



SOLVENT DEASPHALTING (SDA)

Solvent Deasphalting (SDA) is one of the most interesting "bottom-to-barrel" technologies for the processing of heavy residues at modern refineries. The technology "SDA PLUS" captivates by its low investment costs as against other residue technologies such as hydrocracker, coker, visbreaker or gasification. Own pilot plants and long years' research and development activities for various process applications enable us to ensure an optimum technological and cost-efficient plant design.

TECHNICAL FEATURES

In Solvent Deasphalting asphaltenes are removed from the feedstock in an extraction column. The resulting deasphalted oil (DAO) undergoes further processing to become base oils or fuels. The produced high-asphalt pitch can be processed to bitumen by the Biturox® process or blending, depending on the residue used and bitumen quality needed.

We offer the "SDA PLUS" technology both for sub-critical and super-critical operation. The latter requires less operating costs but higher investments (Fig. 2).



Fig. 1: Propane deasphalting plant (PDA), H&R Ölwerke Schindler GmbH, Hamburg, Germany

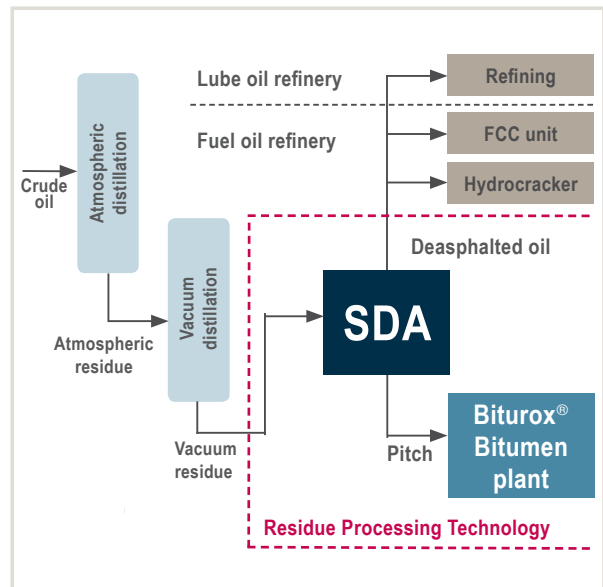


Fig. 2: SDA plant as integral part of a state-of-the-art residue technology

Other specific process applications are:

- Two-stage extraction for extra separation of DAO, resin and pitch.
- Optimization of DAO yield by resin and pitch mixing to bitumen.
- Further processing of DAO to aromatic oils (tender oils - TRAE).

At a proprietary pilot plant the necessary process parameters and optimal process conditions are determined based on the customer's, process and product requirements. It allows us to validate the entire solvent chain from C₃ to C₆ for the process selection.

SDA PLUS
EDL • TECHNOLOGY

The pilot tests are the foundation for an optimal solution based on the quality requirements and enable our customers to secure their competitive edge (Fig. 3).

Results obtained from the pilot tests are in particular:

- Determination of equilibrium data
- Optimization and determination of process parameters
- Optimization of solvent rate used for feedstock
- Analysis of product qualities of DAO, resin and pitch
- Determination of DAO, resin and pitch yields



Fig. 3: Pilot plant of EDL based in Leipzig, Germany

FEEDSTOCK

- Vacuum residue
- Atmospheric residue
- Heavy residues
- Hydrogenation residues
- Used oil

PRODUCTS

- Deasphalted oil (DAO)
- Resins
- Pitch for bitumen processing
- Pitch for use as energy source
- DAO for production of Treated Residual Aromatic Extract (TRAЕ)

ECONOMIC EFFICIENCY

To increase efficiency and obtain optimal product qualities, we use state-of-the-art column internals. The optimization of processes and application of an advanced technology ensures a yield increase of up to 10 % in existing plants. Efficient technologies can reduce the operating costs by up to 25 % as against conventional technologies.

BENEFITS FOR CUSTOMERS

We offer a comprehensive range of pilot tests from special analyses through to thermodynamic and hydraulic design of SDA extractors and the entire process unit.

Thanks to the consistent development we can provide our customers with various process applications and the entire range of solvents. So, we combine our many years of experience in plant engineering with most advanced process solutions.

REFERENCES

H&R Ölwerke Schindler GmbH, Hamburg: new PDA plant and extension

Further references cover manufacture and delivery of:

- Internals (packings & distributors) for 22 DAO extractors
- Internals (packings & distributors) for 4 DAO separators for super-critical operation
- 1 resin settler with equipment diameters from 1.8 to 6.5 m depending on customers' requirements.



Fig. 4: OAO Naftan, Novopolozk, Belarus: Engineering and delivery of two extractors for conversion of PDA plant

EDL ANLAGENBAU GESELLSCHAFT MBH

Lindenthaler Hauptstrasse 145 | 04158 Leipzig | Germany
Telephone: +49 341 4664-400 | Fax: +49 341 4664-409
Email: gf@edl.poerner.de
www.edl.poerner.de

SULZER CHEMTECH LTD.

Neuwiesenstrasse 15
8401 Winterthur | Switzerland
Email: contactpt@sulzer.com
www.sulzer.com