

# “POLISHLUBE”

## Distilled Black Lube Oil Treatment & Polishing Plant



**Treatment & Polishing of Base Oil as per API Group II**

**Enviroflex GmbH** is an Austrian company with a subsidiary in Germany that delivers complete **Used Lube Oil Re-refineries** for production of Base Lube Oil. The designed Re-refineries consist of several Distillation/Evaporation stages in low and very high vacuum, then Distilled Oil is treated in Treatment & Polishing Plants called “**POLISHLUBE**” which are designed and manufactured by Enviroflex in Germany. The **POLISHLUBE** plants are used to pass the distilled lube oil through **Activated Sorbent** called **TURBOSORB** which is blended & developed by Enviroflex. The color, sulfur, acidity, and aromatic contents of oil are reduced to produce Base Oil as per **API Group II** and even API Group III. The Sorbent is reactivated several times in the **POLISHLUBE** plants before replacement.

The **POLISHLUBE** plants are delivered to treat and polish oil in different capacities in range of **0.2 to 70 ton per day**. They are designed and manufactured in Germany to meet the following operational requirements for processed and polished oil.

- The reduction of Sulfur
- The reduction of Color, white to light-yellow
- The reduction of Aromatic and removal of bad smell
- The reduction of Acidity
- The removal of Ester
- The removal of Particulate Matter and Dirt

The unique feature that distinguishes Enviroflex **POLISHLUBE** plants compared to conventional oil polishing plants is the ability to treat, polish, and clarify the distilled oil continuously using a cyclic program that reactivates the sorbent inside the reactors after oil polishing is completed. The cyclic program consists of three stages **Filling, Oil Polishing and Sorbent Reactivation**. The Reactivation of Sorbent is fully automated and enables the polishing plant to process oil again and again, 150 to 500 times before sorbent replacement.

The plants usually consist of some Modules on some frameworks:

- Oil Polishing Reactors Modules (Banks)
- Feed Module
- Sorbent Reactivation Module
- Control Module

Another unique feature of **POLISHLUBE** plants is the usage of Reactors (Jacketed columns) made of boiler grade steel, instead of simple columns.



### Specification of the Polished Oil

- ✓ Color < 1.0, as per ASTM D-1500
- ✓ Sulfur < 300 ppm, as per ASTM D-2622
- ✓ Acidity < 0.01 mg KOH/g, as per ASTM D-974
- ✓ Aromatic < 2.0%, as per ASTM D-2007
- ✓ Ester content approx. Zero
- ✓ No Smell, No Re-turbidity





Roots Blower & Acoustic Hood for Sorbent Reactivation



Feed & Reactivation Module



Polishing Plant with Two Banks

The operational cost of our **POLISHLUBE** Plants is very low. The costs for a plant in Europe with a feed capacity of 20 tons/day (6000 tons per year) are:

. Approx. 7 EUR/ton for the Sorbent and other consumable materials & parts

. Approx. 15 EUR/ton for energy cost

. Approx. 14 EUR/ton for required operational staff

. Total: Approx. only 36 EUR/ton equal to max. 40 US\$/ton (216,000 EUR/year)

Some high sulfur content oil, called Scrap-Oil, is extracted during the end of the sorbent reactivation stage. The amount of the Scrap-Oil is maximum 2% of the feed oil to the polishing plant. The Scrap Oil is not considered a waste, as it can be reprocessed in the distillation unit of the Re-refinery.

Polishing by  
Activated Sorbent  
"TURBOSORB"

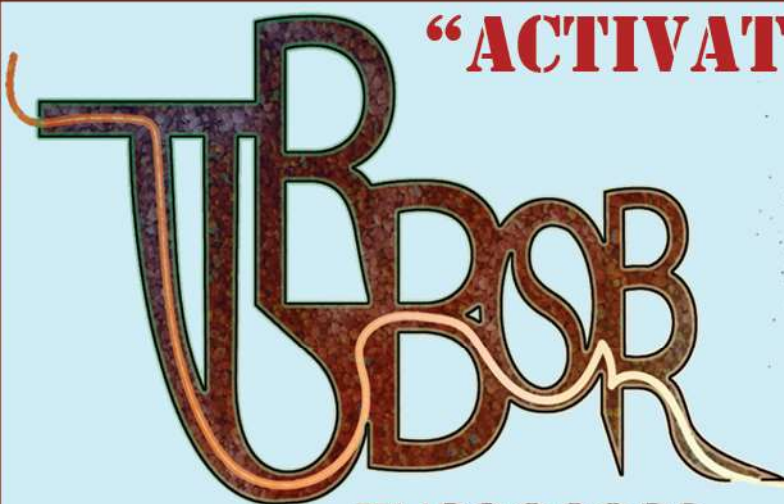
Up to 500 times  
Reactivations before  
Sorbent Replacement

Delivered Plant to a  
Re-refinery in  
Germany

Design with Jacketed  
Reactors insted of simple  
Columns

Consists of Sorbent  
Reactivation System

0.2 to 70 Ton  
per day, Feed of distilled Oil



**"ACTIVATED SORBENT"**

**TURBOSORB**



**BX-B2050**  
for Black Distilled Oil



**BX-T2060**  
for Transformer Oil

**TURBOSORB-Bx** series are adsorbents consisting of Aluminium Oxide-gamma. It has been used for Polishing of Black Distilled Lube oil as well as in the petrochemical industry and for fuel jet clarification. Another important application is paraffin and naphthenic insulation oil regeneration used in transformers. Both applications use the percolation process.

**Product:** Aluminium Base Sorbent

**CAS NO.:** 92797-42-7

**Brand:** TURBOSORB

**TYPE:** TURBOSORB-BX

**Capacity:** 1.5 to 3 kg of oil can be passed through 1 kg of TURBOSORB-Bx-Series before sorbent saturation

**Reactivation method:** Thermal, Electrical, up to 500 time

**Enviroflex Altöltechnik GmbH**

Hamburger Str. 181 • 25746 Heide • Germany

<https://enviroflex.at>

@ [office@enviroflex.at](mailto:office@enviroflex.at)

+49 176 1511 2890

+49 481 6406 2288

