

CASE STUDY



PROJECT: Chemical plant retrofill | Mangalore, India

ESTER TYPE: MIDEL 7131 synthetic ester

PURPOSE: Business continuity for chemicals factory

[OVERVIEW]

Mangalore Chemicals and Fertilizers Limited (MCFL) is part of the Adventz group, an Indian conglomerate with a significant presence in the country's agriculture, engineering and infrastructure sectors.

MCFL is the largest manufacturer of chemical fertilizers in the state of Karnataka, with its factory located north of Mangalore City. With a robust commitment to Corporate Social Responsibility, MCFL is ISO 14001 and OHSAS 18001 certified. The company extends its dedication to efficiency by ensuring the integrity of the electrical transformers used in its facilities - a vital element of its manufacturing operations. Transformers are often cited as one of the top five high-risk assets – and the potential flammability of mineral oil clearly highlights the possible dangers of its use as a transformer dielectric fluid.



CASE STUDY



[SITUATION]

The Karnataka plant's transformer, rated at 1.6MVA, 3.3/0.433kV, 50 Hz, was reviewed as part of an asset management plan. The plant's electrical Chief Manager made the decision to replace the mineral oil (potentially flammable and harmful to the environment if leaked or spilled) in the unit with an ester fluid - a process called retrofilling.

MIDEL 7131 synthetic organic ester fluid was selected because it is fully/readily biodegradable, non-toxic and provides the highest level of transformer fire safety. The fluid is also highly moisture tolerant - addressing a key concern of the transformer owner that the unit's paper insulation had degraded due to the region's high humidity. Crucially, the retrofilling operation had to be completed in one day, to ensure minimal disruption to the factory's output.

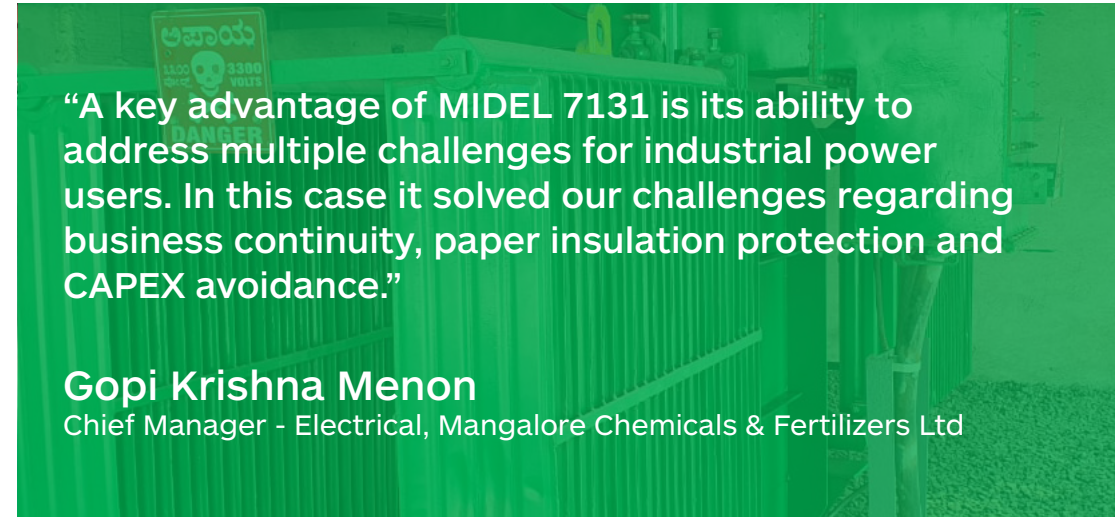
[RESULT]

MIDEL's synthetic organic ester fluid successfully arrested the degradation of the paper insulation and thus saved MCFL the cost of replacing the transformer. Following the retrofill upgrade, which was completed within 24 hours, the transformer was tested by an independent engineering company that confirmed a 310°C degree fire point. The key advantages of MIDEL 7131 include:

- The highest fire safety rating (K3): >300°C fire point and net calorific value of <32MJ/kg
- Fully/readily biodegradable
- High oxidation stability
- Superior moisture tolerance
- Compliant with BIS 16081, 16099 and 13503

MIDEL ester fluids provide a strong addition to a company's efforts to demonstrate Corporate Social Responsibility and Business Continuity, in addition to providing a high level of confidence and reassurance to shareholders and investors.

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“A key advantage of MIDEL 7131 is its ability to address multiple challenges for industrial power users. In this case it solved our challenges regarding business continuity, paper insulation protection and CAPEX avoidance.”

Gopi Krishna Menon

Chief Manager - Electrical, Mangalore Chemicals & Fertilizers Ltd

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

