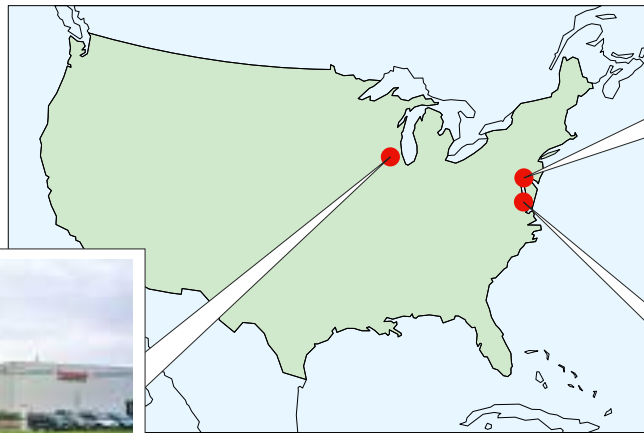




## The Pleasant Prairie plant operating with a 99.8% organic solvent removal rate



Pleasant Prairie plant (Wisconsin, USA)

Products made: Tape



New Brunswick plant (New Jersey, USA)

Products made: Tape



Lakewood plant (New Jersey, USA)

Products made: Sealing materials, vibration-damping reinforcing material

### Promoting the "7 C's"

Nitto Denko has 12 manufacturing companies outside Japan. Of these, we would like to introduce the environmental protection activities of Permacel of the USA. As a company, Permacel feels it their inherent responsibility to society and the planet to protect the global environment. They are reducing the environmental load of their activities based on a "7 C's" environmental policy.

#### Elements of Permacel's Environmental Policy; The Seven C's

- Commitment to prevention of pollution, to a clean earth and atmosphere, and to a healthy environment.
- Continual improvement through meeting objectives and targets.
- Consideration of resources that minimize the impact on the environment.
- Conduct operations with limitations in the use of energy and creation of waste.
- Control of air and wastewater discharges to assure minimal impact on the environment.
- Compliance will be fully met, with the goal of exceeding requirements wherever possible.
- Communication of the Environmental Management System to all employees through training.

### Land Donated for Environmental Protection

In locating the Pleasant Prairie plant, Permacel purchased the adjoining 27 acres (10.8 hectares) of forestland and donated it to the community of Pleasant Prairie on the condition that they would maintain and manage the natural state of it. That land is today in the exact same state it was in when Permacel purchased it.

#### Company Profile

- 1927 ... Founded as a division of Johnson & Johnson.
- 1982 ... Acquired by Avery International Corporation.
- 1988 ... Acquired by Nitto Denko (New Brunswick plant, New Jersey plant, etc.)
- 1990 ... Built Lakewood plant (New Jersey).
- 2002 ... Built Pleasant Prairie plant (Wisconsin).

- ISO14001 Certification obtained
- ISO9001 Certification obtained
- QS9000 Certification obtained
- AS9000 Certification obtained

#### Major Products

- Electrical insulating tapes ● Electronic component carrier tapes ● Masking tapes for PCBs ● Fluoroplastic adhesive tapes ● Packaging tapes ● Double-coated adhesive tapes ● Paper masking tapes ● Surface protection products ● Sealing products

### Greatly Reduced the Organic Solvent Released into the Atmosphere

Before being acquired by Nitto Denko, Permacel released more than 1,300 tons of organic solvent into the air at its New Brunswick plant (records for 1987). Yet, since 1988 when Nitto Denko purchased the company, systems have been modernized for pollution prevention. This included the installation of a solvent recovery unit, repairs to older units and installation of new deodorizing furnaces, and 24-hour monitoring of emissions using an exhaust gas monitor. As a result, the 1,142 tons of chemical substances released into the air every year up until 1988 was reduced to 204 tons per year by 1995. During this time, Permacel took part in a voluntary plan program promoted by the US government and received an award from then Vice-President Al Gore for their contributions to the prevention of air pollution. At present, there are 6 deodorizing furnaces and 1 solvent recovery unit in operation. Also, the Lakewood plant which was built in 1990 had environmental measures incorporated from its design stage, and

construction and equipment installation was accomplished accordingly. As a result, the atmospheric release of organic solvent has been kept at or below 1.5 tons per year since the plant started operation and, in 2002, that figure was 0.5 tons per year. Permacel will continue to further strengthen management and reduce the use of chemical substances.

### Plant Starts Up with State-of-the-Art Environment-friendly Technology

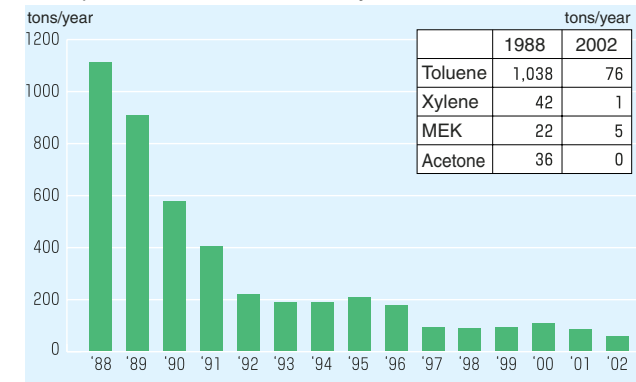
Completed in 2002, the Pleasant Prairie plant started operations in February 2003. As an industrial plant, it clears the highest environmental standards. In fact, in pre-commencement tests witnessed by state officials, organic solvent removal was measured at 99.8%, beating the original target of 99.5%. Moreover, energy conservation has been taken into consideration as the heat generated in the incineration of solvents by the deodorizing furnace is used to preheat feed air to the oven room where the coating machine is located, as well as to keep the oven warm.

### Environmental Merits

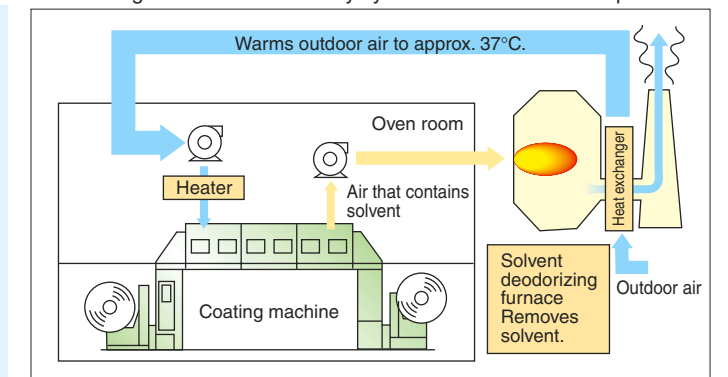
- [1] Organic solvents released from the plant into the atmosphere can be kept to 0.5% or less.
- [2] Because the air supplied to the oven is hot, heater energy can be reduced by approximately 30%.
- [3] Because clean outdoor air is drawn in and warmed by a heat exchanger, temperature can be kept constant. Moreover, because air that contains solvents is channeled to a deodorizing furnace, the work environment can be kept in good condition.



Atmospheric release of chemicals by Permacel



Deodorizing furnace heat recovery system at Pleasant Prairie plant



### Our Activity



I think about the environment using standards that exceed existing laws and regulations.

Linda Labanco  
Permacel

In August of 1989, on the day I accepted the position at Permacel, it was publicly announced on a local radio station and in the newspapers that Permacel was the #1 air polluter in the state of New Jersey. I thought, "I have a challenge to look forward to in my new job!" When I began work in September, 1989, I realized that Permacel was the #1 air emitter in New Jersey because it had reported more than 2,900,000 pounds of air releases in 1987. However, I quickly learned that since Nitto Denko purchased Permacel in July, 1988, old equipment was being upgraded and a new thermal oxidizer was being installed for volatile emission destruction. As a result, between 1987 and 1995, the overall United States Environmental Protection Agency (USEPA) reportable air emissions decreased by more than 90%. During that

time, Permacel participated in a voluntary government program where we were recognized for our decreases in air emissions and awarded with a certificate signed by the former Vice President, Al Gore, which I accepted in Washington DC. As Environmental Manager it is my obligation to assure that management, supervisors and plant workers, all have a clear understanding of the environmental regulations impacting their specific job functions. If I become aware of a situation that results in an impact to the environment or it is a violation of governmental environmental regulations, I must inform management of the company's responsibility to report the situation to the USEPA or state environmental authorities.