

Nissin Electric to Use Biodegradable Electrical Insulating Oils for Its Oil-Filled Equipment —Promoting Environmental Load Reduction with Environment-Conscious Products Using Technological Capabilities—

Nissin Electric Co., Ltd. will use environment-conscious and highly biodegradable electrical insulating oils of low fish toxicity for all the oil-filled equipment (capacitors, instrument transformers, reactors, and transformers) the company manufactures and sells. The biodegradable electrical insulating oils Nissin Electric will use are LI-B1 oil for capacitors and instrument transformers and rapeseed oil for reactors and transformers. The company will start accepting orders for these products in November 2020.

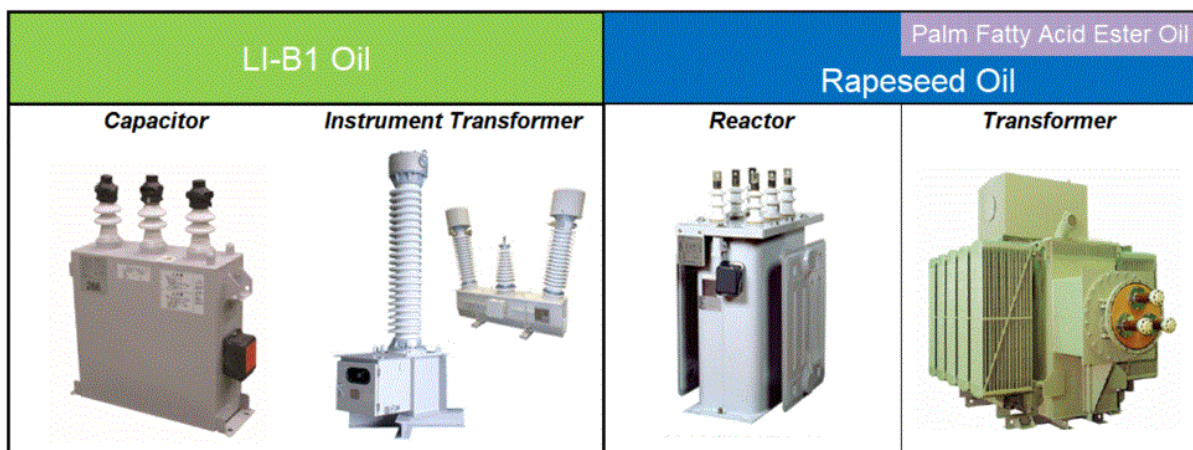
From the viewpoint of long-term reliability, the principal ingredient of electrical insulating oil for electric power equipment has been petroleum-based aromatic hydrocarbon, which is stable, hard to be decomposed, and highly insulating. However, there has been concern that, in the event of a large-scale disaster or some other casual incident that damages electric power equipment to make it leak, the oil may pollute the soil, rivers, oceans, and groundwater and affect the ecosystem. Therefore, there is a need for a switch to an insulating oil that is easily decomposed by bacteria and ecologically safe. In recent years, insulating oils that have excellent biodegradability and only a small impact on the ecosystem have been increasingly used for transformers and drawing attention, such as palm fatty acid ester oil, rapeseed oil, and soybean oil. In 2014, Nissin Electric developed and commercialized a transformer that used plant-derived biodegradable palm fatty acid ester oil as electrical insulating oil.

Moreover, in 2019, Nissin Electric collaborated with Lion Specialty Chemicals Co., Ltd. to develop LI-B1 oil, a new electrical insulating oil that has excellent biodegradability and only a small impact on the ecosystem and yet meets performance requirements, which were difficult to satisfy before, for use with capacitors. This oil has acquired EcoMark certification (certification number: 16 110 001). The development of this new oil has enabled Nissin Electric to offer all types of oil-filled equipment with biodegradable electrical insulating oil.

[Major features of LI-B1 oil]

- Insulation performance as excellent as conventional electrical insulating oils
- Excellent biodegradability with at least 75% degradation in 28 days (according to OECD 301F test results)
- Small impact on the ecosystem

Nissin Electric will continue to focus on the development of environment-conscious products and strive to disseminate environmentally friendly products, thereby promoting the reduction of environmental load with its distinctive products.



Nissin Electric will continue to commercialize oil-filled equipment that uses its original insulating oil.