

# Product Development

## Eco-friendly Product Development

### Products Promoting Energy Saving

#### Synthetic rubber for fuel-efficient tires

ZEON maintains the top position in production capacity of general-purpose rubbers used in such products as fuel-efficient automobile tires and abundant varieties of oil resistant special rubber including "Zetpol®".

Through this, a general-purpose rubber for tires that saves energy loss by 20% was developed. Fuel consumption can be reduced by 1.5% (estimate by ZEON) by application of tires made of this rubber, and this contributes to reducing CO<sub>2</sub> emissions.



Automobile tire made of fuel-efficient synthetic rubber

### Products Promoting Energy Saving

#### Polymerized Toner "Zeoglobule®"

Toner used in such products as copiers has been conventionally manufactured by the pulverization method. It had been known that manufacturing energy consumption could be reduced and fine toner particles can be obtained by polymerization method.

The polymerization method microcapsule toner developed by ZEON contributes to high quality picture, and at the same time makes it possible to lower the fixing temperature also contributing to faster printing, compact printers and energy savings.



Toner electron microscope image

#### Conventional toner (pulverization method)

- Disadvantages
- Limitation in lowering fixing temperature
- Limitation in decreasing particle size
- More energy consumption

#### Polymerized Toner "Zeoglobule®"

- Advantages
- Low fixing temperature through encapsulation technique
- High imaging quality through small particle diameter
- Reduced energy consumption through low temperature fixing



Adhesive tape products where thermoplastic elastomer is applied

### Products Contributing to Solvent-free Technology

#### Non-solvent type thermoplastic elastomer "Quintack®" for adhesive tape

Previously, VOC (volatile organic compound) reduction were released into the environment because solvents were used in the adhesive tape manufacturing process.

An adhesive tape manufacturer can produce tape products, without solvent, based on hot melt technology by application of "Quintac®", which has a block structure of polystyrene and polyisoprene. In addition, this technology contributes to saving of energy which used to be required to evaporate solvents in the post manufacturing process.



Road marking paint using C5 petroleum resin

### Products Promoting Solvent-free Technology

#### C5 petroleum resin "Quintone®" for hot-melt road marking

Hot melt road marking using "Quintone®" C200 series as a binder component are road marking paints that can be used in construction without solvents. This contributes to VOC (volatile organic compound) reduction.

