Glossary

[*1] Industrial-Use Wipes

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These industrial-use wipes are made of paper or nonwoven fabric and resemble facial tissue or paper towels. They were developed to reliably and effectively wipe up everything from the oily grime produced in large quantities at various types of factories to the invisible micron level dust that is a problem in hospitals, research facilities, and clean rooms.

[*2] Dispersing Agent

P.5 P.24

A chemical additive that produces a homogenous dispersion of the substances in a given medium. The dispersing agent adds an electric charge to the surface of a solid or liquid, creating a three-dimensional layer that prevents the substances from agglomerating or precipitating. Examples are chemical admixtures for concrete, dispersing agents for dyes, and others.

[*3] Chlorinated Polyolefin

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This is a chlorinated version of polyolefin, a polymer substance. It is widely used as an ingredient in paints, inks and adhesives. There are two types of chlorinated polyolefin, the highly chlorinated type (chlorine content 60% or greater: used in paints and inks) and the low chlorinated type (chlorine content 10-45%: used in adhesives, inks, and paint primers).

[*4] PURE-PAK®

P.5 P.23 P.33

The world's top brand of gable-top cartons for liquid foods, owned by Elopak a.s. (Norway). In Japan, PURE-PAK® cartons have been manufactured and marketed since 1964 exclusively by NIPPON PAPER-PAK CO., LTD. (the former Jujo Paper Co., Ltd.).

[*5] NS-FUJI PAK

P.5 P.23

The brand name of brick-type beverage cartons produced by the aseptic packaging system NS-FUJI/NIPPON-SHIKOKU PAK SYSTEM®, which NIPPON PAPER-PAK CO., LTD. (the former Jujo Paper Co., Ltd.) and SHIKOKU KAKOKI CO., LTD. jointly developed. This product has facilitated long-life storage of beverages at room temperature.

[*6] Unifill System

P.5

A unique form-fill-seal system designed to produce doses of liquids and semi-liquid products such as cheeses, jellies, seasonings, and cosmetics. The system was developed by Unifill S.p.A. (Italy) of the Elopak Group and has been marketed in Japan by NIPPON PAPER-PAK CO., LTD. as its sole agency.

[*7] Hard-Coated Film

P.5

This is a film product with an extremely hard coating that helps to protect a surface from damage. It is used as a protective coating on the surfaces of liquid crystal display screens used in personal computer monitors, televisions, and others.

[*8] Ink-Jet Paper

P.7 P.9 P.18

This is a type of paper that allows printing on a non-contact basis using ejected ink particles. A variety of ink-jet paper products are available to meet different requirements: glossy type, matte type, regular type, and so on.

[*9] Low-Density Printing Paper

P.9 P.18

This is a paper product that has a significantly lower density than traditional paper yet retains its suitability for use in printing applications. When used in publications, the finished product feels relatively thick even if the number of pages is small, so demand from the publishing industry is on the increase. Further, although this paper is the same thickness as ordinary varieties, it is much lighter and can therefore lead to savings in the area of distribution logistics and others.

[*10] Wastepaper Pulp

P.10

This is a type of recycled pulp that is manufactured by defibering and removing contaminants from wastepaper such as newspapers, magazines, and container boards.

[*11] Filler

P.10 P.26

Filler is finely ground mineral such as clay, talc, calcium carbonate, titanium dioxide, and others. It is contained in paper to improve its optical and physical properties, and to increase the paper's suitability for printing as measured by opacity rating, smoothness, and receptivity to ink.

[*12] Pigment

P.10 P.26

This comprises finely ground minerals such as kaolin, calcium carbonate, and titanium dioxide. It is used as coating materials to improve the smoothness and gloss of coated paper.

[*13] DIP (De-Inked Pulp)

P.19 P.20

DIP is a type of recycled pulp that is manufactured by removing the ink from wastepaper such as newspapers and magazines.

[*14] Plug Wrap Paper

P.20

This is a type of paper used to wrap cylindrical cigarette filters. In recent years, demand has been increasing for low-nicotine and low-tar cigarettes, and the need for higher porosity is increasing.

[*15] Boiler for Waste Power Generation

P.20

A boiler that uses industrial waste such as paper sludge, refuse paper and plastic fuel (RPF), construction timber waste, old tires, and others as fuel. Heat from the boiler is used to produce steam, which in turn is used to generate electricity.

[*16] Glued Lumber

P.25

This is a construction material made of small chips of wood that are bonded together to make posts, beams, and so on. The chips are bonded together in multiple directions (length, width, and thickness) in such a way that the fibers are roughly parallel in alignment. Compared with solid timber, glued lumber has superior strength and dimensional stability.

[*17] Cloning Technology

P.26

In cloning technology, tissue from a living creature is multiplied by asexual means into a number of copies whose phenotypic expression is genetically identical to that of the original creature.

Nippon Paper Industries Co., Ltd. tree cloning technology:

Nippon Paper Industries Co., Ltd. has succeeded in developing and bringing to practical use the following three methods for the mass cloning of elite trees. First is a mass-multiplication technology based on tissue cultures, second is a photo-autotrophic culture system (a method designed to promote rooting and growth of plants in vitro by using carbon dioxide instead of sugar to boost the photosynthetic action of plants), and third is a low-temperature storage technology.

[*18] MAT Vector® System

P.26

MAT stands for multi-auto-transformation. This cutting-edge technology for the transfer of genes was developed by Nippon Paper Industries Co., Ltd. Conventional techniques leave a marker gene in the recipient organism during a gene transfer. In contrast, in the MAT Vector® System once the desired gene has been transferred successfully, another gene is inserted that removes the marker gene, ensuring that no marker gene will be left behind in the recipient. This increases the safety of the technology. The system also enables genetic engineering to be performed repeatedly on the same plant. Moreover, compared with other gene transfer methods, the gene transfer efficiency rate of the MAT Vector® System is extremely high.

[*19] Rice with Health-Promoting Benefits

P.26

This is a type of rice that has been genetically engineered to contain substances that help to relieve or improve the symptoms of people with lifestyle-related diseases such as diabetes and obesity, or who have allergies to Japanese cedar trees and the like. It is expected that daily consumption of this rice will be effective in preventing these diseases, improving the condition of patients and relieving their symptoms.

[*20] Gene Modification

P.26

The blueprint that determines the unique features of a living organism is stored as hereditary information (DNA sequencing). Genetic engineering is performed by inserting a desirable gene into the DNA sequence of an organism, in the hope that the latter will gain a new characteristic as its hereditary information is "overwritten" by the gene transfer.

[*21] Bone Dry Tonne (BDT)

P.27

This is the weight, in absolute dry tons, under the condition in which all moisture has been completely removed. It is used in wood chip transactions worldwide.

[*22] Forest Certification

P.27

This is the certification granted by third-party organizations to sustainable forest management.

[*23] Refuse Paper and Plastic Fuel (RPF)

P.27

RPF is a solid fuel made by blending scrapped plastic and refuse paper that cannot be recycled to make pulp. Grinding, compression and dehydration processes are used to produce RPF. It serves as an alternative to fossil fuels.

[*24] Liner

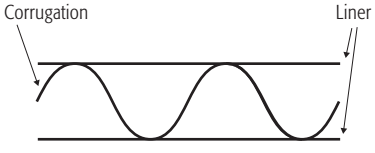
P.28

See "Corrugating Medium" below.

[*25] Corrugating Medium

P.28

If one examines a cross-section of a piece of corrugated board, the fluted layer on the inside is known as the corrugation, and the paperboard used to manufacture it is called corrugating medium. The corrugating medium is sandwiched between two layers of flat paper known as liners or linerboards.



Cross-section of a corrugated board