

CSIR IIP-EIL-NRL Wax De-oiling Technology for the Production of Paraffin Waxes

CSIR-IIP has developed a Wax De-oiling Technology for the Production of 'Paraffin Wax' which involves the processing of waxy distillates in a series of steps comprising 'Extractive Fractional Crystallization', 'Filtration' and 'Solvent Recovery'

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 4.0 MMKcal/hr furnace in the new design of Wax Plant which results in significant savings on fixed capital investment

Commercialization of Technology

- Based on CSIR-IIP's process 50 KTPA of 'Paraffin Wax' plant was designed in 2011. EIL & NRL became technology partners.
- Capital investment was ~Rs. 676 Crores in year 2015.
- Wax plant has been in trouble-free operation since 2015



The Wax Plant at NRL, Assam



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

Benefits to Numaligarh Refinery Limited (NRL), Assam

- NRL's profitability increased by Rs. 127 Crores/annum
- Gross margin contribution by Wax Plant from 2018 to 2023 is 571.56 Crore
- Refinery has captured 44% of India's Paraffin Wax market share
- Production of Premium Food Grade Wax (PRISTINE) has also commenced
- NRL exports wax to more than 35 countries

Societal Benefits

- Wax plant generated direct employment to 125 persons. Setting - up of ancillary medium and small-size industries created avenues for generating large-scale indirect employment in neighboring areas
- Wax plant established 'Assam' as a hub of Candle Manufacturing

Benefits to the Nation

- Cut down wax import by 50% in the country
- Saved foreign exchange >Rs. 500 Crore/annum
- Wax plant contributes to the GDP of Assam by 0.1%
- Commercialization of indigenous Wax De-oiling Technology is in line with 'Make in India' initiative of Government of India (GoI)

Future Commercialization Potential

- CSIR IIP-EIL-NRL have plans to commercialize Wax De-oiling technology in 2 Indian Refineries to produce ~35 KTPA Paraffin Wax. This technology is very competitive for refineries having availability of heavy waxy feed stocks not only in India but abroad as well

For detailed information please contact

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