specific examples of useful fluorine-containing hydrocarbons lists three HCFCs and one HFC; among additional refrigerants listed are four HFCs and three HCFCs. On the other hand, the five examples given as “illustrative of the liquid compositions of the present invention” (that is, compositions of refrigerant and lubricant) all include HFC 134a as the refrigerant.

108           In short, the specification describes a composition the major component of which may be either an HFC or an HCFC. Although more examples are given of HCFCs than of HFCs, it is possible to discern (not surprisingly, as R- 134a was in fact the preferred candidate) a preference for HFCs, or perhaps a particular HFC, R- 134a. That hardly matters. What in our view is important is that the remaining claims claim, as the refrigerant component, a refrigerant which is within the description in the specification; indeed the wider remaining claims claim, as the refrigerant component, a very substantial portion of the total class described; none of the claims extend beyond what is described in the specification. In those circumstances, an application of the authorities we have discussed might be thought to lead to

the conclusion that the remaining claims are fairly based on the matter described in the specification.

109 In coming to the conclusion that that was not so, the primary judge was strongly influenced by the decision of the High Court in *Weiss v Lufft* (1941) 65 CLR 528. That case, however, preceded the introduction of the statutory concept of fair basing. It concerned an application to amend and the head note described what was decided in the following perhaps unduly broad terms:

*“Where an inventor seeks to amend the claims in his specification by disclaiming some features thereof, it is essential that he should also amend the body of his specification to make it conform with the amended claim.”*

110 The proceeding in the High Court was an appeal against the disallowance by the Deputy Commissioner of Patents of proposed amendments to claims contained in the complete specification of an application for a patent: the application and specification had been accepted but the granting of letters patent was opposed; it was in the course of the opposition proceedings that the applicant sought to amend. It was in that context, and in the light of s 36 of the *Patents Act 1903* (Cth) (which provided that a complete specification must fully describe and ascertain the invention and the manner in which it was to be performed, and must end with a distinct statement of the invention claimed), that Williams J, with whom Rich ACJ and McTiernan J agreed, said at 541:

*“But the question remains whether it would be proper to allow the amendment while the body of the specification remains unaltered. The complete specification must fully describe and ascertain the invention. In this description and ascertainment the body of the specification plays an important role, because the function of the claims is to state definitely the invention claimed, and there have been many cases where the inventor has failed to claim the whole of his invention. He must not only discover his gold mine, he must also peg out his claim ... . If, therefore, an inventor, in the light of further knowledge acquired after the date of his application, has ascertained that some features of his invention which he believed to be novel have been anticipated, and he desires to amend his claims to disclaim those features, it is, in my opinion, essential that he should also amend the body of his specification so as to make it conform to the more limited invention which he now desires to describe and ascertain. A perusal of the English cases shows that it is the practice there to so amend the body of the specification at the same time as the claims are amended: ... . This does not mean that the description must be completely rewritten. Each case must depend upon its own circumstances. In some instances the description might not have to be altered at all. But generally speaking it would not be permissible to amend*

*the claims substantially without at the same time amending the body of the specification.”*

111 It is, in our view, a considerable leap from that proposition, stated in the context we have described, to the further proposition that where a claim for the entirety of the invention described in the body of a specification fails, for example, for want of novelty, its revocation leaves a more limited claim, otherwise valid, liable to revocation also on the ground that it is not fairly based on the matter described in the specification. We do not say that that could never be so. It is unnecessary to decide that point. There may be cases where what is left is so limited, and so substantially different from the “gold mine”, that it would be found not to be fairly based on the specification. The primary judge considered this to be such a case because, deprived of the explanation given in the abandoned claims, the skilled reader would see a tension between the broad description of the refrigerant in the specification and the substantially narrower remaining claims, and would be confused by it. With respect, we do not think that that is correct. We do not think that the skilled reader would have any such difficulty. It would, on the contrary, be readily apparent that, of the total field described, Lubrizol claimed only that portion in which the only halogen in the refrigerant was fluorine, that being a preferred embodiment and the only embodiment exemplified in the concluding examples, in the complete specification, of the composition.

112 For those reasons, the cross-appeal in our view should be allowed.

### **Amendment**

113 It follows from our conclusion on fair basing that no amendment is needed in order to save the remaining claims. From that, combined with Lubrizol’s concession as to the abandoned claims, it would ordinarily follow that the abandoned claims would be revoked, the remaining claims being valid. Lubrizol, however, sought an order directing amendment of the patent and such an order has been made. It was sought, of course, in the light of the primary judge’s findings on fair basis and in order to preserve the remaining claims. In those circumstances we propose to invite submissions (in the absence of agreement) as to the orders which should follow from our conclusions on fair basing; and it is desirable that we should say something about amendment.

114 The relevant statutory provisions are to be found in Ch 10 of the 1990 Act. Section 105 provides:

- “105(1) *In any relevant proceedings in relation to a patent, the court may, on the application of the patentee, by order direct the amendment of the patent, the patent request or the complete specification in the manner specified in the order.*
- (2) *An order may be made subject to such terms (if any) as to costs, advertisements or otherwise, as the court thinks fit.*
- (3) *The patentee must give notice of an application for an order to the Commissioner, who is entitled to appear and be heard, and must appear if the court directs.*
- (4) *A court is not to direct an amendment that is not allowable under section 102.*
- ...”

Section 102(1) provides:

- “102(1) *An amendment of a complete specification is not allowable if, as a result of the amendment, the specification would claim matter not in substance disclosed in the specification as filed.*”

Section 114(1) should be mentioned also. It provides:

*“Where a claim of a complete specification claims matter that was in substance disclosed as a result of amending the specification, the priority date of the claim must be determined under the regulations.”*

115 The amendments which Lubrizol sought to make, and which the primary judge directed, fell into two categories. The first category involved the deletion of the abandoned claims and consequential amendments of the remaining claims, not altering their substance. The appellants accepted that those amendments were not prevented by s 102(1). The second category, however, was controversial. It involved the amendment of the body of the specification so that the refrigerant component of the composition described was an HFC only. His Honour summarised the effect of those proposed amendments in par 19 of the October reasons as being:

- “• *to limit the fluorine-containing hydrocarbon to one where fluorine is the only halogen present (pages 1, 5 and 8 of the Specification as proposed to be amended);*

- *to remove general references to fluorine-containing hydrocarbons which contain other halogens such as chlorine (pages 6, 8 and 25 of the Specification as proposed to be amended);*
- *to remove specific references to particular fluorine-containing hydrocarbons which contain other halogens such as chlorine (pages 8 and 9 of the Specification as proposed to be amended);*
- *in the light of the above, to remove otiose statements (page 26 of the Specification as proposed to be amended); and*
- *to correct clear typographical errors (pages 27 and 28 of the Specification as proposed to be amended)."*

116 The appellants argued before the primary judge, and again before us, that the substantial amendments in the second category were not allowable under s 102(1) and were therefore prohibited by s 105(4). Despite his conclusions on fair basing, his Honour rejected that submission. He said (October reasons pars 25 to 28):

- “25. *A specification must refer to a single invention. Under section 40(4), the claim or claims in a specification must relate to one invention only. As I indicated previously ... it is common practice for a specification to contain a series of claims descending to more and more particularity in later claims in the hope that, if the earlier should be said to be too wide, the latter would be valid and effective to catch some infringers. It is no objection to any particular claim that it claims a monopoly for less than every feature described in the body of the relevant specification.*
26. *The revocation of a patent so far as it relates to a particular claim does not have the consequence that all claims in the patent are revoked. Clearly, the Specification, as filed, claimed an invention that permitted certain HCFCs as the refrigerant element in the composition in addition to HFCs. That is to say, it identified a synthetic lubricant that was acceptably miscible with certain HCFCs. Lubrizol subsequently acknowledged that such an invention had been anticipated and, accordingly, it was not entitled to maintain the claims for such an invention.*
27. *However, in accordance with the common practice that I have described, Lubrizol included the narrower claims in the Specification. Claim 2 in substance discloses the essence of the invention, namely, the formulation of a lubricant that would be soluble in, or miscible with, relevant HFCs including R-134a and any other fluorine-containing hydrocarbon containing one or two carbon atoms wherein fluorine is the only halogen present.*

28. *While, for the reasons I have previously published, I do not consider that that invention was fairly based on the matter described in the body of the Specification, I consider that the amendment of the Specification to ensure that there is compliance with that requirement does not have the effect that the Specification would claim matter not in substance disclosed in the Specification as filed. The Specification amended as proposed will claim a liquid composition comprising a major amount of at least one fluorine-containing hydrocarbon wherein fluorine is the only halogen present. That matter was, in substance, disclosed in the Specification as filed. Specifically, it was disclosed in Claim 2 and on pages 8 and 9 of the body of the Specification as described above ... .”*

117 In our view his Honour was clearly right and, with a qualification to which we shall come, substantially for the reasons he gave, in deciding that s 105(4) did not prevent the amendment. Although usually little is to be gained by comparing facts of different cases, this case is, we think, *a fortiori* *RGC Mineral Sands Pty Ltd v Wimmera Industrial Minerals Pty Ltd* (1998) 89 FCR 458: see particularly the discussions in the judgment of Burchett J at 460-462 and in the judgment of Carr and Goldberg JJ at 467, 468.

118 The qualification is this. There is much authority for the proposition that there is a close relationship between the test for fair basing and the question whether matter is in substance disclosed in a specification. It is unnecessary to consider whether it is appropriate to go so far as to say that the two tests are “virtually the same” (*Ethyl Corporation’s Patent* [1972] RPC 169 at 195). For the proposition that there is a close relationship there is no need to do more than refer to the decisions of the Full Court of this Court in *CCOM* at 280-282; *Leonardis* at 137-143; and *RGC Mineral Sands* at 460, 461. It will, we should think, be a rare case indeed where a claim which claims matter in substance disclosed in the specification as filed is not, equally, fairly based on the matter described in the specification (and vice versa): a comparison of his Honour’s reasoning on amendment and ours on fair basing perhaps shows, with respect, why that is so.

119 It was suggested that, even if the amendment was not prohibited by s 105(4), nevertheless s 114 applied so as to postpone the priority date. The primary judge rejected the submission after carefully considering the history of the provision. The submission was repeated, but not elaborated, on the appeal. We cannot see how it could be said, in this case,



that, if the amendment were made, the remaining claims would claim the matter in substance disclosed as a result of amending the specification, given our conclusions about s 102(1).

120           Having decided that the statute did not prevent him from directing the amendment sought, the primary judge proceeded to consider whether, as a matter of discretion, he should direct it. The discretionary question no longer arises in the form in which his Honour considered it. The amendment is allowable. Given our conclusions as to fair basing, if the amendment stands as directed Lubrizol will have the benefit of valid claims the ambit of which will be precisely the same as those which would remain if there were no amendment and the abandoned claims were revoked. The amendment would effect some desirable tidying-up but Lubrizol would gain nothing else of substance from it. Nor would the appellants or anyone else suffer any detriment as a result of it. On that footing, there is no reason why, as a matter of discretion, the amendment should not be made as the primary judge directed.

121           Before the primary judge, of course, matters appeared very differently. The patent would have been wholly invalid without amendment because of his Honour's finding that the remaining claims were not fairly based on matter described in the specification. It was submitted before his Honour – and again before us – that Lubrizol ought not be permitted to amend in circumstances where, it was said, it had persisted in asserting all the claims even though it had known for many years that it could not support the now abandoned claims.

122           Plainly, as his Honour recognised in the course of a careful and extended consideration of the circumstances, there was a substantial factual basis for the appellants' submissions. Events in the United States, Canada and Europe had from 1993 alerted Lubrizol to the problem that claim 1 and dependent claims were probably invalid for want of novelty. Lubrizol had amended its patent in other places so as to limit it to a composition the refrigerant component of which was an HFC. It had had lengthy correspondence with its advisers in Australia as to whether a similar course should be taken in Australia. When Lubrizol commenced the infringement proceeding in this Court, it alleged infringement of the wide claims in circumstances where correspondence with its advisers made it clear that it did not intend to rely on the wide claims but (at that stage) proposed to amend them. It was not until October 1998 that Lubrizol's solicitors informed the appellants' solicitors that Lubrizol did not submit that claim 1 was valid. Nevertheless, it was not finally decided to seek an

amendment until, ultimately, it became necessary to do so in order to preserve the remaining claims: the reason no amendment was sought earlier was the necessity, upon an application to amend, to disclose privileged material.

123 After considering the circumstances, his Honour held that he was not satisfied that Lubrizol had endeavoured to obtain any unfair advantage by its failure to apply earlier for an amendment; there was no evidence that any entity had acted to its detriment because of the invalid claims; nor was there any evidence that Lubrizol was motivated by any desire to prevent what would be infringement of claim 1 and its dependent claims only. His Honour also found that the delay on the part of Lubrizol, though considerable, was not unreasonable. The tactics it adopted were legitimate. The delay was not motivated by an intention to gain from it. Accordingly, his Honour exercised his discretion in favour of directing that the amendment be made.

124 The appellants attacked that exercise of discretion, principally on the basis that the primary judge failed to take sufficient account of Lubrizol's "covetousness" in maintaining the invalid claims despite its early knowledge of their probable invalidity and of the very considerable delay both before informing ICI that claim 1 would not be relied on and before seeking amendment. Those were, of course, powerful factors relevant to the exercise of the discretion. But his Honour took them into account and in our view his decision was one which was open to him. In the circumstances, it is not necessary for us to deal with that aspect of the appeal in greater detail.

### **Infringement**

125 The infringement issue is very straightforward. Lubrizol alleged that Woolworths, Austral, Woolworths (Victoria) and Lawrence infringed claims 2, 10, 13, 14, 15 and 17. Before the primary judge the alleged infringers claimed that there was no infringement because there was no "liquid composition" and that, as to claim 10, the composition was not present in the percentages of that claim. No argument was directed, before us, to the second of those two questions: it would not, of course, make any difference in relation to the other claims said to have been infringed. The alleged infringers made the following admissions, recorded by the primary judge in par 187 of the March reasons:

*"(i) In or about 1993 the entire air conditioning and refrigeration systems at Woolworths Penrith supermarket were converted, or retrofitted and*

*the CFC refrigerant was replaced with either of two HFC refrigerants marketed by ICI under the brand names KLEA 61 and KLEA 66 and the mineral oil lubricant was replaced with a synthetic ester lubricant marketed by ICI under the name EMKARATE RL32S.*

- (ii) In or about 1993, the entire air conditioning and refrigeration systems at Woolworths Victoria Melton supermarket were converted or retrofitted and the CFC refrigerant was replaced with either KLEA 61 or KLEA 66 and the mineral oil lubricant was replaced with EMKARATE RL 32S.*
- (iii) The conversion or retrofitting referred to in (i) above was carried out by the employees or servants of Austral.*
- (iv) The conversion or retrofitting referred to in (ii) was carried out by the employees or servants of Lawrence.*
- (v) The refrigeration systems at the Melton supermarket currently operate using a refrigerant of a least one fluorine containing hydrocarbon containing one or two carbon atoms.*
- (vi) Each of KLEA 61 and KLEA 66 comprised a mixture of three fluorine containing hydrocarbons containing one or two carbon atoms.*
- (vii) EMKARATE RL32S comprised at least one soluble organic lubricant comprising at least one carboxylic ester of a polyhydroxy compound containing at least two hydroxy groups.*
- (viii) EMKARATE RL32S is an ester of pentaerythritol with 60 parts by weight of linear C<sub>7</sub> acid and 40 parts by weight of branched C<sub>8-10</sub> acid with the 40 parts branched acid mixture of C<sub>8-10</sub> split into a mixture of 50:40:10 of C<sub>8</sub>, C<sub>9</sub> and C<sub>10</sub> respectively, and the pentaerythritol containing about 2% dipentaerythritol.*
- (ix) KLEA 61 is a ternary mixture of R-32, R-125 and R-134a.”*

126 Mr Harrington gave evidence that the refrigerant and lubricant described in each of the relevant claims was present in the systems operated by Woolworths and Woolworths (Victoria). Mr Dobney gave evidence that the refrigerant and lubricant were present in liquid solution, in the proportions defined in the relevant claims, in the systems between the liquid receiver attached to the condenser and the thermostatic expansion valve which opens to the evaporator (that is, while under pressure). Senior counsel for the appellants contended that there was no “composition”. That was so because refrigerant and lubricant were separately charged to the systems, mixing occurring only as the inevitable result of the working of the systems (we have described the process earlier in these reasons). The word “composition”, it

was said, connotes a discrete thing made up in fixed proportions: in practice the two components, it was said, are not present for any defined period in specified proportions. There is never an identifiable or identified composition.

127            Secondly, it was submitted that any composition formed within the apparatus was not a “liquid” composition – or, more accurately, Lubrizol did not prove that it was. The specification stated:

*“Throughout this specification and claims, all parts and percentages are by weight, temperatures are in degrees Celsius, and pressures are at or near atmospheric pressure unless otherwise indicated.”*

128            There was, it was said, no indication otherwise in the claims. Thus the liquid composition, if there was to be an infringement, must be present at or near atmospheric pressure. That had not been shown to be the case; in fact, the evidence showed the contrary to be the case.

129            As to the second point, plainly the patent refers to a liquid composition said to be useful for the purpose of refrigeration. Such a composition, plainly on the evidence, will not be in liquid form at atmospheric pressure. Nor could a sensible construction of the claims, for that reason, require the composition to be in liquid form throughout its journey around the refrigeration loop. Indeed, it is of the essence of the process which we have described that that will not be so.

130            As for “composition”, again approaching the question of construction in light of the process in which the “composition” is to be used, there is, in our view, nothing to be said for the proposition that the “composition” must be composed separately, before introduction to the refrigeration system. That which occurs after the two components are separately charged results – inevitably results, on the evidence – just as much in a “composition”: that being, as the patent clearly indicates, a liquid made up of the two components described.

131            For those reasons, which are in substance those of the primary judge, we would uphold his Honour’s conclusion on infringement.

## **Conclusion**

For the reasons we have given, the result is in substance that the appeal will be dismissed and the cross-appeal allowed. As Lubrizol has succeeded on all issues, it should have its costs of the appeal and cross-appeal. It should also, no doubt, have its costs of the further argument, before the primary judge, on fair basing. For the reasons already given, we shall defer the making of final orders: Lubrizol should file and serve, not later than 4 October 2000, short minutes of the orders for which it contends. If the form of orders is not agreed, arrangements can then be made to deal with any remaining issues between the parties.