7TH MEETING

HELD AT

IPCL OFFICE, NEW DELHI

ON

JANUARY 30, 1984

Draft Record Note of the Seventh Meeting of the Scientific Advisory Committee for the Department of Petroleum.

Venue: IPCL Office, New Delhi.

Date : 30th January, 1984

(A list of the participants is attached - Annexure-I)

The minutes of the previous meeting were reviewed and approved.

7.1 Engineering Plastics

Dr Mashelker briefly explained the application potential of engineering plastics in India and the contents of the note submitted by the NCL. It was agreed by all the members that in view of the distinct advantages offered by the use of engineering plastics, vis-a-vis the conventional materials/metals, the use of engineering plastics must be promoted in our country.

Although the plastics have penetrated the materials market, the articles made in plastic in India have been limited for the purpose of general consumption. However, precision components which require accuracy and rigid tolerance and total consistency are not available to the end user and this is a great handicap for the growth of engineering plastics in this sector.

It was recognised that for achieving the required precision, consistency and accuracy, capital investments of much higher order are required than is possible in the small scale sector.

The Committee, therefore, reiterates its earlier recommendation regarding the utility and versatility of engineering plastics and strongly recommends the inclusion of the item "Precision Components of engineering plastics for engineering industry" in Appendix-I of Industrial Policy and also waiver under Section 22-A of the MRTP Act. It was also felt by the Committee members that the industry richly deserves concessions/ waivers in fiscal levies for the growth in this sector. However, it was agreed that NCL will provide additional technical/financial data so that this matter could be further taken up in the various departments of the Government to achieve meaningful results.

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7.2 Feedstock for chemicals from refinery:

The paper submitted by Shri M.Kurien and Dr.Kothari and also from Dr.Thiagrajan was discussed at length. Itemwise discussions on various issues is as below:-

1) De-aromatisation: Since the aromatic content of Bombay naphtha is about 25%, it is necessary to reduce the aromatic content if it is to serve as feedstock for the fertilizer or petrochemicals plants. It was also expressed that extraction of aromatics from naphtha using solvent extraction process, should be possible. However, a doubt was expressed whether it would be possible to produce nitration grade benzene specially in view of the high naphthenic content. However, a detailed techno-economic study is required to be undertaken by Shri Kurien and Dr.Kothari to ascertain whether de-aromatisation should be undertaken for the purpose of giving low aromatic content feedstock to fertilizer and petrochemical units and/or for the production of BTX also.

2) Raffinate utilisation from BTX plant : A doubt was expressed that the raffinate of sulfolane process is likely to contain sulphur compounds, which may pose problems in the fertilizer plant. Dr.Gulati of IIP pointed out that a detailed report has already been prepared based on the pilot data and submitted to the Ministry which has brought out clearly that there would not be any problem in utilising raffinate containing sulfolane at ppm level in the fertilizer plants. This matter requires closer examination.

3) Overall naphtha availability : It was clarified by Dr.Jayaramarao that there would be a surplus of about 2 million tonne of naphtha mostly in southern port towns and this surplus naphtha could be exported, if need arises.

4) LAB Feedstock : Based on the crude processing pattern plan in the various refineries, Dr.Jayaramarao explained that it would be possible to extract the normal paraffins that are required for the production of LAB at Madras Refineries Ltd and Vizag without affecting very much the smoke point criteria required for the kerosene fraction for domestic consumption. (The raffinate is completely unsatisfactory as ATF).

It was, however, expressed that actual pilot study has to be carried out particularly for the Bombay High

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to find out the effect of removal of paraffins (C-10 to C-14 range) on the smoke point of the kerosene fraction. Dr.Gulati stated that this work is presently being done by IIP in association with IOC.

ATF: Dr.Mukhopadhya informed that in view of the high aromatic content of the Bombay High, IOC and HAL are studying the effect of higher aromatic content in ATF on the performance of the jet engines. It was also mentioned that the aromatic content in the ATF temporarily had been liberalised from 20% to 25% in some of the countries in the world. Possibilities for extracting aromatics from ATF should be examined. It was noted that HP/EIL/IIP are considering pilot plant study.

5) Ethylene/propylene availability at Vizag: The stream from FCC off-gases contains small quantity of ethylene and it was agreed by all that since the content is low, it may not be possible to support any viable project, for example, styrene, EDC, etc.

Propylene that is expected to be available has already been ear-marked for the production of oxo-alcohols for which APIDC holds a letter of intent.

6) Naphthalene : Shri Kurien informed that the refinery streams from which naphthalene can be obtained have been identified. However, further work is required in this area and this matter will be examined in a subsequent meeting.

7.3 Utilisation of condensate (Maharashtra & Gujarat) :

The Chairman informed that as per the indications available, large quantity of condensate is likely to be available from Gujarat and Maharashtra and a proper utilisation programme has to be established for these quantities of condensate. Dr.Jayaramarao explained that the condensate available presently at Uran is considered to be light naphtha and NOCIL is being supplied with the same. It contains aromatics to the extent of 8-10%. However, the pipeline condensate available at Uran contains aromatics to the extent of 15%.

It was expressed that the condensate available at Hazira may contain about 18-20% aromatics and if the

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quantity is fairly high then this could be considered as a feedstock for aromatics and after suitable removal of aromatics as a feedstock for naphtha cracker and fertilizers. However, in the absence of proper data, it was felt desirable that Shri Kurien and Dr.Kothari could bring up relevant data and discussions could be held in the next meeting on this subject.

7.4 Raw materials for detergents :

Shri Ramaswamy informed that a committee has been set up by the Ministry of Industries to look into the problems related to the raw materials availability for the manufacture of laundry soaps, toilet soaps and synthetic detergents. This is to be reviewed with respect to short term specially in view of the ban that has been imposed on the imports of certain fats and also on a medium and long term basis, since the demand for washing materials is expected to rise to 2 million MT.

It was also brought out that some of the non-edible oils which are presently being used for the purpose of soap manufacture (like rice bran oil) are expected to be upgraded for edible purposes, the technology for which is available. This will further lead to less availability of fats and oils for the purpose of soap manufacture and hence stress must be laid for increasing the availability of raw materials based on synthetic sources.

The use of LAB is well established in the country for the production of laundry detergents. However, its use is limited to the laundry sector alone. Moreover the efficacy of alpha-olefins, an alternative raw material to LAB, is comparable or even better in some applications. Alpha-olefin sulphonates are used for the manufacture of toilet soaps and the soaps and detergents based on alpha-olefins can be used even in hard water without affecting the detergency.

It was, therefore, essential that alpha-olefins production in the country for the manufacture of toilet soaps and detergents must be considered favourably as early as possible.

7.5 Flow Improvers :

The status report was put up on the table by RRL and ONGC and was discussed briefly. Dr. Thiagrajan and representative from ONGC briefly discussed the present status of the development of flow improvers.

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ONGC representative in his discussions brought out the experiences that they have had in the use of various flow improvers and has given data in the report submitted by them. Out of all the products, Dai-Ichi product MNG-1205 has shown promising results. However, with its use fouling was reported in the refinery. An improved version that is MNF-1206 is also being tried and may prove to be satisfactory. Field trials on some other flow improvers are also being undertaken and the details are given in the report.

Dr.Thiagrajan informed that SWAT-104 as an additive was found to be suitable for Wastern crude and now an improved version SWAT-106 has been developed and licensed through HIL and Hico Products. Products from their facilities are expected to be put to use by ONGC shortly. He also informed that no imported flow improver is found to be suitable for the Ratna crude and therefore, efforts are being made to develop the totally indigenous product for this difficult crude. He also made offer to other members for a joint development programme in this regard, if they felt interested. The Committee noted with appreciation the indigenous efforts that are being taken towards the development of these flow improvers and more so far the Ratna crude for which even the imported flow improvers have not shown satisfactory performance.

Dr.Thiagrajan informed that presently a lot of foreign exchange has to be paid for each single test for which the samples are sent to TNO laboratories, Holland and it would be desirable to set up such primary rheological testing facilities in India on similar line as TNO. TNO has agreed to give full help in setting up these facilities. He requested that half of the cost of setting up the facilities should be borne by OIDB, while the other half will be provided by CSIR.

IOC also is in the process of establishing R&D facility. However, that is an extension of the primary facility as proposed above and is comparatively more expensive. The members endorsed Dr.Thiagrajan's view point regarding the establishment of such primary facilities with CSIR and the cost of setting up such facility could be borne by OIDB and CSIR to the extent of 50% each.

76 R&D Projects of IPCL/EIL:

The members noted the contents of the status report that was submitted by IPCL/EIL with satisfaction.

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Annexure-I

List of participants who attended the Scientific Advisory Committee meeting held on 20th January, 1984 in IPCL's office, New Delhi.

Members

1. Prof.M.M.Sharma, Chemicals Engineering, Deptt.of Chemical Technology.
2. Dr.G.Thyagarajan, Director, Regional Research Laboratory, Hyderabad.
3. Dr.I.B.Gulati, Director, Indian Institute of Petroleum, Dehradun.
4. Dr.P.K.Mukhopadhyaya, Director, IOC (R&D), Faridabad.

Invitees

5. Shri M.Kurien, BPCL/OIDB
6. Dr.N.C.Kothary, OIDB
7. Shri Arun Gupta, OIDB
8. Shri Y.R.Karnad, OIDB
9. Shri G.K.Luthra, OIDB
10. Shri S.S.Sachdeva, OIDB
11. Shri S.R.Sethi, OCC
12. Shri M.A.Siddiqi, ONGC, Bombay.
13. Shri M.C.Gupta, ONGC, Bombay
14. Dr.A.B.Halgeri, IPCL, Baroda
15. Dr.J.S.Anand, IPCL, Baroda
16. Dr.K.L.Mallik, Lubrizol India limited.
17. Shri D.N.Rihani, Engineers India Limited
18. Dr.P.V.Krishna, Ministry of Chemical & Fertilizers.
19. Dr.G.C.Joshi, Indian Institute of Petroleum, Dehradun.
20. Shri K.C.Mehta, Indian Oil Corporation (R&D)
21. Dr.R.A.Mashelkar, National Chemical Laboratory, Pune.

Department of Petroleum

22. Dr.K.Aghoramurthy, Adviser(PC)
23. Dr.G.Jayaramarao, Adviser(R)
24. Smt.Lalitha B.Singh, Project Officer
25. Shri L.S.Sundaresan, PO(PC)
26. Shri B.C.Narayan, PO.

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