

CASE STUDY



PROJECT: Retrofilling on-site transformer | Canada

ESTER TYPE: MIDEL eN 1204 natural ester (rapeseed/canola)

PURPOSE: Improve environmental credentials of on-site asset

[OVERVIEW]

A leading pharmaceutical company in Toronto, with global outreach and a reputation for rapid deployment of critical and affordable medicines, identified a potential environmental concern at its corporate headquarters.

A Canadian-made, on-site transformer, rated at 4500/6000kVA 27.6kV-600/347V delta-wye had been acquired in 2012 and was operating with mineral oil as its insulating fluid. The company was advised by an Ontario-based High Voltage (HV) Maintenance Contractor of some concerns about mineral oil being used in the transformer, namely:

- mineral oil's slow rate of biodegradability
- mineral oil's potential flammability



CASE STUDY

[SITUATION]

Mineral oil's disadvantages presented the pharma company with challenges to its stance on Corporate Social Responsibility and its guiding value of making and using products with a reduced impact on the environment. Clearly, alternatives to mineral oil in the transformer needed to be explored.

The HV contractor recommended refilling the transformer (replacing the mineral oil) with a biodegradable MIDELESTER fluid, in this case MIDELESTER eN 1204. Sustainably sourced from canola crops, this is a K-class fluid with a fire point of >300°C (compared to mineral oil's fire point of 170°C). MIDELESTER eN 1204 also provides superior cold weather performance with its pour point of -31°C, and can extend the life of the transformer by slowing the ageing rate of the solid insulation inside the transformer.

[RESULT]

Retrofitting the transformer ensured that in the event of the unit rupturing and leaking insulating fluid, the environmental damage would be mitigated; clean-up costs would also be dramatically reduced and there would be no risk of a pool fire (due to ester fluid's low calorific value) - a risk substantially increased with the use of mineral oil as a transformer fluid.

When performed by an experienced service company, following specific guidelines provided by the MIDELESTER technical team, retrofitting is a safe and straightforward process. Replacing the transformer fluids takes place on-site and requires only a brief shutdown of the unit, minimizing any disruption to business and operations.

MIDELESTER ester transformer fluids have been used in the retrofitting of distribution transformers since the 1970s. They offer a proven solution for transformer owners looking to substantially improve fire safety, environmental protection and transformer life expectancy.

[midel.com](https://www.midel.com)



“In this case, MIDELESTER eN 1204 helped a major corporation reinforce its environmental credentials to further enhance its robust stance as a responsible corporate citizen”

Anthony Coker
Sr. VP of Sales and Commercial Operations for MIDELESTER Americas

The use of MIDELESTER ester fluids in this project supports the following UN Sustainable Development Goals:

