



* IN THE HIGH COURT OF DELHI AT NEW DELHI

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Reserved on: April 24, 2025 Pronounced on: May 29, 2025

C.A.(COMM.IPD-PAT) 12/2023

LUMMUS NOVOLEN TECHNOLOGY GMBHAppellant

Through: Ms. Vindhya S. Mani, Ms. Naina Gupta, Mr. Bhuvan Malhotra, Ms. Vedika Singhvi, Mr. Ritwik Sharma, Ms. Surbhi Nautiyal, Mr. Devesh Aswal and Ms. Narshita Agarwal, Advs.

Arnav Mittal, Adv.

Versus

THE ASSISTANT CONTROLLER OF PATENTS AND DESIGNSRespondent

Through:

Ms. Nidhi Raman, CGSC with Mr.

CORAM: HON'BLE MR. JUSTICE SAURABH BANERJEE

JUDGMENT

Preface:

1. *Vide* the present appeal under *Section 117A* of the Patents Act, 1970^{1} the appellant seeks to assail the order dated 30.01.2023 passed by the Assistant Controller of Patents and Designs², who has rejected its Indian

¹ Hereinafter referred as "1970 Act"

² Hereinafter referred as "*Controller*"





Patent Application No.4278/DELNP/2015 dated 19.05.2015³ under Section 15 of the 1970 Act since "...The subject matter of claims 1-9 is not allowed u/s 2(1)(ja) as it does not involve any inventive step and is obvious in view of the combined teachings of cited documents D1 to D3. ...". As such, in effect the subject application has been rejected on the ground that it involves no "inventive step" under Section $2(1)(ja)^4$ of the 1970 Act.

2. Therefore, the short question for determination before this Court is "Whether any "inventive step" under Section 2(1)(ja) of the 1970 Act are involved in Claim no.1 to 9 of the subject application filed by the appellant?".

Brief narrative facts:

3. The appellant, Lummus Novolen Technology Gmbh, is a global provider of process technologies and value-driven energy solutions, including performance polypropylene (PP) polymers, a family of products that have the properties of recycled polymers and is a company incorporated under the laws of Germany and has its registered office at Gottlieb Daimler Str. 8 68165, Mannheim, Germany.

4. The appellant filed the subject application with title "HIGH PERFORMANCE ZIEFLERNATTA CATALYST SYSTEMS, PROCESS FOR PRODUCING SUCH MgC12 BASED CATALYSTS AND USE THEREOF"

³ Hereinafter referred as "subject application"

⁴ Section 2(ja) "*inventive step*" means a feature of an invention that involves technical advance as compared to the existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art.





before the Patent Office, New Delhi⁵ on 19.05.2015, whereafter the request for examination thereof was filed on 19.05.2015, and the same was then published in the Patent Journal on 22.07.2016.

5. In the First Examination Report⁶ issued by the Patent Office on 12.02.2019, majorly the following issues were raised:-

"- Subject matter of claims 1-13 lacks novelty under Section 2(1)(i) of the Act in view of the documents:

i. D1: EP 1840138 Al; annexed herewith as Document 5.

ii. D2: EP 1609805 Al; annexed herewith as Document 6.

iii. D3: WO 2009152268 Al; annexed herewith as Document 7.

- Subject matter of claims 1 to 13 lacks inventive step under Section 2(1)(ja) of the Act in view of the documents;

- *i.* D1: EP 1840138 A1
- *ii.* D2: EP 1609805 Al
- *iii.* D3: WO 2009152268 Al

- The abstracts, title and drawings do not meet the criteria of sufficiency of disclosure under Section 10(4) of the Act read with Rule 13(7) and Rule 15 of the Patent Rules, 2003.

- Subject matter of claims 1-13 do not meet the requirements of
- *definitiveness under Section 10(4)(c) of the Act.*

- Subject matter of claims 2-13 are inconsistent and beyond the scope of claim 1."

6. In response thereto, on 10.05.2019, the appellant also filed its amended claims before the Patent Office, whereafter, a Hearing Notice dated 23.02.2021 was issued by the Controller for 27.04.2021, however, since the appellant filed a request for adjournment, though the Controller issued an extended Hearing Notice for 13.08.2021 but raised the following substantive objections under *Section 14* of the 1970 Act:-

⁵ Hereinafter referred as "*Patent Office*"

⁶ Hereinafter referred as "FER"





"- The subject matter as claimed in claims 1-10 of the alleged invention is not patentable under Section 2(1)(ja) in view of the further cited documents;

- *i. Dl: EP 1840138 Al*
- *ii.* D2: EP 1609805 Al
- *iii.* D3: WO 2009152268 Al

- The subject matter of the claims in the Indian Patent Application No. 4278/DELNP/2015 conflicts with the subject matter of the claims in Indian Patent Application No. 4277/DELNP/2015.

- The subject matter of claims 2-10 are inconsistent and beyond the scope of claim 1."

7. After attending the hearing, the appellant filed a written submission on 08.10.2021 wherein, it amended and deleted Claims 1 and 10, leaving amended Claims 1 to 9, whereafter, the Controller passed the impugned order on 30.01.2023, refusing to grant the Patent application.

8. Aggrieved thereby, the appellant has preferred the present appeal.

Contentions of learned counsel for Appellant:

9. Ms. Vindhya S. Mani, learned counsel for the appellant raised the following contentions:-

9.1. Since the impugned order is silent about or has any proper reasoning therein, as to why arguments in the written submissions were not found convincing to the respondent which violates the principles of natural justice. For this, reliance was placed upon *Wisig Networks Private Limited vs. Controller General of Patents, Design, Trademark & Geographical Indications*⁷; *Assistant Commissioner Kota vs. Shukla & Bros*⁸; and *Kranti*

⁷ 2020 SCC OnLine IPAB 198

⁸ (2010) 4 SCC 785





Associates Private Limited & Anr. vs. Masood Ahmed Khan & Ors.⁹.

9.2. The Controller has not considered the technical advancement offered by the claimed invention i.e., new process for producing a Ziegler-Natta catalyst having improved activity of olefin polymerization essentially from non-phthalate polymers and the activity of the catalyst leading to higher product yields and reducing the quantity of the catalyst for olefin polymerization reaction which in turn reduces the catalyst cost and the amount of catalyst impurities in the polymers (reduced ash content), resulting in polymers with better performance profile and the invention in the present patent application relates to an Ziegler-Natta catalyst, particularly an improved method for making a Ziegler-Natta catalyst essentially using diether compounds as internal donor.

9.3. The Controller has merely reproduced the paragraphs in the impugned order from the decision of the European Patents Office dated 16.03.2021 in the corresponding European Application No.13802264.5, which is contrary to the settled position of law, particularly, since the patent jurisprudence is territorial in nature and each patent application has to considered on its own merits within every jurisdiction and not use 'cut and paste' methodology. For this, reliance was placed upon *R.C. Sharma vs. Union of India & Ors.¹⁰*; *Dolby International Ab vs. The Assistant Controller of Patents & Designs¹¹*.

United States of America, China, Japan, Republic of Korea and Israel which

⁹ (2010) 9 SCC 496

¹⁰ (1976) 3 SCC 574

¹¹ 2023:DHC:1854





clearly indicates inventive merit, patentability, commercial interest and industrial applicability of claimed invention. For this, reliance was placed upon *Stempeutics Research Pvt. Ltd. vs. Assistant Controller of Patent & Designs 2020*¹².

9.5. The refusal of grant of patent by the Controller on the ground of lack of inventive step of the pending amended claim in view of the cited prior art documents **D1** to **D3** hold no merit for the reason that none of the references, collectively or individually, teach or suggest the claimed invention, or direct modifications of prior art documents to arrive at the present invention.

9.6. The Controller has wrongly placed reliance on Examples 13 and 15 of the cited prior art document **D1** relating to the catalyst allowing the preparation of polypropylene with a molecular weight distribution of 7 and document D1 in Examples 13 and 15 which teaches about the use of phthalate based cyclic ester compound to produce desirable polymer i.e., diethyl-cyclohex-4-ene-1,2-dicarboxylate diethyl i.e.. 1.2.3.6tetrahydrophthalate and diisobutyl cyclohexane-1,2-dicarboxylate also known as diisobutyl hexahydrophthalate. This is, since the invention in the present matter exclusively involves non-phthalate-based catalysts for production of polymers and phthalate-based compounds pose health and environmental challenges, *whereas*, phthalate free polymers eliminates the safety concerns regarding health and environment, particularly related to packaging food and health products, therefore, the cited prior art document D1 is an unrelated

¹² SCC OnLine IPAB 16





prior art document and does not teach or suggest about Ziegler-Natta catalyst system comprising a diether compound as the only internal electron donor.

9.7. The Controller has incorrectly found Examples 8, 10 and 14 of the cited prior art document **D2** which disclose polypropylenes having molecular weight distribution of 7 or 7.1 which is included in the range of 5.75 to 9, however, the claimed process pertains to "a spherical spray-cooled MgCl2*xROH 1.5 to 6*". The cited prior art document **D2** is directed to a composite carrier of catalysts for olefin polymerization, particularly, since it teaches about a composite carrier of catalysts for propylene polymerization comprising magnesium halide and silica material with an average particle size of less than 10 microns. On the contrary, such composite carrier is excluded by the carrier recited in Claim 1 of the subject invention and "... ... if a catalyst is prepared by employing I, 3-diether compounds as internal electron donor yet no composite carrier according to the present invention, the obtained polymer has a narrower molecular weight distribution as shown in Comparative Example... ...". More so, cited prior art document D2 does not teach about the use of 1,3-diether compounds as the internal electron donor while obtaining an activity and hydrogen response suitable for the production of propylene polymers having a molecular weight distribution (PI(GPC)) in the range from about 5.75 to about 9.

9.8. The cited prior art document **D3** fails to teach about broader molecular weight distribution i.e., greater than 5.75 as desired by the present invention and a person *skilled in the art* from teachings thereof would be prompted to use phthalates such as dialkylphthalates like diaisobutylphthalate (D-i-BP) or

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di-n-butylphthalate (D-n-BP) as preferred internal donors over diethers, and/ or the electron donors of the cited prior art document **D3** in combination with the cyclic ester of other disclosures. Thus, the cited prior art document teaches away from the claimed invention and further, it is important to note that document **D3** fails to recognize the differences in phthalate and diethers as internal electron donors, and the use of the claimed diethers resulting in unexpectedly claimed advancements. Hence, document **D3** fails to teach, suggest, or motivate a person *skilled in the art* use of diethers to make a Ziegler-Natta catalyst for the polymerization of olefins, wherein the catalyst has unusually high activity, excellent hydrogen response and stereoselectivity while the molecular weight distribution is comparable to phthalate containing Ziegler-Natta catalysts.

9.9. The impugned order is bereft of any basis/ assertion/ reasoning viz. why a person *skilled in the art* would read the prior art documents together or that why such a person *skilled in the art* after reading the closest prior art document **D1** would be motivated to read the cited prior art documents **D2** and **D3** for arriving at the claimed invention. More so, there is no reasoning qua linking the cited prior art documents **D1**, **D2** and **D3** together.

9.10. The Controller has not taken into consideration the settled judicial precedents for raising the ground of lack of inventive step, and has combined the cited prior art documents **D1**, **D2** and **D3** together in mere hindsight, and that too despite lack of motivation available to a person *skilled in the art* which is not permissible under the law. For this, reliance was placed upon *F*.





Hoffmann-La Roche Ltd. & Anr. vs. Cipla Ltd.¹³; Bristol-Myers Squibb Holdings Ireland Unlimited Company & Ors. vs. BDR Pharmaceuticals International Pvt. Ltd. & Ors.¹⁴; Prism Cement Ltd. vs. The Controller of Patents & Designs¹⁵.

9.11. The prior art taught the use of a laminate comprising of a PVA film in combination with a non-woven fabric. Reliance was placed on the judgement of the Madras High Court in *Kuraray Co. Ltd. vs. Assistant Controller of Patents & Designs*¹⁶, wherein the court was of the view that a person skilled in such prior art would not be motivated to consider the use of a PVA film on a standalone basis for resolving the problem that the claimed invention intended to resolve.

9.12. Lastly, in *Novozymes vs. Assistant. Controller of Patents*¹⁷ while dealing with two cited prior art documents **D8** and **D9** therein, the High Court of Madras held that the prior art document **D9** solves a different problem then the claimed invention and that the cited prior art document **D8** was closer to the claimed invention but that too would not be able to make the claimed invention obvious to the person *skilled in the art*.

Contentions of the CGSC for Controller:

10. *Per contra*, Ms. Nidhi Raman, learned Central Government Standing Counsel for the respondent Controller raised the following contentions:-

10.1. The appellant herein had simultaneously filed two almost similar

¹³ 2015:DHC:9674-DB

^{14 2020} SCC OnLine Del 1700

¹⁵ 2020 SCC OnLine IPAB 25

¹⁶ 2023 SCC OnLine Mad 7568

¹⁷ 2024:MHC:1344





patent application nos. 4277/DELNP/2015 and 4278/DELNP/2015 before the Indian Patents Office on 19.05.2015. Both were heard separately on 15.09.2021 itself by the same Controller, who after detailed examination, allowed the patent application no. 4277/DELNP/2015 pertaining to a process for manufacturing a Ziegler-Natta catalyst with a specific activity and hydrogen response leading to the production of propylene polymers within a defined molecular weight distribution range (PI(GPC)) of 5.75 to 9 on 31.01.2022 but dismissed the other patent application no. 4278/DELNP/2015 on the grounds that the invention therein was deemed exceedingly apparent in light of the cited prior art documents **D1**, **D2** and **D3**, which is under challenge herein.

10.2. The above said patent application no. 4277/DELNP/2015 claimed two similar distinguishing features (i) in relation to step (e) of the process, which involves filtering the reaction mixture while it was still in a heated state; and (ii) using a 1, 3-diether compound as an internal electron donor and the applicant's submission for Claim 9, made subsequent to the hearing, clearly indicates that both the Ziegler-Natta catalysts described in said applications exhibited similar levels of activity and hydrogen response. In the impugned order, the Controller has extracted specific passages from the cited prior art documents **D1**, **D2** and **D3** in order to illustrate the similarities between the present patent application and the disclosures contained in the cited prior art documents **D1**, **D2** and **D3** and there was apparent overlap which was coincidental and not indicative of any improper influence. Moreover, the cited prior art document **D1** is considers as a closest prior art, as it *CA.(COMM.IPD-PAT) 12/2023*





demonstrates a catalyst preparation process akin to the present patent application. Also, Example 13 of the cited prior art document **D1** demonstrates the preparation of polypropylene with a molecular weight distribution falling within the range targeted by the present patent application (5.75 to 9) and it employs a catalyst preparation process that shares similarities with the present patent application, including the use of the same internal electron donor, 2-isobutyl-2-isopropyl-1, 3-dimethoxypropane, and involved a step of hot filtration. As such, the specifics of Example 13 of the cited prior art document **D1** are elucidated in the inventive step section.

10.3. The cited prior art document **D2** also offers processes for the preparation of Ziegler-Natta catalyst yielding polypropylene with a similar molecular weight distribution and the disclosed processes in Examples 8, 10, and 14 of the cited prior art document **D2** exhibit the production of polypropylenes with a molecular weight distribution of 7 or 7.1, which fell within the targeted range of 5.75 to 9, which is similar to what is described in the present patent application. As such, the specifics of Examples 8, 10, and 14 of the cited prior art document **D2** are elucidated in the inventive step section.

10.4. The cited prior art document **D3**, which was originating from the same applicant as the present invention, describes a process exactly identical to the one claimed in the present patent application (Claim 1 and paragraphs [0018]- [0028]), *albeit* with only a minor distinction in the broader definition of the electron donor, as found in Claims 1, 15 of the cited prior art document **D3**. Also, paragraph [0040] of the cited prior art document **D3** suggests the *C.A.(COMM.IPD-PAT)* 12/2023 *Page 11 of 33*





use of non-substituted and substituted (CL-CLO alkyl)-1,3-propane diethers and derivatives of succinates as internal electron donors. The cited prior art document **D3** also specifies a spherical MgCl2-xROH support, ideally characterized by a d50 particle size ranging from 40 to 90 microns, which can be produced through the spray-cooling method. Similarly, paragraph [0061] of the same cited prior art document **D1** mentions the use of a sixty-micron (d50) MgCl2.3.2EtOH support, which is similar to that used in the examples of the present patent application. As such, a skilled person in the field would employ such a support in the process described in Example 13 of the cited prior art document **D1**, incorporating an extraction step as disclosed in the general process of the cited prior art document **D3**. The expected result would thus be a process in alignment with the claims outlined in the present invention (Claim 1).

10.5. The cited prior art document **D1** involves the use of both ethers and diethers, however, it indicated that either of these compounds can be employed. In fact, paragraphs [0072] & [0079] of the cited prior art document **D1** suggest the use of certain diethers in combination with the solid titanium catalyst component. The cited prior art document **D1** also establishes that the use of similar 1,3-diether compounds can lead to the production of polypropylene (pp) with an MWD (GPC) of 7 and the recovery of a solid portion via hot filtration, emphasizing that this information is not limited to the specific compounds mentioned in the examples.

10.6. The appellant emphasizes the use of diethers in combination with silica in the cited prior art document **D2**, however, similar 1,3-diether compounds *C.A.(COMM.IPD-PAT)* 12/2023 Page 12 of 33





can be used in Ziegler Natta catalysts to achieve a polypropylene (pp) with an MWD (GPC) of 7.1, as demonstrated in D2 and the present invention also utilizes silica inherently present in the MgCl2-xRoH support, as evident from the subject matter of Claim 1 which claimed a similar Ziegler-Natta catalyst with silica as the carrier. Though this was initially filed with the FER response of the present patent application but was later deleted by the appellant due to conflicts with the already granted application 4277/DELNP/2015. In any event, the appellant never provided any studies demonstrating that the properties of the catalyst, including its activity and hydrogen response, resulting in the production of propylene polymers with a specific molecular weight distribution (PI(GPC)), which are solely attributed to the use of diether compounds as internal electron donors. The already granted patent application no. 4277/DELNP/2015, featuring a similar Ziegler-Natta catalyst with silica as the carrier and employing similar 1,3-diether compounds as internal donors, yields the same results regarding catalyst properties and polypropylene production.

10.7. Lastly, both cited prior art documents **D1** and **D2** are identified as the most relevant for the present invention due to their disclosure of using an internal electron donor composed mainly of a diether compound and filtering the pre-catalyst mixture while it is still hot. The cited prior art document **D3**, while using phthalate compounds as internal donors, outlines a process that aligns closely with the parameters of the cited prior art documents **D1** and **D2** as the resulting solid catalyst component therein demonstrates activity and hydrogen response suitable for producing propylene polymers with a *C.A.(COMM.IPD-PAT)* 12/2023 *Page 13 of 33*





molecular weight distribution similar to the present invention. Consequently, the present invention emerges as a predictable outcome when the process steps and parameters of the cited prior art document **D3** are combined with the disclosures of the cited prior art documents **D1** and **D2** which utilize a diether compound as an internal electron donor and hot filtration. In essence, the present invention lacks inventive step when considering the amalgamation of cited prior art document **D3** with the teachings of the cited prior art document **D3** with the teachings of the cited prior art document **D3** with the teachings of the cited prior art document **D3** with the teachings of the cited prior art document **D3**.

Discussion, analysis and reasonings:

11. This Court has heard both Ms. Vindhya S. Mani, learned counsel for the appellant and Ms. Nidhi Raman, learned Central Government Standing Counsel for the respondent, as also perused the documents on record and taken note of the judgments cited by them as well.

12. Before proceeding, the abstract from the present patent application is reproduced as under:-







13. From the above abstract, it is borne out that the subject application entails an improved Zeigler-Natta catalyst and method of making the improved catalyst. However, the same is sufficient for grant of a patent has to be seen taking into account the relevant provisions of *Section* 2(1)(ja) of the 1970 Act.

14. Section $2(1)(j)^{18}$ of the 1970 Act reveals that grant of a patent of an *invention*' is dependent upon *three factors*, namely, the patent has to be a *new product or process*' involving an *inventive step*' and having an *industrial application*'.

15. Similarly, the said 'inventive step' under Section 2(1)(ja) of the 1970 Act must involve 'technical advance as compared to the existing knowledge' either having an 'economic significance' or both 'technical advance as compared to the existing knowledge' and 'economic significance', and furthermore the said invention should not be 'obvious to a person skilled in the art'.

16. In the present case, the Controller has refused the grant of the patent application of the appellant since the invention in subject application did not have an *inventive step* as defined under of *Section* 2(1)(ja) of the 1970 Act. As such the invention did not involve an *'inventive step'* as the Claim(s) made therein were *'obvious to a person skilled in the art'*.

17. Therefore, while dealing with Section 2(1)(ja) of the 1970 Act, the prime factors for an '*inventive step*', is that there has to be some '*technical*

¹⁸ 2(1)(j)"*invention*" means a *new product or process* involving an *inventive step* and capable of **industrial application**;





advance as compared to the existing knowledge' and which is not to be (vi) obvious to a person skilled in the art'. As such, an invention in a patent application has to have a technical advancement from the existing information available to the public at large in the form of prior art(s); and the embodiments in the Claim(s) made therein when seen from the eyes of a person skilled in the art must not be obvious, so that a person skilled in the art comes to the same invention, so that the monopoly granted to a patentee is justified by the patentee's contribution in the art for the term of the patent.

18. Therefore, all Claim(s) in a patent application like the present one before the Controller have to be evaluated upon considering the cited prior art documents therein, with a view to verify, if the invention so claimed does indeed involves a major technical advancement(s) and not minor changes/ variations. This is particularly to augment but not hamper, and *vice versa*, the natural development(s)/ advancement(s) in an Industry without monopolising the patent in favour of the patentee and recognising the contribution of an inventor in the art by balancing the good of the public and/ or of the said industry.

19. Oner time, various test(s), like those hereunder, have evolved for judging the scales of '*obviousness*' and '*lack of inventive step*':-

i. *Obvious to try approach* is to identify if a patentee has chosen from a finite number of identified, predictable solutions with a reasonable expectation of success as such the invention becomes *obvious*; and

ii. **Problem/ solution approach** to proceed for initially identifying C.A.(COMM.IPD-PAT) 12/2023 Page 16 of 33





a *problem* in the Claim(s) made, and then finding a *solution* thereto to ascertain if the *solution* are/ can be known to a *person skilled in the art* in the concerned field; and

iii. *Could-Would approach* to proceed to determine if an invention is obvious to a person skilled in the art. It involves asking whether, based on the existing prior art, a skilled person *would* have arrived at the claimed invention than *could*. In essence, it focuses on identifying a motivation or prompting in the prior art that *would* lead a skilled person to make the invention.

iv. *Teaching Suggestion Motivation (TSM test)* to identify if any ordinary *person skilled in the art* in the concerned can modify the prior art to arrive at the claimed invention, if so, then subject matter claimed is obvious.

20. For better understanding the scope of invention in the patent application i.e., the amended Claim 1 thereof for producing a Ziegler-Natta catalyst for the polymerization of olefins, is reproduced below:-

"a) Combining a spherical spray-cooled MgCl2-xROH support, wherein x is in the range from 1.5 to 6.0 and ROH is an alcohol or a mixture of alcohols where R is a linear, cyclic, or branched hydrocarbon unit with 1-10 carbon atoms, with a transition metal compound in a reactor at a temperature of between -30° C and $+40^{\circ}$ C; b) heating the mixture in the reactor to a temperature of between 30° C to 100° C;

c) concurrent with the heating in step (b), or following reaching the

temperature of step (b), adding an internal electron donor consisting essentially of a diether compound to the mixture in the reactor;

d) heating the resulting mixture to 80-125°C, if necessary, and holding the resulting mixture at that temperature for 1 to 3 hours to

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produce a precatalyst;

e) filtering the mixture containing the pre-catalyst while still hot to obtain the solid pre-catalyst component;

f) extracting the pre-catalyst with a mixture of an organic solvent and a transition metal at a temperature 100-135°C for 1-5 hours to form a catalyst; and

g) washing the catalyst with a hydrocarbon solvent and drying the catalyst under vacuum and/or elevated temperature of 30-100°C;

wherein the diether compound is selected such that the resulting solid catalyst component has an activity and hydrogen response suitable for the production of propylene polymers having a molecular weight distribution in the range from 5.75 to 9."

21. Additionally, there is no cavil that a Co-ordinate Bench of this Court in *Agriboard International vs LLC Deputy Controller of Patents and Designs*¹⁹ while dealing with cases where a prior art document is cited and any order of rejection by the Controller for *lack of inventive step* has to also discuss/ describe the manner in which subject invention would be obvious to a person *skilled in the art*. The relevant extracts thereof are reproduced as hereinbelow:-

"24. In the opinion of this Court, while rejecting an invention for lack of inventive step, the Controller has to consider three elements-

- the invention disclosed in the prior art,
- the invention disclosed in the application under consideration, and
- the manner in which subject invention would be obvious to a person skilled in the art."

22. Applying the aforesaid to the facts of the present case, this Court finds that the Controller has discussed (*i*) about the prior art; as also (*ii*) about the invention made in the subject application; and lastly (*iii*) how the invention in

¹⁹ 2022 SCC OnLine Del 940





the patent application is obvious to the person *skilled in the art* is evident from the below relevant extracts reproduced as under:-

- "4. Objections
- A. Invention u/s 2(1)(j)

I. The present invention lacks inventive step as Dl-D3 discloses the polymerisation of polypropylene with the catalyst comprising nonsubstituted and substituted 1,3 -propane diethers and derivatives of the group of succinates/ 2-isopentyl-2- isopropyl-1, 3dimethoxypropane. Hence, for the person skilled in the art, it is obvious to reach a subject matter of the present application by mosaicing above-cited documents DI -D3. Therefore in the view of the above documents, claim 1-10 does not constitute an inventive step under section 2(1)(ja) of Patents Act, 1970. Reference is to be taken from these documents: DI: EP 1840138 Al D2: EP 1609805 Al D3: WO 2009152268 Al

The present application discloses improved Ziegler Natta catalysts and methods of making the same. The Ziegler Natta catalyst is formed using a spherical MgCI xR0H support, where R is a linear cyclic or branched hydrocarbon unit with 110 carbon atoms and where ROH is an alcohol or a mixture of at least two different alcohols and where x has a range of about 1.5 to 6.0 preferably about 2.5 to 4 more preferably about 2.9 to 3.4 and even more preferably 2.95 to 3.35. The Ziegler Natta catalyst includes a Group 4, 8 transition metal and an internal donor comprising a diether compound. The catalyst has improved activity in olefin polymerization reactions as well as good stereoregularity and hydrogen sensitivity and may be useful in the production of phthalate-free propylene polymers having a molecular weight distribution (PI(GPC)) in the range from about 5.75 to about 9.

DI discloses in its examples 13 and 15, the polymerisation of propylene in the presence of a catalyst comprising MgCl2.nROH, TiCI4 and 2-isobutyl-2-isopropyl-1, 3- dimethoxypropane. The polymers prepared have a MWD (GPC) of 7.

D2 discloses the polymerisation of propylene with catalysts comprising MgCl2.nROH; TiCl4 and 2- isopentyl-2- isopropyl-1, 3- dimethoxypropane or 9,9 bis(methoxymethyl)fluorene. The obtained PP have an MWD(GPC) of 7 or 7.1.

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D3 discloses the process as present claim 2 but for an internal electron donor (ED) in general. In the examples, DIBP is used but according to the description (see [40J), diether such as 1, 3 propane diethers can also be used in the process of D3. A further group of suitable internal donor compounds are nonsubstituted and substituted (1, 3 -propane diethers and derivatives of the group of succinates. The preparation of the particulate solid component, the internal electron donor compound in general is used in an amount of from about 0.01 to about 2 mole, preferably from about 0.04 to about 0.6 moles, more preferably from about 0.05 to about 0.2 mole for each mole of the magnesium halide compound.

B. Other Requirement(s) 1. 1. Claims of this application No. 4278/DELNP/2015 conflicts with the claims of application No. 4277/DELNP/2015, therefore the claims of this application can not be allowed as to avoid duplicate inventions.

- C. Scope
- 1. Claims 2-10 are inconsistent and beyond the scope of claim 1.

xxx xxx

5. OBSERVATIONS

1. In view of discussions held during hearing, agent had filed written submissions and relevant documents on 8th October, 2021 with petition for extension of time. Written submissions filed with reference to the objections contained in hearing notice cannot be reproduced here for the sake of brevity and which can be seen in electronic filewrapper of the present Application on the official website of Intellectual Property India www.ipindia.gov.in.

6. The subject matter of revised claims 1-9 filed alongwith submission is directed towards the A process for producing a Ziegler-Natta catalyst for the polymerization of olefins. The claim 1 is as follows:-

1. A process for producing a Ziegler-Natta catalyst for the polymerization of olefins comprising the steps of: a. combining a spherical spray-cooled MgC12-x.ROH support, wherein x is in the range of from 1.5 to 6.0 and ROH is an alcohol or a mixture of alcohols where R is a linear, cyclic, or branched hydrocarbon unit

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with 1- 10 carbon atoms, with a C and transition metal compound in a reactor at a temperature of between -30 C; $^{\circ}+40$ C; $^{\circ}C$ to 100°b. heating the mixture in the reactor to a temperature of between 30 c. concurrent with the heating in step... ...

xxx xxx

The key inventive features of the present invention as well as the problem to be solved can only be regarded as the provision of an alternative process for producing a Ziegler Natta catalyst suitable for the production of propylene polymers having a molecular weight distribution in the range of 5.75 to 9.

Example 13 of D1 is regarded as the closest prior art for present claim 1 as the catalyst described therein allows the preparation of polypropylene with a molecular weight distribution of 7, which is included in the range 5.75 to 9 as targeted by the present invention. The processes disclosed in examples 8, 10 and 14 of D2 disclose polypropylenes having a molecular weight distribution of 7 or 7.1 which is included in the range 5.75 to 9 as targeted by the present invention.

The document D3 (the applicant's own invention) discloses exactly the same process as presently claimed, except that the electron donor is more generally defined (see claims 1, 15 and paragraphs [0018]-[0028]), indicating that the spherical MgCl2-xROH support has more preferably a d50 of 40 to 90 microns which may be produced by the spray-cooling method and paragraph [0061] where a sixty micron (d50) MgCl2.3.2EtOH support is used, which appears to be the same as in the examples of present application, the skilled person would use such a support in the process of example 13 of D1 and add an extraction step f) as disclosed in the general process of D3 and would arrive at the process of present claim 1."

23. In view thereof, this Court finds that arguments as advanced by Ms. Nidhi Raman are worthy and hold due merit. The use of diether compound as an internal electron donor and the filtration of a heated reaction mixture to produce a catalyst for making propylene with specific molecular weight





distribution (5.75 to 9) by the appellant in light of the cited prior art documents **D1**, **D2** and **D3** shows apparent overlap.

24. Example 13 of the cited prior art document DI also elucidates preparation of propylene with a molecular weight distribution falling within the range targeted by the present patent application (5.75 to 9) and the catalyst preparation process that shares similarities with the present patent application as also use of same internal electron donor, 2-isobutyl-2-isopropyl-1, 3-dimethoxypropane and involves step of hot filtration. Relevant extracts of the said cited prior art document DI is reproduced as under:-

"[0074] Among these, preferred are 1,3-diethers, and particularly preferred are 2-isopropyl-2-isobutyl-1,3-dimethoxypropane, 2,2diisobutyl-1,3-dimethoxypropane, 2-isopropyl-2-isopentyl-1,3dimethoxypropane, 2,2-dicyclohexyl-1,3- dimethoxypropane and 2, 2bis(cyclohexylmethyl)-1,3-dimethoxypropane. [0075] These compounds may be used alone or in combination of two or more kinds thereof."

25. Moreover, Examples 8, 10 and 14 of the cited prior art document **D2** *specifically* offer preparation of catalyst yielding polypropylene with similar molecular weight distribution i.e., 7 or 7.1 which falls within the ambit of this subject application.

26. Similarly, the cited prior art document **D3**, of the very same Inventor also describes a process exactly identical to the one claimed in the subject application, *albeit* with only minor distinctions in the broader definition of electron donor.

27. Resultantly, when combining process steps and parameters of the cited prior art document **D3** with the disclosures made in the cited prior art





documents **D1** and **D2**, which elucidate diether compounds as internal electron donor and hot filtration, the invention disclosed in the present patent application emerges as a predictable outcome. As such a person *skilled in the art, would* employ the teachings in the cited prior art document **D1** and the general process in the cited prior art document **D3** to come to the Claim(s) outlined in the present subject application.

28. For better elucidation Examples and Claims made in the cited prior art documents **D1** and **D3** with the Claim made in the subject application are reproduced as under:-

D1	D3	D3 second	Invention in the
		embodiment	Subject Application
[0200] First, in the same manner as in Example 1, 2.8 mol of ethanol was coordinated to 1 mol of magnesium chloride to obtain a solid adduct.	[0024] a) Reacting the MgC12-xROH with neat TiC14 at -30°C to +40°C, more preferably at -20C to +20C, even more preferably between - 10C and +10C by slow addition of the TiC14 to the MgC12- xROH/ organic solvent suspension while providing constant stirring.	[0030] a) preparing a cooled portion of neat TiC14 or of TiC14 diluted with a non aromatic hydrocarbon.	a). Combining a spherical spray-cooled MgCl2-xROH support, wherein x is in the range from 1.5 to 6.0 and ROH is an alcohol or a mixture of alcohols where R is a linear, cyclic, or branched hydrocarbon unit with 1- 10 carbon atoms, with a transition metal compound in a reactor at a temperature of between -30°C and +40°C.
[0201] 46.2 mmol	[0025] b) Increasing	[0031] b)	b). heating the mixture in the reactor to
oj ine solia	the temperature of the	reacting the	mixiure in the reactor to
aaauct, in terms	above reaction	neat or alluted	a temperature of
of magnesium	mixture to between	TiC14 at -30°C	between 30°C to 100°C;
atom, which was	about 30 °C and 100	to $+40^{\circ}C$, more	
suspended in 30	°C, preferably	preferably at -	
ml of decane, was	between about 40 and	$20^{\circ}C$ to $+20^{\circ}C$,	

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wholly introduced	90 ° C, followed by	most preferably	
to 200 ml of	addition of an internal	between -10°C	
titanium	electron donor and	and $+10^{\circ}C$ by	
tetrachloride	continuing to heat the	slow addition of	
which was	mixture to at least 80°	the preformed,	
maintained at -	C for about 1 to 2	spherical	
20°C, under	hours.	particles of	
stirring. The		MgC12-xROH	
temperature of		while providing	
the mixed solution		constant	
was elevated to		stirring.	
$80^{\circ}C$ over 5			
hours. When the			
temperature			
reached 80°C, 2-			
isobutyl-2-			
isopropyl-1,3-			
dimethoxypropan			
e was added			
thereto in a			
proportion of 0.15			
mol, based on 1			
mol of magnesium			
atom in the solid			
adduct, and then			
the temperature			
thereof was			
elevated to 120°C			
over 40 minutes.			
When the			
temperature			
reached 120°C,			
diethyl 4-			
cyclohexene-1,2-			
dicarboxylate			
(trans-isomer)			
was added thereto			
in a proportion of			
0.15 mol, based			
on 1 mol of			
magnesium atom			

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in the solid			
adduct, and then			
the temperature			
thereof was			
maintained at			
120°C over 90			
minutes under			
stirring.			
[0202] After the	[0026] c) Filtering the	[0032] c)	c). concurrent with
completion of the	reaction mixture at	increasing the	the heating in step (b),
reaction for 90	room temperature to	temperature of	or following reaching
minutes, a solid	obtain the solid	the reaction	the temperature of step
portion was	precatalyst.	mixture to	(b), adding an internal
recovered by hot		about 30 to	electron donor
filtration. This		100°C,	consisting essentially of
solid portion was		preferably to	a diether compound to
resuspended in		about 40 to	the mixture in the
200 ml of titanium		90°C, followed	reactor;
tetrachloride, and		by addition of	
the temperature		an internal	
thereof was		electron donor	
elevated to		and continuing	
$130^{\circ}C$, and then		to heat the	
maintained at that		mixture to at	
temperature		least 80°C.	
under stirring for			
45 minutes to			
effect reaction.			
After the			
completion of the			
reaction for 45			
minutes, a solid			
portion was			
recovered again			
by hot filtration.			
The recovered			
solid portion was			
sufficiently			
washed with			
decane and			
heptane at 100°C			

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until a free			
titanium			
compound was no			
longer detected in			
the washing			
solution.			
[0203] Thus, the	[0027] d) Extracting	[0033] d)	d). heating the
solid titanium	the precatalyst using	filtering the	resulting mixture to 80-
catalyst	the Soxhlet extraction	reaction mixture	125°C, if necessary,
component (a13)	method employing	at room	and holding the
which was	TiC14 and	temperature	resulting mixture at
prepared in the	ethylbenzene (at a		that temperature for 1
above procedure	volume ratio of about		to 3 hours to produce a
was stored as a	30:70, preferably		precatalyst;
decane slurry. An	20:80, most		
aliquot portion of	preferably 10:90) for		
the slurry was	1-5 hours, preferably		
picked and dried	1-4 hours, most		
to examine the	preferably 1-3 hours		
catalyst	at a temperature of at		
composition.	<i>least</i> 100°C,		
[0204] The	preferably 100-135°C		
composition of	most preferably 120-		
the thus obtained	<i>130</i> • <i>C</i> .		
solid titanium			
catalyst			
component (a13)			
was such that			
titanium was 2.0			
mass%,			
magnesium was			
19 mass%,			
chlorine was 60			
mass%, and an			
ethanol residue			
was 0.2 mass%.			
[0205] To a	[0028] e) cooling the	[0034] e)	e). filtering the
polymerization	catalyst to room	Extracting the	mixture containing the
vessel with an	temperature (20°C),	precatalyst	pre-catalyst while still
internal volume of	washing several times	using the	not to obtain the solid
2 liters, 500 g of	with a	Soxhlet	pre-catalyst

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propylene, and 1	hvdrocarbon like	extraction	component:
NL of hydrogen	pentane, hexane or	method	1
were added at	heptane, and then	employing	
room	drying under vacuum	TiC14 and	
temperature, and	and/or elevated	ethylbenzene (at	
then 0.5 mmol of	temperature of 30-	a volume ratio	
triethylaluminum,	100°C, preferably 40-	of about 30:70,	
0.1 mmol of	90°C, most preferably	preferably	
cyclohexylmethyl	50-80 °C.	20:80, most	
dimethoxysilane		preferably	
and 0.004 mmol,		10:90) for 1-5	
in terms of		hours,	
titanium atom, of		preferably 1-4	
the solid catalyst		hours, most	
component (a13)		preferably 1-3	
were added		hours at a	
thereto, and the		temperature of	
internal		at least 100°C,	
temperature of		preferably 100-	
the		135°C most	
polymerization		preferably 120-	
vessel was rapidly		<i>130•C</i> .	
elevated to 70°C.			
After			
polymerization at			
$70^{\circ}C$ for 1 hour,			
a small amount of			
methanol was			
added thereto to			
stop the reaction,			
and propylene			
was purged. The			
obtained polymer			
particles were			
dried under			
reduced pressure			
overnight at			
80°C.			
[0205] To a		[0035] f)	f). extracting the
polymerization		Cooling the	pre-catalyst with a
vessel with an		catalyst to room	mixture of an organic

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internal volume of	temperature	solvent and a transition
2 liters, 500 g of	$(20^{\bullet}C)$, washing	metal at a temperature
propylene, and 1	several times	100-135°C for 1-5
NL of hydrogen	with a	hours to form a
were added at	hydrocarbon,	catalyst; and
room	like pentane,	
temperature, and	hexane or	
then 0.5 mmol of	heptane, and	
triethylaluminum,	then drying	
0.1 mmol of	under vacuum	
cyclohexylmethyl	and/or elevated	
dimethoxysilane	temperature of	
and 0.004 mmol,	30-100°C,	
in terms of	preferably 40-	
titanium atom, of	90°C, most	
the solid catalyst	preferably 50-	
component (a13)	<i>80 •C</i> .	
were added		
thereto, and the		
internal		
temperature of		
the		
polymerization		
vessel was rapidly		
elevated to 70°C.		
After		
polymerization at		
$70^{\circ}C$ for 1 hour,		
a small amount of		
methanol was		
added thereto to		
stop the reaction,		
and propylene		
was purged. The		
obtained polymer		
particles were		
dried under		
reduced pressure		
overnight at		
80°C.		
[0206] The		g). washing the

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activity of the	catalyst with a
catalyst, and the	hydrocarbon solvent
MFR, the content	and drying the catalyst
of the decane-	under vacuum and/or
insoluble	elevated temperature of
components, the	30-100°C; wherein the
bulk specific	diether compound is
gravity, and the	selected such that the
molecular weight	resulting solid catalyst
distribution	component has an
(Mw/Mn, Mz/Mw)	activity and hydrogen
of the obtained	response suitable for
polymer were	the production of
shown in Table 1.	propylene polymers
	having a molecular
	weight distribution in
	the range from 5.75 to
	<i>9</i> .

[Emphasis Supplied]

29. From the above, it is borne out that the process of obtaining the catalyst in the subject application is similar to that in the cited prior art documents.

30. In the impugned order, the Controller has applied the *Could-Would* approach to test the obviousness and hold that a person skilled in the art "...would use such a support in the process of example 13 of D1 and add an extraction step as disclosed in the general process of D3 and would arrive at the process of present claim 1. ...". The same is of utmost relevance since one of the inventors, Mr. Winter Andreas is common in both the cited prior art document **D3** is the same as in this subject application. The said Mr. Winter Andreas is himself a person skilled in the art who would have been aware of all that what was involved therein. It is of utmost relevance since a

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person skilled in the art, as per settled law, is a normal skilled and ordinary person having all the knowledge available to public at the priority date in the specific field as the invention in the patent application. [Re.: *F. Hoffmann-La Roche Ltd. & Anr. vs. Cipla Ltd. (Supra)*]. It is also of relevance that all the cited prior art documents **D1**, **D2** and **D3** were available prior to the subject application. Thus, the aforesaid read with the Claims made in the subject application gives an impression that the appellant is attempting to monopolise and evergreen the patent, which cannot be allowed since it will tantamount to evergreening and would give a rebirth to the patent after end of its fixed term. The same is not permissible, even otherwise, since it is an admitted fact that a mere inventive step does not/ cannot always give rise to a new/ fresh invention in a patent, the same also has to be not obvious to a *person skilled in the art*.

31. Under these circumstances, the claim of the appellant that the subject application relates to a Ziegler-Natta catalyst, *particularly*, an improved method for making a Ziegler-Natta catalyst essentially using diether compounds as internal donor holds no water, *firstly*, since the appellant did not provide any studies demonstrating that the properties of the catalyst, including its activity and hydrogen response which as per it, is solely attributed to use of diether compounds as internal donors, and *secondly*, since the Controller had already granted patent application bearing no.4277/DELNP/2015 of the appellant filed along with the present patent application on the very same day, which was also featuring a similar Ziegler-Natta catalyst with silica as the carrier and employing similar 1,3-diether C.A.(COMM.IPD-PAT) 12/2023 Page 30 of 33





compounds as internal donors. The appellant is unable to demonstrate any difference(s) *inter-se* the two-patent application(s) so filed by the appellant.

32. This Court finds that the Controller has passed a well-reasoned order qua non-patentability of an invention under *Section* 2(1)(ja) of the 1970 Act as noted hereinabove, this itself shows a clear application of mind by the Controller. Furthermore, the impugned order having satisfied the tests laid down in *Agriboard (supra)* and has not been passed in a routine and/ or casual manner. Reliance is placed upon *Dolby International AB (supra)* wherein it has been held as under:-

"9. It would well for the officers in the office of the Controller of Patents and Designs, who are discharging such functions, to bear in mind the fact that grant or rejection of a patent is a serious matter. A patent is meant to be a recognition of the innovative step that has been put into a crafting of an invention. Inventions increment the state of existing scientific knowledge and, thereafter, are of inestimable public interest. Any decision, whether to grant or refuse a patent has, therefore, to be informed by due application of mind, which must be reflected in the decision. Orders refusing applications for grant of a patent cannot be mechanically passed, as has been done in the present case."

[Emphasis Supplied]

33. Therefore, in view of the aforesaid, it cannot be said that the cited prior art document **D3** teaches away from the invention claimed in the present patent application and any person *skilled in the art* would lack motivation to combine the cited prior art documents **D1**, **D2** and **D3** as the said person *skilled in the art* would be aware of all the prior art(s) in the said field. So, as borne out from the above, all the cited prior art documents **D1**, **D2** and **D3** are qua the subject matter of same field as the subject application and as such are interlinked.





34. Lastly, the contention that the cited prior art document **D3** teaches away from diether as electron donors is incorrect because the said test requires that prior art should suggest the certain approach or solution would not work or is not advisable. Though the said cited prior art document **D3** lists diether as suitable electron donor but nowhere does it mention diether as non-suitable solution or that it would not work and a *person skilled in the art* would be discouraged from following to use the same as internal donor. In any event, the said cited prior art document **D3** has to be seen as a whole and there is no teaching away [Re:. *F. Hoffmann-La Roche Ltd. & Anr. vs. Cipla Ltd.* 2015 SCC OnLine Del 13619]. The relevant extracts of document **D3** are reproduced as under:-

"[0012] The catalyst includes a Group 4-8 transition metal, such as Ti, and an **internal donor** like aromatic esters, **diethers**, succinates, or hindered amines, preferably dialkylphthalates like diisobutylphthalate (D*i-BP*) or di-n-butylphthalate (D-n-BP). The catalyst of the present invention has improved activity in olefin polymerization reactions as well as good stereoregularity and hydrogen sensitivity.

xxx xxx

[0038] The internal electron donors referenced in the procedure are typically a Lewis base. Suitable electron donors include diesters, diethers and succinates. Preferred internal donor compounds included carboxylic acid derivatives and in particular phthalic acid derivatives having the general formula:....

xxx xxx

[0040] A further group of suitable internal donor compounds are the nonsubstituted and substituted (CI-CIO alkyl)-1,3-propane **diethers** and derivatives of the group of succinates.

xxx xxx

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[0042] Also, mixtures of two or more internal electron donor compounds may be used in the preparation of the solid catalytic comsponent of the invention."

[Emphasis Supplied]

35. As such, there is no ground made out for setting aside the wellreasoned impugned order in line with law as also existing various precedent laid down by this Court, more so, since both the process and the product are covered by the cited prior art documents **D1**, **D2** and **D3** and the invention in the subject application is obvious to the person *skilled in the art* under *Section 2(1)(ja)* of the 1970 Act. In view thereof, the judgments cited by Ms. Vindhya S. Mani, learned counsel for the appellant, are not applicable to the facts of the present case involving the subject application.

36. Accordingly, the present appeal is dismissed, leaving the parties to bear their own costs.

37. The Registry is directed to supply a copy of this judgment to the office of the Controller General of Patents, Designs & Trade marks of India on <u>llc-ipo@gov.in</u> for information.

SAURABH BANERJEE, J.

MAY 29, 2025/Ab