



Environmental Information

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ENVIRONMENT STATEMENT SELF ADHESIVE LABELS

It is the policy of Label Connections Limited not to harm the environment with its products or by its activities.

The company's policy is to purchase from companies operating to recognised Quality Management Systems with active environmental policies and to give preference to those who have achieved accreditation under an applicable international standard.

The company's products comply with existing legislation on packaging and heavy metals content.

In respect of purchased raw materials, all papers are manufactured using elemental or totally chlorine free pulps sourced from accredited, sustainable, managed forests.

Adhesives are water based and silicone polymers are solvent free. They are not considered to be harmful to the environment.

The inks used in any print process at Label Connections Limited are water based and non-harmful.

All packaging used is sourced from companies who actively promote recycling and the use of recycled materials during manufacture.

It is the company's objective to preserve its reputation as a manufacturer of high quality labelling materials. Quality of products and service and their environmental acceptability will therefore be highly prioritised within the company.

**Lesley Turner
Managing Director
Label Connections Limited
17-2-05**

Our raw materials

Our principal raw material is paper, produced from a mixture of hardwood and softwood pulps, obtained from trees from sustainable sources. The prime woods used are birch and pine and the pulp is mainly from Northern Europe or Scandinavian sources.

Environmental Credentials

All of our base material suppliers have implemented management policies such as ISO 9001 or ISO 14001 and ensure that the wood used in their production processes is from sustainable, well - managed forestry. Many of our base paper mill suppliers have FSC or PEFC certification. However, as there are many 'local' certification bodies throughout the world not all of the virgin pulp used necessarily carries these particular accreditations.

Pulp and Paper requirements for self adhesive laminates

A self adhesive sheet requires two layers of material, the face paper and the backing paper.

In order for the laminate to be suitable for a particular end use certain strength and stability requirements are necessary. To produce the optimum label grade it is not possible to use a high level of recycled pulp however, of our paper mill suppliers use paper mill 'broke' in their materials and some include a proportion of post consumer waste in some of their less demanding grades.

Recycled pulp contains very short paper fibres, may already be contaminated with varnishes or silicones (even after treatment) and produces a comparatively low strength paper with insufficient stability for many of the demanding print applications required from a self adhesive sheet of labels e.g. high speed laser. If recycled pulp is used in the release paper it may also lead to 'pin holes' that could cause problems when the silicone release coating is applied

When using a high proportion of 'post consumer' recycled pulp in self adhesive laminates the waste produced during conversion to labels, or when the end user prints and uses the product, is likely to be significantly higher than standard 'virgin' pulp products and will consequently lead to an increase in materials for waste disposal.

Fillers and pigments

Apart from fibre, mineral fillers and coating pigments are important raw materials for papermaking. Use of pigments and fillers improves the optical properties of paper and reduces the need for fibre as a raw material. They are mostly natural substances i.e. Kaolin, calcium carbonate and talc.





Water

Water is also used in the paper making process. It is used for diluting, transporting and cooling, circulating several times during the process. Part of the water becomes effluent which is treated to meet very exacting standards set by the authorities before it is released back into the environment. It is not untrue to say that the waste - water from a paper mill is often of a higher quality than the freshwater intake.

Chemicals

Common chemicals used in the paper making process are sodium hydroxide and sodium sulphite, which are recovered and reused; soaps for the de-inking of recovered paper and bleaches (chlorine free chemicals e.g. hydrogen peroxide or ozone).

Adhesives

All the adhesives used in our self adhesive laminates are water based, acrylic dispersions. The adhesive coating process generates a relatively small amount of effluent and this is generally treated on site.

All grades are approved for use as either indirect (on the packaging) or direct food contact to non fatty foods.

All grades are suitable for labelling toys and meet the appropriate specifications for heavy metal content.

Silicone

All our base self adhesive laminate suppliers use solventless silicone coating technology.



Laminate Waste, Recycling and Recovery

Packaging Waste

In order to harmonize national measures to reduce and/or prevent any adverse impact that packaging and packaging waste may have on the environment, the European Directive 94/62/EC for Packaging Waste was introduced.

Labels are classed as packaging and usually become an integral part of the packaged product.

One of the requirements of the packaging waste directive concerns the restriction of heavy metals, lead, cadmium, mercury and hexavalent chromium. Our laminate suppliers all show analytical results for heavy metal content of their laminates at levels well under the recommended minimums. Typical results are:

- Lead less than 1ppm
- Cadmium less than 1ppm
- Mercury less than 2ppm
- Hexavalent Chromium less than 0.1ppm

Siliconised Release Liner

Pure paper, siliconised release liner can be recycled once all the labels have been removed.

Paper laminate and label waste

It is not feasible to recycle laminate and label waste.

Label waste can be used as an alternative fuel for energy recovery as self adhesive materials have a high calorific value, 1kg being equivalent to about 0.35kg fuel oil and liberating about 17.5MegaJoules of energy. One of our suppliers actually uses this waste as an energy source within their own mill.

Following incineration, the minimal heavy metal content and the absence of free Chlorine results in a relatively inert ash and dioxin-free stack emissions that are both easily controlled.

The waste to energy route is therefore preferable for the disposal of these materials.

Labelled packages

Labelled packages can be recycled if the label content is low. In order to minimise subsequent problems with paper machines the level of adhesive needs to be typically less than 0.01% of the waste. The actual level does however depend on the cleaning technique and requirements of the end product.

Filmic/Synthetic labels

Generally filmic/synthetic labels on plastic packages can be recycled. As a general rule polyolefins (PE and PP) can be combined to a certain extent, PET can only be recycled on PET packages and PS on PS packages. PE and PP packages cannot be recycled if paper, PVC or PET labels are attached.

Together with our base suppliers Label Connections Ltd actively promotes recycling and recovery wherever possible. Landfill of waste is the last option.

Our product packaging contains a high degree of post consumer recycled fibre and is sufficiently robust to prevent waste due to damage during transport.



Forest Certification

what is it all about?

Forest certification grew out of concerns for the preservation of tropical forests and as a proactive alternative to timber boycotts.

The primary aim was to address the global problem of illegal logging and promote well managed, sustainable forestry in harmony with the local environment.

Numerous certification bodies were set up world wide, all with slightly different criteria but the same overall aim. 'Local' certification systems are still in operation, however 2 schemes have emerged as 'favourites' for globally recognised standards.

PEFC

Programme for the Endorsement of Forest Certification Schemes.

The first certification schemes didn't really address the needs of family owned forests in Europe and this led to the establishment of PEFC as a system to encompass all types of forests, from small family owned businesses to large multinational corporations.

PEFC now extends globally with over two thirds of certified forests on other continents e.g. North and South America and Australia.

The primary objective of the PEFC council is to achieve compatibility between credible and independent forest certification systems and to safeguard consistently high standards for sustainable forest management throughout the world.

To date PEFC has successfully achieved mutual endorsement of more than 20 forest certification systems world-wide. With major systems like the Canadian Standards Association (CSA) and the US-Canadian Sustainable Forestry Initiative (SFI) included, PEFC is fast becoming recognised as the standard for evidence of legal and sustainable sourcing of timber and paper products.

For more information visit the PEFC web site:
www.pefc.org

FSC

Forest Stewardship Council

In 1990 a group of timber users and representatives of environmental and human rights organisations met to discuss the need for an honest, credible system for identifying well

managed forests as acceptable sources of forest products.

The conclusion of the meeting was that a world-wide consensus of what is meant by good forest management was required, including independent audits and a global 'umbrella' organisation called 'Forest Stewardship Council' (FSC) to act as arbiter and standard setter.

FSC accredits independent third party organisations who can certify forest managers and forest product producers to FSC standards.

Over 90 million hectares of forest in more than 70 countries are now certified to FSC standards. With several thousand products produced using FSC certified wood and carrying the FSC trademark.

For more information visit the FSC website:
www.fsc.org

So what about our labels?

The paper mills supplying our base materials are either FSC or PEFC (or both) certified and use pulp that is similarly approved by one of the dominant certification bodies. However, as self adhesive contains two sheets of paper (face and backing) unless both papers are approved by the same regulatory body the finished laminate cannot be classed as approved.

This situation is frustrating and does not reflect the true environmental credentials of our products. We are therefore restricted to saying that:

"...all our base paper products are from sustainable forestry as defined by FSC, PEFC or similar environmental accreditation systems."



Environmental Glossary

(With particular relevance to paper making and self adhesive materials)

Activated sludge process.

A multiple biological effluent treatment method

Acrylic Adhesive.

A complex aqueous emulsion of acrylic and rubber based polymers which when dried onto a substrate (paper, films) forms a water resistant adhesive layer that is heat and cold stable (within limits). Acrylic adhesives are considered to be more environmentally friendly due to there being no requirement for organic solvent carriers.

Aqueous

Water based.

AOX, Adsorbable Organic Halogen compounds.

AOX represents the total amount of chlorine bound to organic compounds in waste water. Such compounds occur naturally, but are also formed in conjunction with the bleaching of chemical pulp. AOX should be limited to a level where it has minimal environmental impact.

BAT, Best Available Techniques.

The use of technically and economically feasible environmental procedures and technologies that incorporate the most efficient and advanced methods.

BOD, Biological Oxygen Demand COD, Chemical oxygen Demand

The effluent, or wastewater, from pulp and paper mills includes organic substances which consume oxygen during biodegradation. Low oxygen content in fresh or sea water can have an adverse effect on plant and animal life. BOD refers to the amount of oxygen consumed in the biological decomposition of organic compounds. COD refers to the amount of oxygen consumed in the complete chemical oxidation of organic compounds.

CO₂, Carbon Dioxide

In papermaking CO₂ is generated from the combustion of biofuels and fossil fuels such as oil, coal and natural gas. CO₂ is considered to be the most significant gas contributing to climate change.

CHP, Combined Heat and Power technology.

Co-generation of both electrical power and usable heat i.e. steam, resulting in much higher degree of efficiency than conventional way of power generation only.

Chain of Custody

Through the Chain of Custody (CoC) process a forest product is tracked from a tree in a certified, sustainably managed, forest through all the steps in the processing and production until it reaches the consumer, whether it is as sawn wood or as paper.

Chemical Pulp

Wood pulp that has been broken down to fibres by a chemical process.

De-inking

Removal of printing ink, using a chemical process, during recovered paper recycling.

ECF, Elemental Chlorine Free

Process for the bleaching of chemical pulp. ECF pulp is bleached using chlorine dioxide. Compared to elemental chlorine bleaching, ECF bleaching reduces the formation of chlorinated organic compounds. Enhanced ECF bleaching decreases the chlorine dioxide by using ozone or oxygen delignification in the first stage of the bleaching process. This further reduces the environmental impacts of the process.

EMAS

Eco-Management and Audit Scheme. A voluntary regulation of the European Union for Environmental Management system, that is site based and third party certified.

Flue Gases

The released gases from a combustion facility which are discharged to the atmosphere through an exhaust or chimney. The flue gases can include nitrogen oxides, carbon oxides, water vapour, sulphur oxides, particles and chemical pollutants. Desulfurization scrubber, electrostatic precipitators, mechanical collectors (cyclones), fabric filters (baghouses) and wet scrubbers are examples of flue gas cleaning systems.

Forest Certification

A procedure to assess the quality of forest management in relation to the criteria of a forest management standard.
e.g. PEFC (Programme for the Endorsement of Forest Certification Schemes).
FSC (Forest Stewardship Council)
SFI (Sustainable Forest Initiative in North America) and
CSA (Canadian Standards Association).



GHG, Greenhouse Gas

A gas that contributes to increasing the insulating properties of the earth's atmosphere (greenhouse effect). Carbon dioxide, methane and oxides of nitrogen are the three main greenhouse gasses.

ISO

International Organisation for Standardisation (ISO). This is a voluntary, international and third party certified system.

ISO 9001

Quality management system standard published by ISO.

ISO 14001

Environmental management system standard published by ISO.

Mechanical pulp

Wood pulp produced by grinding or refining.

N, Nitrogen - P, Phosphorous

N and P are chemical elements essential for plant and animal life. Both substances occur naturally in wood and are often added as a nutrient in biological treatment plants. Excessive levels released into watercourses can cause nutrient enrichment i.e. eutrophication, which accelerates the growth of algae and other vegetation.

NO_x, Nitrogen Oxides

These gases are produced during combustion. In moist air, nitrogen oxides can form nitric acid which, in turn, is precipitated as 'acid rain'. This nitrogen containing rain also has a fertilising effect (eutrophication) which may lead to undesirable side effects such as algal blooms etc.

Post Consumer Waste

Mainly white paper collected from households e.g. newspapers, magazines, catalogues and copy paper.

Recycled pulp

Fibres and fillers retrieved from recovered (waste) paper. If the recovered paper is de-inked, the processed pulp is also called de-inked pulp. The quality of the fibres deteriorates with recycling so paper cannot be endlessly recycled. Self adhesive labels require high quality fibres therefore only a small amount of recycled fibre can be used in the base pulp.

Silicone

A unique polymer system providing a very effective release base for self adhesive laminates. The 'cured' silicone coating is inert.

SO₂, Sulphur Dioxide

This gas is generated by burning sulphur containing fuels. On contact with moist air SO₂ forms sulphurous acid, which contributes to 'acid rain' and acidification.

Solvent

A liquid that is used to dissolve a solid. Strictly this includes water (see aqueous) but is more conventionally used to describe those organic liquids such as alcohols, acetone, benzene etc that may be used as adhesive carriers.

Sustainable forest management

In short a sustainably managed forest means that it is not harvested more than it grows.

... "Sustainably managed forests maintain their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national and global levels without damaging other ecosystems."

TCF, Totally chlorine free

Process for the bleaching of chemical pulp. TCF pulp is bleached with chlorine free chemicals i.e. hydrogen peroxide or ozone.

TRS, Total reduced sulphur

Reduced sulphur compounds which usually cause odour problems. Released e.g. during chemical pulp production.

Virgin Fibre

Pulp fibre that is being used for the first time in papermaking.

Woodfree

A pulp or paper that contains no 'mechanical' wood pulp. It is important to remember that 'woodfree' does not mean that the paper or pulp is made from materials other than wood.

VOC, Volatile Organic Compound

In manufacturing VOC is mainly generated when using solvent based additives. VOC emissions are involved in ozone formation in the lower layers of the atmosphere.

This is by no means an exhaustive glossary of environmental terms and is included only as an aide to understanding some of the more common terminology. There are numerous sources of information on this subject if further study or clarification is required.





Why Label Connections support the Woodland Trust

Only 2% of the forest land in the UK is considered as semi-natural.

In the UK only 12% of land is wooded compared to 46% in the rest of Europe.

This makes us a nation with the lowest woodland density in Europe. However, all is not lost as over the past century woodland creation programmes have added 1.7million hectares of forest and the Woodland Trust is working hard to preserve and create more woods than ever before.

There have also been improvements in the planning system, which to a degree, safeguards areas of natural importance. But these are relatively recent safeguards and many areas of natural forest were lost prior to their implementation.

Label Connections, which specialises in producing self adhesive labels, sources all of its paper from sustainable, well managed forests. and by supporting the Woodland Trust is helping to sustain woodland creation in the UK. To show our support we have purchased 250 trees which will be dedicated to the charity's Priory Wood in Burwell, Cambridgeshire.

...”people still think that we cut down rain forests to make paper, but this couldn't be farther from the truth. In fact the paper industry is planting trees on areas that were cleared by ‘illegal logging’(for cattle grazing for example) in an attempt to re-stabilise the ground and provide the local population with ‘sustainable’ resources to boost their economy. “ said Label Connections MD Lesley Turner

Label Connections, as a self adhesive label converter, uses paper products derived from pulp produced from trees harvested mainly in northern Europe and Scandinavia.

Although all the pulp produced by our suppliers is from sustainable, well - managed forests (FSC, PEFC or similar), the trees are essentially grown as a commercial crop. *...”if our forebears hadn't planted more trees than they cut down we wouldn't have the raw materials to make paper today.”* Turner added.

An extract from the Woodland Trust Memorandum and Articles of Association

“The objects for which the Woodland Trust is established are to conserve restore and re-establish trees and in particular broad leaved trees, plants and all forms of wildlife in the United Kingdom...and thereby to secure and enhance the enjoyment by the public of the natural environment...”

By supporting the Trust we can all contribute to the regeneration of our native woodlands and your purchases of our labels (PCL, PCL3 Digital, Digital Office) will help bring more 'local woods' back to your home area.

Thank you



For more information about the Trust and where the first 250 trees have been planted go to: www.wt-woods.co.uk/priorywood

