

CASE STUDY



PROJECT: High value manufacturing site I UK

ESTER TYPE: MIDEL 7131 synthetic ester

PURPOSE: Retrofilling to reduce transformer fire risk

[OVERVIEW]

At a high-value manufacturing facility in the UK, a potential fire risk was identified within its building – a 1500kVA mineral oil-filled transformer located in proximity to large gas cylinders. Given the potential flammability of mineral oil, the customer reviewed options to mitigate this risk.

Transformers are often cited as one of the top five high-risk assets, with electrical and mechanical failures being a key cause of unplanned outages in power transmission and distribution. The consequences of a transformer failure could range from production equipment stopping mid-cycle, the lights going out or in severe cases, a fire – and the flammability and toxicity of mineral oil clearly highlights the possible dangers of its use as a dielectric fluid.



CASE STUDY



[SITUATION]

The decision was taken to replace (or “retrofill”) the mineral oil in the unit with MIDEL 7131 – a K Class, synthetic ester fluid with a very high fire point (>300°C). MIDEL 7131 is also biodegradable and non-toxic, so delivering additional environmental benefits for the customer. As a result of retrofilling the transformer with MIDEL 7131, the asset will be able to run at higher operating temperatures, delivering more reliability for the end user.

Grosvenor Oil Services, a MIDEL Service Partner was contracted to carry out the retrofilling work. To reduce disruption the work was completed on a one-day outage on-site during the Christmas shutdown period.

The old mineral oil was drained into suitable containers and removed from site for disposal in accordance with Environment Agency legislation. The new MIDEL 7131 ester fluid was processed into the transformer in accordance with manufacturer M&I Materials’ guidelines for retrofilling. The transformer was returned to service shortly after the work was completed.

[RESULT]

Gavin Allen, Managing Director at Grosvenor Oil Services commented: “Risk mitigation was central to the customer’s concerns on this project. A transformer fire in this high-tech, high-value facility would mean huge disruption to productivity, not to mention revenue loss and reputation damage. A mineral oil replacement, or retrofill with MIDEL ester fluids eliminates the transformer fire risk because of the fluids’ high fire point. MIDEL fluids are also biodegradable, unlike mineral oil which is both toxic and non-biodegradable, so using MIDEL also delivers environmental benefits.”

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

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Gavin Allen
Managing Director, Grosvenor Oil Services (MIDEL Service Partner)

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

