* IN THE HIGH COURT OF DELHI AT NEW DELHI

Reserved on: April 24, 2025

% ***Pronounced on: May 29, 2025***

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

LUMMUS NOVOLEN TECHNOLOGY GMBH .....Appellant

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.

Versus

THE ASSISTANT CONTROLLER OF PATENTS AND DESIGNS .....Respondent

Through: Ms. Nidhi Raman, CGSC with Mr. Arnav Mittal, Adv.

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 Designs[2], who has rejected its Indian

---

[1] Hereinafter referred as "***1970 Act***"

[2] Hereinafter referred as "***Controller***"

Patent Application No.4278/DELNP/2015 dated 19.05.2015[3] 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?*".

<u>Brief narrative facts:</u>

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 Delhi[5] 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 Report[6] 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.

<u>Contentions of learned counsel for Appellant:</u>

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 & Designs***[11].

9.4. Similar claims have been granted in other jurisdictions *inter alia* 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 <u>phthalate based cyclic ester compound to produce desirable polymer</u> i.e., diethyl-cyclohex-4-ene-1,2-dicarboxylate i.e., diethyl 1,2,3,6-tetrahydrophthalate 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 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 & Designs***[15].

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*.

<u>Contentions of the CGSC for Controller:</u>

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 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 l, 15 of the cited prior art document **D3**. Also, paragraph [0040] of the cited prior art document **D3** suggests the 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 l,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.

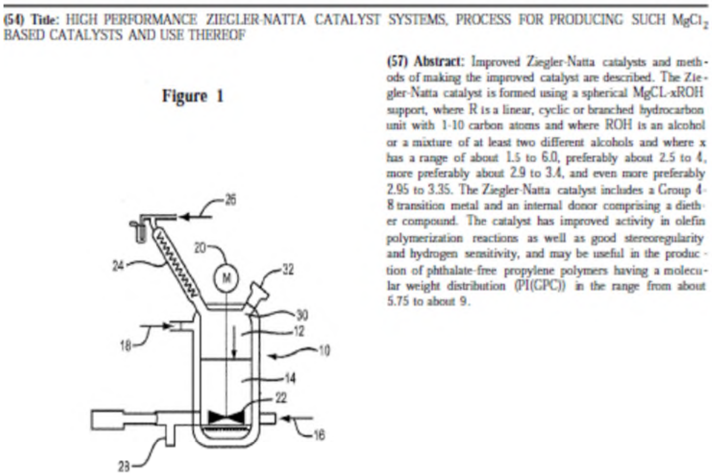
10.6. The appellant emphasizes the use of diethers in combination with silica in the cited prior art document **D2**, however, similar l,3-diether compounds can be used in Ziegler Natta catalysts to achieve a polypropylene (pp) with an MWD (GPC) of 7.1, as demonstrated in D2 and the present invention 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/20l5, 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 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 documents **D1** and **D2**. Therefore, the inventive step is analysed in comparison with the cited prior art document **D3**.

<u>Discussion, analysis and reasonings:</u>

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:-



(54) Title: HIGH PERFORMANCE ZIEGLER-NATTA CATALYST SYSTEMS, PROCESS FOR PRODUCING SUCH $MgCl_2$ BASED CATALYSTS AND USE THEREOF

Figure 1

(57) Abstract: Improved Ziegler-Natta catalysts and methods of making the improved catalyst are described. The Ziegler-Natta catalyst is formed using a spherical MgCL-xROH support, where R is a linear, cyclic or branched hydrocarbon unit with 1-10 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.

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 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°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*

> *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, 3-dimethoxypropane. 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: Dl: 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; TiCI4 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.*

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

> *with 1- 10 carbon atoms, with a C and'transition metal compound in a reactor at a temperature of between -30 C;°+40 C;°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 ***D1*** 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 ***D1*** is reproduced as under:-

> *"[0074] Among these, preferred are 1,3-diethers, and particularly preferred are 2-isopropyl-2-isobutyl-1,3-dimethoxypropane, 2,2-diisobutyl-1,3-dimethoxypropane, 2-isopropyl-2-isopentyl-1,3-dimethoxypropane, 2,2-dicyclohexyl-1,3- dimethoxypropane and 2, 2-bis(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 embodiment***	***Invention in the 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-xR0H/ 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 of the solid adduct, in terms of magnesium atom, which was suspended in 30 ml of decane, was	*[0025] b) Increasing the temperature of the above reaction mixture to between about 30 °C and 100 °C, preferably between about 40 and*	*[0031] b) reacting the neat or diluted TiC14 at -30°C to +40°C, more preferably at -20°C to +20°C,*	*b). heating the mixture in the reactor to a temperature of between 30°C to 100°C;*

wholly introduced to 200 ml of titanium tetrachloride which was maintained at -20°C, under stirring. The temperature of the mixed solution was elevated to 80°C over 5 hours. When the temperature reached 80°C, 2-isobutyl-2-isopropyl-1,3-dimethoxypropane 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	*90 ° C, followed by addition of an internal electron donor and continuing to heat the mixture to at least 80° C for about 1 to 2 hours.*	*most preferably between -10°C and +10°C by slow addition of the preformed, spherical particles of MgC12-xROH while providing constant stirring.*	

in the solid adduct, and then the temperature thereof was maintained at 120°C over 90 minutes under stirring.			
[0202] After the completion of the reaction for 90 minutes, a solid portion ***was recovered by hot filtration****. This solid portion was resuspended in 200 ml of titanium tetrachloride, and the temperature thereof was elevated to 130°C, and then maintained at that temperature 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*	*[0026] c) Filtering the reaction mixture at room temperature to obtain the solid precatalyst.*	*[0032] c)* ***increasing the temperature of the reaction mixture to about 30 to 100°C, preferably to about 40 to 90°C, followed by addition of an internal electron donor and continuing to heat the mixture to at least 80°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;***

until a free titanium compound was no longer detected in the washing solution.			
[0203] Thus, the solid titanium catalyst component (a13) which was prepared in the above procedure was stored as a decane slurry. An aliquot portion of the slurry was picked and dried to examine the catalyst composition. *[0204] The composition of the thus obtained 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%.*	*[0027] d)* ***Extracting the precatalyst using the Soxhlet extraction method employing TiC14 and ethylbenzene (at a volume ratio of about 30:70, preferably 20:80, most preferably 10:90) for 1-5 hours, preferably 1-4 hours, most preferably 1-3 hours at a temperature of at least 100°C, preferably 100-135°C most preferably 120-130°C****.*	*[0033] d) filtering the reaction mixture at room temperature*	***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 produce a precatalyst;***
[0205] To a polymerization vessel with an internal volume of 2 liters, 500 g of	***[0028] e) cooling the catalyst to room temperature (20°C), washing several times with a***	*[0034] e)* ***Extracting the precatalyst using the Soxhlet***	***e). filtering the mixture containing the pre-catalyst while still hot to obtain the solid pre-catalyst***

propylene, and 1 NL of hydrogen were added at room temperature, and then 0.5 mmol of triethylaluminum, 0.1 mmol of cyclohexylmethyl dimethoxysilane and 0.004 mmol, in terms of titanium atom, of the solid catalyst component (a13) were added thereto, and the internal temperature of the polymerization vessel was rapidly elevated to 70°C. After polymerization at 70°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.	***hydrocarbon like pentane, hexane or heptane, and then drying under vacuum and/or elevated temperature of 30-100°C, preferably 40-90°C, most preferably 50-80 °C.***	***extraction method employing TiC14 and ethylbenzene (at a volume ratio of about 30:70, preferably 20:80, most preferably 10:90) for 1-5 hours, preferably 1-4 hours, most preferably 1-3 hours at a temperature of at least 100°C, preferably 100-135°C most preferably 120-130°C.***	***component;***
[0205] To a polymerization vessel with an		***[0035] f) Cooling the catalyst to room***	*f).* ***extracting the pre-catalyst with a mixture of an organic***

internal volume of 2 liters, 500 g of propylene, and 1 NL of hydrogen were added at room temperature, and then 0.5 mmol of triethylaluminum, 0.1 mmol of cyclohexylmethyl dimethoxysilane and 0.004 mmol, in terms of titanium atom, of the solid catalyst component (a13) were added thereto, and the internal temperature of the polymerization vessel was rapidly elevated to 70°C. After polymerization at 70°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.		***temperature (20°C), washing several times with a hydrocarbon, like pentane, hexane or heptane, and then drying under vacuum and/or elevated temperature of 30-100°C, preferably 40-90°C, most preferably 50-80 °C.***	***solvent and a transition metal at a temperature 100-135°C for 1-5 hours to form a catalyst; and***
[0206] The			***g). washing the***

activity of the catalyst, and the MFR, the content of the decane-insoluble components, the bulk specific gravity, and the molecular weight distribution (Mw/Mn, Mz/Mw) of the obtained polymer were shown in Table 1.			***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.***

[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

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

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 non-substituted and substituted (CI-CIO alkyl)-1,3-propane* ***diethers*** *and derivatives of the group of succinates.*
>
> *xxx xxx*

> *[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 well-reasoned 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 llc-ipo@gov.in for information.

SAURABH BANERJEE, J.

MAY 29, 2025/Ab