



## Products that Contribute to the Environment

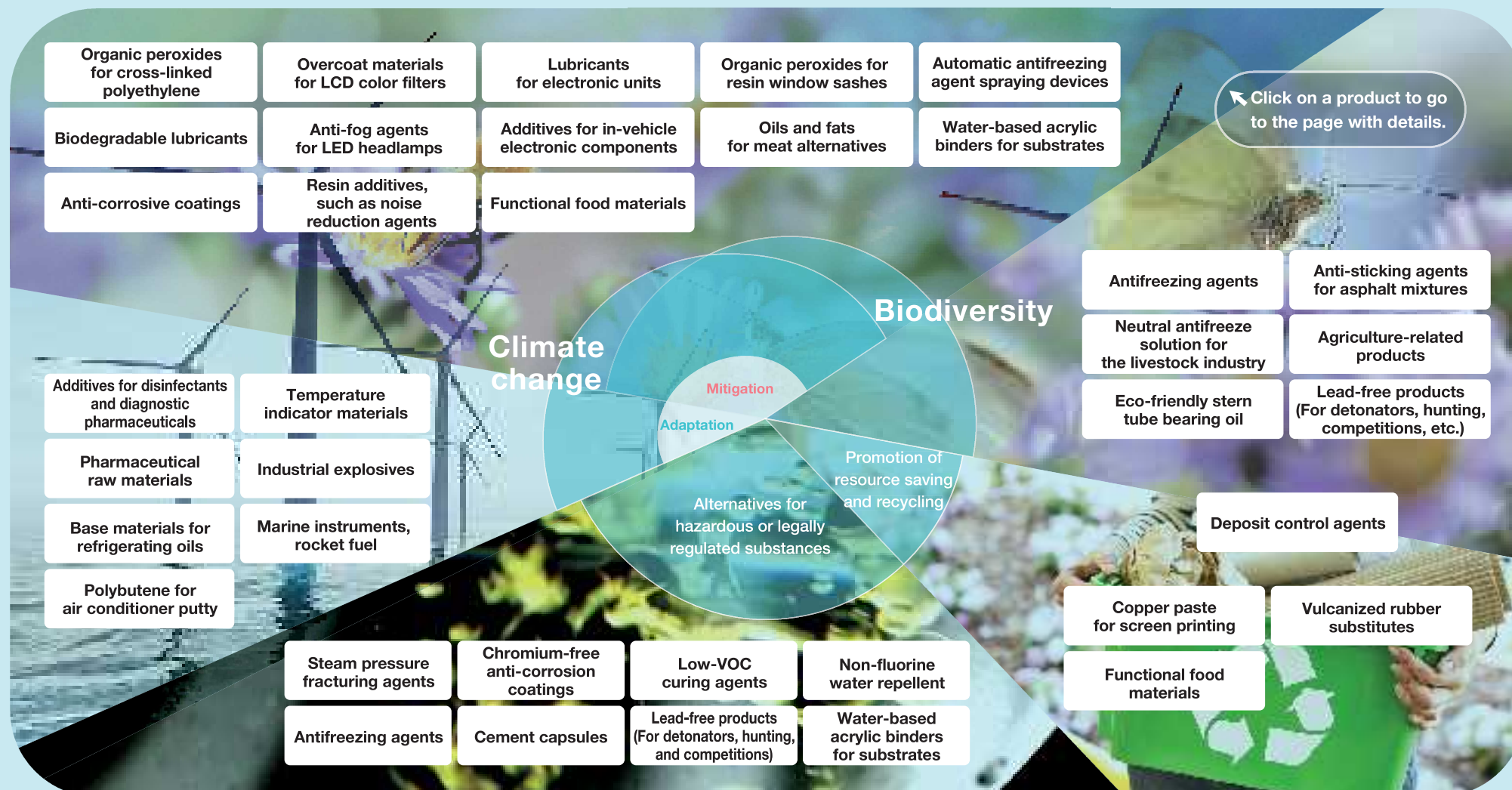
GRI 201-2/304-2/417-1

In response to global issues such as climate change and biodiversity, the NOF Group is conducting research and development for technologies (cleantech) in our three prioritized business fields, and creating a variety of products that contribute to the environment.

Products that contribute to the environment, including to address climate change and biodiversity, among the cleantech-related products of the NOF Group

☀ Responses to Climate Change (TCFD) | 📖 ▶ P. 107-121

🐦 Biodiversity Conservation | 📖 ▶ P. 141-147





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## Products that contribute to the shift to EVs

Functional Materials business

Metal Coatings business

- Additives for in-vehicle electronic components
- Lubricants for electronic units
- Anti-corrosive coatings
- Overcoat materials for LCD color filters
- Resin additives, such as noise reduction agents
- Anti-fog agents for LED headlamps



It is expected that electric vehicles (EVs) will contribute to climate change mitigation because they generate less greenhouse gas emissions than gasoline-powered vehicles when running. In addition, compared to gasoline-powered vehicles, EVs are expected to require more electronic components (passive components), electronic units, LCD panels, very quiet components, and power-saving components. Thus, the NOF Group's products used in these applications provide positive contributions in this area. Climate change mitigation also contributes to biodiversity because it reduces the ecological imbalance caused by global warming.

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## Products that contribute to renewable energy

Functional Materials business

Metal Coatings business

- Organic peroxides for cross-linked polyethylene
- Biodegradable lubricants
- Anti-corrosive coatings



Eco Mark Certification Number:  
08110006  
Name of utilizing contractor:  
NOF CORPORATION  
Products: MILLUBE® series

Renewable energy such as wind power and solar power are becoming increasingly important because they do not produce greenhouse gases. Our anti-corrosive coatings and biodegradable lubricants used in wind power generation blades and gears for wind power generation provide positive contributions in this area. In addition, ultra-high voltage and high-voltage electric wires are indispensable to transmit electricity from wind and solar power generation sites. Thus, our organic peroxides for cross-linked polyethylene used as a coating material provide positive contributions to the spread of renewable energy.



## Products that Contribute to the Environment

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### Products that contribute to reducing greenhouse gas emissions and securing protein sources

Functional Foods business

- Oils and fats for meat alternatives



Due to the greenhouse gases (methane) produced by the livestock industry and the protein shortage accompanying the rapid growth of the global population, movements are starting to find new sources of protein. NOF's oils and fats for meat alternatives are contributing to the spread of soy protein and other such meat alternatives, as they enhance the flavor and texture of these products through our proprietary oil and fat processing technologies.

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### Products that contribute to the spread of energy conservation

Functional Materials business

- Organic peroxides for resin window sashes

Window sashes made using vinyl chloride resin contribute to the spread of energy-efficient housing because of their excellent heat insulation. Organic peroxides are used as polymerization initiators for the vinyl chloride resin, and thus contribute to the spread of energy conservation.



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### Products that contribute to the reduction of food loss

Functional Foods business

- Functional food materials

Securing food resources has become an issue, as waste due to expiration of food products leads to food loss. NOF provides functional materials for food that can maintain the softness and improve the texture and volume of breads and sweets, thereby contributing to reduction of food loss by preventing waste due to expiration.







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## Products that contribute to the prevention of ozone layer depletion

Functional Materials business

- Base materials for refrigerating oils



HFC (Hydrofluorocarbon) refrigerants, which do not deplete the ozone layer, are increasingly used as refrigerants for air conditioners and refrigerators. Base materials for refrigerating oils enhance co-solubility with HFC refrigerants and improve their thermal stability, electrical insulation performance, and other factors. Moreover, the low viscosity contributes to saving energy consumption. In recent years, refrigerants with a smaller global-warming potential compared with previous products are required. NOF is now supplying refrigerating machine oil for refrigerants with a low global-warming potential.

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## Products that contribute to biodiversity, climate change mitigation, and environmental conservation

Explosives & Propulsion business

Nippon Koki Co., Ltd.

- Antifreezing agents
- Automatic antifreezing agent spraying devices



KAMAGU®, together with AUTOKAMAGU® JET, is proving highly effective against the freezing of road surfaces.

Antifreezing agents, such as calcium chloride conventionally used on road surfaces in cold areas, have posed the problem of “salt damages.” NOF’s antifreezing agent KAMAGU®, an acetic acid-derived chemical containing no chloride, poses no fear of salt damages. It is also an eco-friendly anti-freezing agent with minimal impact on plants. AUTOKAMAGU® JET, an automatic antifreezing agent spraying device, is a sensor-based system that automatically sprays KAMAGU® onto snowy or frozen roads. A type is available that works using 100% natural energy (solar energy), and thus contributes to climate change mitigation. It can also perform advanced road surface management via remote monitoring and control, and therefore contributes to both environmental conservation and road safety along with the antifreezing agent.



Climate change

Biodiversity

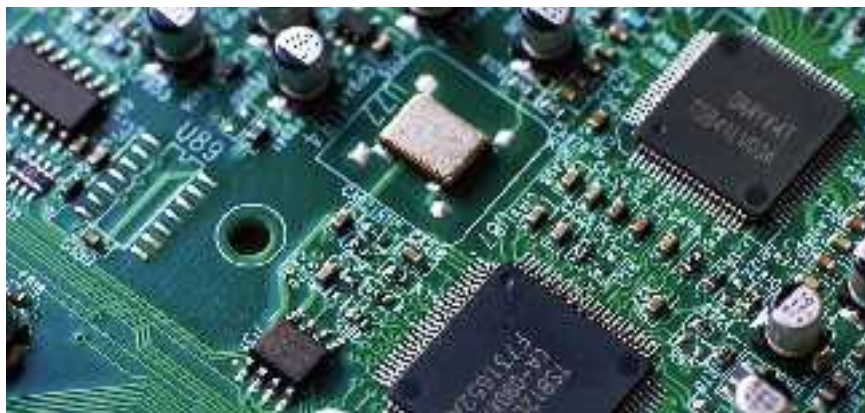
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## Products that contribute to environmental conservation and energy saving

Functional Materials business

- Water-based acrylic binders for substrates



Demand for ceramic substrates and green sheets is increasing due to the enhanced performance and miniaturization of vehicles, electronic devices, telecommunications equipment, and other such items. Solvent-based binders, which are high in volatile organic compounds (VOCs), have typically been used to form these items. NOF's water-based acrylic binder, MARPROOF® AE-002, not only reduces environmental impact and improves worker safety due to its low VOC levels, but also offers excellent thermal decomposition at low temperatures, which contributes to energy saving.

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## Products that contribute to climate change adaptation (air conditioners / refrigerators)

Functional Materials business

- Base materials for refrigerating oils
- Anti-corrosive coatings
- Polybutene for air conditioner putty



As temperatures rise, there is an increasing need for air conditioners and refrigerators around the world, including in developing countries. Base materials for refrigerating oils, which are used for refrigerator lubricants, as well as polybutene for putty used for air conditioners, which fills in gaps in outer walls, provides positive contributions in this area.