

CSIR-IIP has developed a Wax De-oiling Technology for Production of 'Microcrystalline Wax' which involves processing of Heavy Waxy Distillates and Residues in a series of steps comprising De-asphalting, 'Aromatic Extraction', 'Extractive Fractional Crystallization', 'Filtration' and 'Solvent Recovery' depending upon Feed Quality

Microcrystalline Wax

- Microcrystalline wax (MCW) is mainly used in cosmetic formulations, glue manufacturing, adhesives, skin care creams, inks, chewing gum, rubber, gels, coatings, linings, sealing compositions, ointments, explosives and various types of polishes etc.
- India has ~ 18 KTPA of MCW demand. Only ~7 % is met by domestic production and ~93% (16.7 KTPA) of the current demand is met through import.

Salient Features of The Technology

- Low solvent-to-feed ratio
- Optimum solvent dilution scheme
- Controlled crystallization for larger crystals with narrow crystal size distribution
- Two-stage filtration with a balanced filter cycle
- Energy efficient process design
- Low capital cost

Notably, this process is superior and energy-efficient as compared to other technologies because of the elimination of a 4.0 MMKcal/hr furnace in the new design of the Wax Plant which results in significant savings on fixed capital investment

Commercialization of Technology

- Based on CSIR-IIP's process 4,500 TPA plant of Type A Microcrystalline Wax from Heavy Waxy Distillate was designed in 2011. EIL & NRL became technology partners.

Benefits of The Technology

- Commercialization of this technology will help to increase the profitability of refineries
- Will generate employment for local people
- Will cut down Microcrystalline Wax import and save foreign exchange
- Commercialization of indigenous Wax De-oiling Technology will also strengthen the 'Make in India' initiative taken by the Government of India (GoI)

Future Commercialization Potential

- CSIR-IIP-EIL-NRL have plan to commercialize wax de-oiling technology in 1 Indian Refinery to produce ~30 KTPA MCW in new grass root unit. This technology is very competitive for refineries having an availability of heavy waxy feed stocks not only in India but abroad as well



The Wax Plant at NRL, Assam



Snapshot of Honorable Prime Minister of India Mr Narendra Modi Inaugurating Wax Plant

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