



PROCESSING AND ENVIRONMENTAL CATALYSIS

CLEAN ENERGY TECHNOLOGIES

PURIFICATION & STABILIZATION OF WASTE USED OILS

The ROBYS™ Process

The "ROBYS™ Process" purifies and stabilizes thermally re-cracked gas oils. ROBYS™ is designed as an add-on unit to used oil recycling and conventional petroleum refining operations. The process has been licensed to Aldwich Canada of Sudbury, Ontario for world-wide, commercial deployment.

The first commercial ROBYS™ plant has been installed in Malaysia. It was started up successfully in 2005 and it has been in operation ever since.

The ROBYS™ technology owes its beginnings to R&D efforts to solve severe product quality problems at a Canadian used oil reprocessing plant. Used oils typically include spent crankcase motor oil and lubricants. In the course of reprocessing, used oils undergo a thermal cracking process that produces an unstable, smelly gas oil. ROBYS™ effectively stabilizes and purifies this gas oil.

What's Special about ROBYS™?

The ROBYS™ process can produce gas oils that:

- Are not odorous (foul smelling);
- Meet regulatory and consumer colour criteria;
- Minimize the formation of gums and tars – during storage; and
- Are not highly acidic

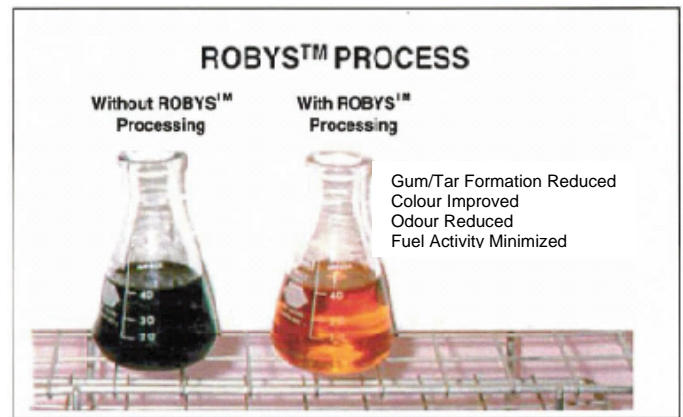


Fig. 1: Used oil with and without processing

Stand-alone System:

One of the great advantages of the ROBYS™ process is that it can be designed as a stand-alone fuel purification and/or stabilization process. It can be skid-mounted and installed with minimum interruption to production. The ROBYS™ process can also be adapted to other applications where hydrocarbons need to be purified and/or stabilized.

Odour and Colour:

There are several other processes on the market that convert used oils into fuels, but without ROBYS™, their partially processed products often contain compounds that cause foul odours. In addition, these raw gas oil products are usually dark in colour, which makes their marketability poor, without ROBYS™.

Gum and Tar Formation: In some reprocessing operations, used oils that are thermally cracked at high temperatures produce oils rich in olefins. Rich olefinic oils tend to polymerize and form tarry deposits that can impair equipment by plugging pumps, lines, and burner tips. This, in turn, causes maintenance problems, plant and equipment downtime, fuel wastage and incomplete combustion. The ROBYS™ process can minimize these problems.

Acids and Odours: Some thermally cracked used oils are corrosive with excessively high acid numbers. This can fail ASTM criteria for fuels. Waste-oil conversion processes without the ROBYS™ process seldom deal effectively with various acids present in the reprocessed fuel. The ROBYS™ process substantially reduces the content of sulphur and chlorine species, the very elements that also give rise to high acid numbers and malodourous odours.

For most waste-derived fuels, the above-mentioned factors limit market penetration.

The ROBYS™ process can purify and/or stabilize refined gas oils, opening new markets.

Have Your Waste/Used Oils Tested

Potential sub-licensees can for a fee, provide used oil samples where they will be screened for their potential to be purified and stabilized by the ROBYS™ process. Clients will be issued a confidential, customized report

Improved Economics of Used Oil Reprocessing

The ROBYS™ process greatly improves the economics of waste-oil reprocessing. It was developed through collaboration between Aldwich Canada (previously Par Excellence Developments) and the CANMET Energy Technology Centre-Ottawa. Aldwich Canada is a Canadian industrial technology development and transfer company.

What Next?

If you wish to explore the feasibility of this innovative technology for your facility, here are some courses of action:

- Obtain more detailed technical information regarding the ROBYS™ process by contacting Aldwich Canada directly.
- Submit your used oils to the CANMET Energy Technology Centre-Ottawa, where, for a fee, CANMET will perform a customized screening run to evaluate the potential application of the ROBYS™ process to treat your waste used oils.
- Visit Aldwich Canada's website and related links for current information, including photographs of the first commercial ROBYS™ plant in Malaysia
http://www.nrcan.gc.ca/se/etb/cetc/pdfs/waste_oil_malaysia.pdf

Call Aldwich Canada 705-669-1870

- For specific details regarding the process economics for a wide variety of applications of the ROBYS™ process; and
- About sub-licensing the ROBYS™ process.

You can also call the CANMET Energy Technology Centre-Ottawa (613-996-8693) for information on used oil and other hydrocarbon product testing.

About the Co-Developers of ROBYS™


Aldwich Canada has extensive expertise in used oil processing, fuel purification technology and odour control.

The company has the world-wide licensing rights for this technology and is seeking new contacts with petroleum or waste oil management companies for the purpose of sub-licensing.

The CANMET Energy Technology Centre-Ottawa is Canada's premier organization in the field of energy science and technology. Its scientists and engineers are leaders in their fields and its laboratory facilities are one-of-a-kind in Canada.



Your Invitation to Work with Us

We are interested in collaborating with you. Please contact the Business Office to discuss your particular needs.

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