

About Nordic Ecolabelled

Recycled Toner Cartridges

Version 5.0

Background to ecolabelling

Date: 12 July 2011



Nordic Ecolabelling

Nordic Ecolabelled recycled toner cartridges - Background to ecolabelling

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1 Summary

The criteria document for the Nordic Ecolabelling of recycled toner cartridges was first adopted on 13 May 1992.

The document has been revised during 2011 and version 5 will be presented to the Nordic Ecolabelling Board (NMN) in December 2011.

This document describes the background to the requirements regarding quality, health and the environment that are stipulated by the criteria document.

During the validity of version 4 of the criteria for toner cartridges, a number of issues have been raised within the industry and by users, new standards have been development, product development has continued, complaints have been submitted to Nordic Ecolabelling, chemicals legislation in Europe has evolved and globalization has led to more global players in the Nordic and European markets. Accordingly, Nordic Ecolabelling needs to adjust the requirements and limit values of version 5 of the criteria document.

Nordic Ecolabelling has in this revision focused on emissions, new high-capacity toner cartridges, take-back systems for private consumers, the misuse of the Swan logo on Internet sales, testing standards and testing laboratories. This will mean that private consumers and professional buyers/users of Nordic Ecolabelled toner cartridges can now choose with confidence, when they buy an Nordic Ecolabelled toner cartridge.

The requirements have been developed in close consultation with manufacturers, raw material suppliers, representatives from public authorities and NGOs. Other international eco-labelling schemes have also participated in criteria development to ensure harmonization between the different systems.

The review of the criteria for toner cartridges, version 5, will be open for comments for 60 days from July to September 2011.

Changes made since the last version are described in this document.

Responses from stakeholders are an input to changes to the proposed criteria. Following the consultation period, the responses will be compiled and comment on by Nordic Ecolabelling. The compiled responses and comments will be available after the criteria are adopted, and can be obtained on request from one of the secretariats.

2 Basic facts about the criteria

Products eligible for labelling

Toner cartridges that may carry the Nordic Ecolabel are remanufactured and refilled cartridges comprising toner powder, drum and necessary operational mechanism. The cartridges are used for monochrome and colour electrophotographic printing and similar reproduction processes. For the Nordic Ecolabelling of new OEM cartridges, please refer to the criteria for imaging equipment.

The majority of laser printers, copying machines and MFP use toner cartridges. Cartridges contain toner powder and a drum. When a cartridge is empty, it is either disposed of or collected as part of various take-back systems.

Nordic Ecolabelled toner cartridges are remanufactured, refilled cartridges, drum units or powder containers. They are used for black and white and colour printing in printers and copying machines.

Nordic Ecolabelled toner cartridges mean:

- Less waste and a lower consumption of energy and raw materials. Using toner cartridges several times reduces the total consumption of toner cartridges and accordingly the environmental impact of the product throughout its service life.
- The criteria aim to reduce waste and stringent requirements are set regarding product quality and capacity. The quality and capacity of the product must be equal or better that of the original toner cartridge.
- Requirements are also stipulated of the recycling process, the content of substances hazardous to the environment and health and labelling with consumer information.

In the case of recycled toner cartridges, the production of the original toner cartridge lies outside the control of the licensee. Accordingly we do not impose any requirements on the original toner cartridge.

Remanufacturing and refilling toner cartridges, Optical Photosensitive Conductor (OPC) units and toner-powder containers reduces levels of waste, at the same time as lowering energy use and the consumption of raw materials.

Recycling means that used, original toner cartridges, or previously remanufactured and refilled cartridges are collected, dismantled, cleaned, checked/repared, refilled with toner powder and then reassembled. The drum is changed frequently to ensure the quality of printouts and, in some cases, to extend the service life of the toner cartridge.

Justification for Nordic Ecolabelling

Toner cartridges in laser printers are replaced when the toner powder in the cartridge is used up or when the print quality is poor. The volume of used toner cartridges produced in the Nordic region is considerable and produces correspondingly significant quantities of waste if the cartridges are not recycled. There are many companies, in Europe and worldwide, that recycled toner cartridges.

The aim of the criteria is to reduce quantities of waste and ensure the recycled toner cartridges maintain the quality demanded by the user. Product quality must also be

sufficiently high that the cartridges do not risk damaging the machines in which they are installed.

Besides waste reduction and resource savings, the criteria stipulate that the toner powder and materials shall not be harmful to human health or the environment.

Several studies show that recycled toner cartridges are better for the environment than new cartridges. For example:

- LCA performed at the University of Kalmar¹.
- “Carbon Footprint and Ecodesign of Toner printer cartridges” by Xanfeon, December 2008².

Over 1.1 billion toner cartridges and ink jet cartridges are sold annually. More than 500 million of these cartridges are never recycled. A toner cartridge can be remanufactured 2-3 times without difficulty. Doing so with all toner cartridges would reduce numbers by 66-75%. Each toner cartridge that is recycled reduces the number that go straight to landfill. This conserves natural resources.

The reuse of the plastics and metals used in a toner cartridge is the most environmentally sound way to handle what is in principle a waste product - the empty toner cartridge. For example, aluminium that is reused in a remanufactured product requires 95% less energy than virgin aluminium. Recycling is a viable way to tackle the growing problems that provides both job opportunities and substantial environmental benefits.

The EU Commission in its EMAS environmental statement voices a preference for reused toner cartridges. The European Union has also recently established new guidelines for its general waste management policy. The prevention of waste is now the highest priority, followed by recycling and reuse. The recycling of toner cartridges thus follows the EU's priorities.

Criteria version and validity

The first version of the criteria document for toner cartridges was adopted on 13 May 1992. The document has been revised three times. The current version, version 4, was adopted on 23 June 2006. Follow several extensions to its validity (currently version 4.3) the criteria are valid until 30 June 2013. It is proposed that version 5 of the criteria is valid for four years until December 2016.

A survey was conducted in 2010. A short questionnaire was sent to licensees, resellers, trade organisations and original equipment manufacturers (OEM) of imaging equipment. The survey regarded the possibility of ecolabelling OEM toner cartridges. It was however concluded that this should not be done within this product group but under the product group of imaging equipment. The possibility of ecolabelling inkjet cartridges was also investigated but was not considered appropriate for this revision.

The survey showed unfortunately that the product group has suffered from the misuse of the Swan logo. The reason behind this misuse has often been poor information

¹ Jonas Berglind & Henric Eriksson, Life Cycle Assessment of Toner Cartridge HP C4127X

² Xanfeon, Carbon Footprint and Ecodesign of Toner printer cartridges

between the licensee and resellers regarding the use of the Swan logo.

In recent years, the distance and frequency of shipments of toner cartridges has increased. Transport has therefore been a focus area for this revision.

Based on the survey, it was concluded that the criteria are still relevant but that they require revision to match current demands in the sector.

Market for recycled toner cartridges

ETIRA³, the European Toner & Inkjet Remanufacturers Association, provides a picture of the market for recycled toner cartridges. There are more than 10,000 remanufacturers of toner cartridges world wide employing more than 65,000 people. 20-30% of all toner cartridges sold globally are recycled to some degree.

Manufacturers outside of Europe have shown increased interest in the Nordic Ecolabel in the last year. This is one indication that the industry has become more global.

European market

There are over 1,400 remanufacturers in Europe. 60% of remanufacturers process both inkjet and laser cartridges; the remainder specialise in either one or the other. The remanufacturing market is worth approximately 1,2 billion euro to Europe's economy. Across Europe, there are an increasing number of broking companies which provide the third party supply link between the OEMs, cartridge producers and the remanufacturers.

Of the 44 million toner cartridges sold in Europe each year, almost 12 million are remanufactured. This represents a market share of approximately 27%.

ETIRA describes the following in its annual report 2010⁴:

The credit crunch proved to be a blessing in disguise: many ETIRA members experienced growth since mid-2008. Faced with the need to reduce their fixed costs (such as printing), businesses all over Europe expressed a growing interest in remanufactured. As a result, unit sales were up, and margins initially improved. Market intelligence firm Lyra calculated that worldwide, in 2008, 23% of all toner cartridges and containers, and 29% of all inkjets shipped were aftermarket cartridges (i.e. remanufactured and compatibles).

But in 2010 our major competition were not the OEM cartridges, but rather the low-priced “newbuilts” imported from SE Asia, which often infringe OEM patents and are sold at unbeatable prices. Some of these newbuilts were even labelled as “remanufactured”, thus benefiting from our industry reputation but without providing the reduction in greenhouse gas emissions. In 2010, ETIRA has taken strong action against these practices.

³ www.etira.org

⁴ http://www.etira.org/?website_id=77

The “race to the bottom”-pricing makes remanufacturing unsustainable. It is hard to compete if you must offer your remanufactured toner cartridge at cost-price level of i.e. 22 euro, while the empty costs 15 euro, but a newbuilt from SE Asia can be purchased on the web below 10 euro!

Traditionally, our industry has 2 major sales arguments: our products are less expensive, and better for the environment. The “green”-argument is becoming increasingly important: end-users want to combine less cost with a reduced CO₂ footprint.

Nordic Ecolabel licences

The following table provides a summary of Nordic Ecolabel licences. Three licensees have remanufacturing based in the Nordic region. The remainder are based in Europe and North Africa. Several licensees are resellers of toner cartridges manufactured by other European actors. There are also licensees that do not sell on the Nordic market but only to the rest of Europe.

Producer	Licence no.	Registered in				
		Sweden	Norway	Denmark	Finland	Iceland
Tepro Print Products AB	308007	X		X		
Scandi-Toner AB	308010	X				
Turbon International GmbH	308015	X	X	X	X	
Turbon International GmbH	308016	X	X	X	X	
K&U Printware GmbH	308028	X			X	
Supplies Team Sverige AB	308033	X				
Pelikan Nordic AB	308034	X	X	X	X	
Greenman Toners	308038	X				
Sapi s.r.l.	308040	X				
Armor SA	308041	X	X	X	X	
Vidamic Prinova AB	308042	X	X		X	
XPS b.v.	408037	X			X	
CLOVER LDA	508022	X		X	X	
Farbax Kft	508039			X		
Greenprint Aps	508035			X		
POLYPORE	408043				X	
Officeday Finland Oy	308041				X	
Total number of licences (registrations)		11 (3)	(5)	3(5)	2(8)	

Other labels

Other independent ecolabels for toner cartridges exist in for example Germany⁵, Austria⁶ and France⁷. UNEP⁸, the United Nations Environmental Programme, has produced its own criteria for toner cartridges.

⁵ <http://www.blauer-engel.de/en/index.php>

⁶ <http://www.umweltzeichen.at/cms/home233/content.html>

⁷ <http://www.marque-nf.com/?lang=English>

⁸ <http://ebookbrowse.com/unep-toner-cartridges-basic-criteria-revised-apr-2010-pdf-d37869988>

3 About the revision

Purpose of the revision

Based on the survey performed in 2010, several goals were established for this revision. The two main areas of focus are the misuse of the Swan logo in marketing recycled toner cartridges and transport - how this influences the overall environmental impact of the product and how requirements can be set.

Other objectives for the revision were:

- Update Nordic Ecolabelling's RPS analysis of the product group.
- Take-back systems.
- Investigate high-capacity toner cartridges.
- Review the relevance of the health and safety requirements.
- Harmonization with other ecolabelling systems.
- Emissions during printing.
- Investigate the difference between chemically and mechanically processed toner powder.
- Update information regarding the industry.
- Harmonization of the toner powder requirements with the Nordic Ecolabel criteria of printing companies
- Review the current legal requirements.

About this revision

This revision was initiated in January 2011 under the project leadership of Karen Dahl Jensen, Denmark. A reorganisation in Denmark 2011 resulted in the project being transferred to the Swedish secretariat under leadership of Ove Jansson.

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During the spring, in-depth studies were performed in the identified focus areas. Contact was established with several industry actors including the European trade association. The revision has been performed in dialogue with these actors and the draft criteria are sent for comment in accordance with Nordic Ecolabel regulations. To reinforce support for these criteria several companies, above all licensees, will be visited. The draft criteria will be sent for comment from July until September 2011. Adoption of the criteria is planned in December 2011.

4 Justification of the requirements

This section starts with a description of two key areas for this revision: the misuse of the Swan label and transport. The remaining text describes and justifies each individual requirement.

4.1.1 Misuse of the Swan logo

Complaints submitted to Nordic Ecolabelling indicate that the Nordic Ecolabel logo is misused for Internet sales of toner cartridges. The primary problem is the lack of valid license numbers and that it could be construed that all the toner cartridges offered by a site are ecolabelled.

This is such a serious issue that it forces us to revise the criteria to prevent future complaints on misuse.

Requirement R27 is now reworded to tackle this misuse. In previous criteria, the licensee was simply required to inform resellers about Nordic Ecolabelling's regulations regarding the use of the Nordic Ecolabel. The draft criteria propose that the licensee confirms in writing that resellers have been informed of Nordic Ecolabelling regulations concerning use of the Nordic Ecolabel. Written confirmation from resellers shall be filed by the licensee and be available for inspection on site visits or on demand.

If this tightening of requirements is non-effective and Nordic Ecolabelling continues to receive complaints regarding misuse, we may need to establish different types of licences for manufacturers and resellers.

4.1.2 Transport and distribution

Nordic Ecolabelling has received comments regarding the transport and distribution of toner cartridges. One query that has been raised is to what extent transport and distribution influence the total environmental impact of a toner cartridge. The increased number of international manufacturers that have obtained a Nordic Ecolabel license may be one reason behind this. Such toner cartridges may be transported further and by different modes of transport compared to those remanufactured in the Nordic region. Since toner cartridges that carry the Nordic Ecolabel must be collected and then shipped, there are double the number of journeys involved compared to other Nordic Ecolabelled products. Accordingly, there is increased focus on transport for this product group.

Nordic Ecolabelling conducted an investigation into freight transport in 2011. The investigation establishes basic facts about the environmental concerns of goods transports and highlights the difficulties in developing criteria and specific requirements for this category. Subsequently requirements for transport should not be developed within this revision of the criteria for toner cartridges. The main reason is that it is not possible during licensing to control exactly how the toner cartridges are transported.

The project team invites views on how transport requirements could be developed in future revisions.

4.2 Description of requirements

4.2.1 General description

R1 Description of the product

The purpose of this requirement is to obtain a clear description of the product as well as all trade names and trademarks. Licensing usually involves many different names and trademarks. This requirement shall simplify and clarify licensing. Further it enables the licensed products to be listed on Nordic Ecolabelling's Web sites.

R2 Definition of high-capacity toner cartridges

Previous criteria have lacked a definition of high-capacity (HC) toner cartridges. Licensees are sometimes able to increase the capacity of existing toner cartridges so they can hold more toner powder and thus can print more pages than the original OEM toner cartridges. These toner cartridges are sometimes called high capacity. Nordic Ecolabelling uses this term in the criteria. We wish to steer in that direction and establish a common industry term for this type of toner cartridge.

It is also important that the Nordic Ecolabelling establishes a definition as to when extended toner cartridges qualify as high-capacity toner cartridges. In this revision we propose that high-capacity cartridges must deliver at least 25% more print than the original OEM toner cartridge. This type of toner cartridge will of course also meet the requirements on performance: production quality (R14), print quality (R16) and emissions (R18). The test method to be used to measure the capacity requirement is described under R17 Print capacity.

The requirement on recycled material is adjusted for this type of cartridge as detailed by R11.

This draft aims to seek views as to whether this level is correct.

4.2.2 Environmental and health requirements

This section primarily stipulates requirements regarding toner powder. It also includes a new requirement regarding work safety and the handling of toner powder.

Requirements R3-R6 on toner powder are taken from the criteria for the Nordic Ecolabelling of printing companies⁹ which are being revised during 2011. This means that the same requirements are stipulated for the same type of products, which increases Nordic Ecolabelling's credibility.

Toner powder primarily comprises binding agent (approx. 90%) that melts when heated to roughly 200°C. Common binding agents include polymers such as styrene and polypropylene. Toner powder also includes pigments. Carbon black is most often used for monochrome printing. Carbon black is powder made from oil or iron oxide.

⁹ Nordic Ecolabelling, 2011

Colour printing uses different coloured toners (yellow, cyan and magenta) commonly based on organic pigments. Silicone compounds are used as desiccants. Other additives include filling agents that improve the characteristics of the toner powder.

R3 Classified toner powder

The requirements on the classification of toner powder are tightened compared to previous versions. Further, the new requirements prohibit a wide range of the most problematic substances that toner powder can include based on the most recent REACH legislation.

The requirements for toner powder are collated in Appendix 1. This is since that the cartridge remanufacturer seldom documents this requirement but rather the manufacturer or supply of toner powder.

Classification

Nordic Ecolabel requirements on classification are based on regulatory requirements regarding the classification of chemicals. They aim to eliminate the use of the most hazardous chemicals in toner cartridges. Classification regulates the quantity of each classified substance that is permitted in a toner powder before classification of the actual toner powder.

Nordic Ecolabelling is aware that small quantities of some of these substances are used without the toner powder itself being classified. In future criteria, Nordic Ecolabelling will evaluate the classification requirements which may mean that they are changed to apply to substances. See also the requirement on substances of very high concern, including changes to 5th generation criteria under the REACH directive.

The regulations in the “old” directives, 67/548/EEC (dangerous substances) and 99/45/EEC (preparations) and subsequent amendments and adjustments and/or the new CLP regulations 1272/2008/EC. Both the old and the new regulations are accommodated for by the requirement since the new regulations for substances come into force during a transition period from 2010 to 2015. For mixtures, the new rules come into force in 2015.

Nordic Ecolabelling, backed by its policy on environmental hazard, wishes to prohibit the most hazardous classified substances based on their risk phrases¹⁰. This policy on chemical substances is in line with the requirements on chemicals specified by article 6 § 6 of the regulations governing the EU Eco-labelling scheme¹¹. To ensure compliance with the abovementioned regulations 5th generation criteria include the following classifications:

Table 1: New prohibited risk phrases and hazard statements in 5th generation criteria.

Prohibited R-phrases	R-phrase	CLP classification
R64 along with other risk phrases	May cause harm to breastfed babies	H362

¹⁰ Nordic Ecolabelling (2007)

¹¹ European Parliament and Council, 2010

R33 along with other risk phrases	Danger of cumulative effects	H373
R29 along with other risk phrases	Contact with water liberates toxic gas	EUH 029
R31 along with other risk phrases	Contact with acids liberates toxic gas	EUH 031
R32 along with other risk phrases	Contact with acids liberates very toxic gas	EUH 032

R65 “Harmful: May cause lung damage if swallowed” (H304, “May be fatal if swallowed and enters airways”) and the combination of phrases R39-41 (CLP EUH 070) “Toxic by eye contact” were added as a consequence of the environmental hazard policy for chemical substances.

In addition to the risk and hazard phrases prohibited by the environmental hazard policy for chemical substances, substances classified as allergenic (sensitising) with classification R42 or R43 (CLP H334 or H317) are prohibited with certain exemptions.

R4 Substances of very high concern

In addition to the requirement on classified toner powder, there are a number of substances that are prohibited from use. As of this version of the criteria, the requirement applies to chemicals that are actively added to the toner powder. Impurities from the manufacture of the toner powder are exempt from the requirement.

The requirement on substances of very high concern applies for the specified substances and groups of substances. All substances and groups of substances are listed in an appendix.

R5 Heavy metals

Heavy metals, which may be present in toner powder, are most often harmful and should be avoided as far as possible. Accordingly, a limit value of max. 100 ppm is stipulated for lead, cadmium, mercury and hexavalent chrome. This is the same as in previous generations of the criteria. Nordic Ecolabelling believes that these heavy metals have been phased out and that the requirement should therefore be considered as a barrier to the reintroduction of heavy metals.

R6 Aromatic amine residues

The requirement regarding a maximum limit value for aromatic amines in toner powder was introduced in the previous criteria version. The requirement is partly based on a Norwegian study that shows a relationship between aromatic amines in ink and an increased risk of cancer among print workers¹². Aromatic amines can be emitted by some less stable azo compounds. Azo compounds are used in azo dyes, which include colorants and pigments. Aromatic amines can also come from the production of dyestuffs.

¹² Bye, 2005

R7 Working environment

The German ecolabelling organisation, the Blue Angel, highlights the risk with inhaling toner powder particles in its criteria for office machines¹³. Our study has not shown any risks with particles from toner powder. We believe however that there are risks involved when large quantities of free toner powder are handled, such as when refilling toner cartridges. To minimise the risk of inhaling toner powder, we therefore stipulate that extraction fans must be provided for handling free toner powder or that the powder is handled in a closed process.

This shall be documented with a description of production and checked at on-site visits.

R8 Plastics

The requirement that limits the use of chlorinated plastics has its foundation in Nordic Ecolabelling's aim of minimising waste problems in society. There are today alternatives to chlorinated plastics. The requirement has not been changed since the previous revision.

There are many adverse substances in chlorine-based plastics that can impact health and the environment during waste management. Halogens such as chlorine are particularly problematic. Chlorine requires comprehensive purification processes when burnt and produces large quantities of landfill waste. In Denmark, chlorinated plastics are therefore considered undesirable in refuse incineration¹⁴.

R9 PVC packaging

The requirement that limits the use of PVC has its foundation in Nordic Ecolabelling's aim of minimising waste problems in society. There are today alternatives to PVCs that can be used to package toner cartridges.

There are many adverse substances in PVC plastics that can impact health and the environment during waste management. Halogens such as chlorine are particularly problematic. Chlorine requires comprehensive purification processes when burnt and produces large quantities of landfill waste. Many additives in PVC are associated with environmental and health problems. Examples include compound based on the metals lead (Pb), cadmium (Cd), tin (Sn), mercury (Hg) and phthalates. The production of PVC is also problematic since it produces environmentally hazardous emissions during production itself and the incineration of PVC waste. In Denmark, PVC is therefore considered undesirable in refuse incineration¹⁵.

The requirement is unchanged in this revision.

¹³ <http://www.blauer-engel.de/en/index.php>

¹⁴ Danish Ministry of the Environment, 1999.

¹⁵ *ibid.*

4.2.3 Recycling

R10 Reuse

The most significant environmental problem regarding toner cartridges is resource consumption during the production of new toner cartridges. The primary aim of the criteria is to reduce resource consumption through the reuse of materials, in particular plastics. Accordingly, Nordic Ecolabelling considers the requirement that toner cartridges comprise at least 75% reused materials the most important. This level has been used in previous criteria and has proven to be a suitable level.

There is no point in increasing this figure since the maximum possible proportion of reused parts in a toner cartridge depends on the design of the OEM cartridge, something we are unable to influence through these criteria. It is in principle possible to set different levels for the different cartridge types presently on the market, but this would make the criteria unnecessarily complicated without achieving any significant environmental gains.

In addition, it is important that the licensee has a well-established system for the collection of used cartridges so that these can be reused. Further, licensees must have a waste sorting system so that relevant fractions (e.g. plastics and metals) can be collected and recycled (excluding energy recovery).

The requirement is unchanged in this revision.

R11 Limit value for recycled material in high-capacity toner cartridges

See 4.2.1, R2 for a definition of high-capacity toner cartridges.

The draft criteria propose that the limit for recycled material is lowered to 65%. The environmental benefit of increased capacity outweighs the total environmental burden of reducing the proportion of recycled materials. Some toner cartridges can be modified to provide 200% of the original capacity without affecting print quality. One advantage is the reduction in the number of toner cartridges that require transporting. The limit value of 65% has been established in consultation with licensees. It is however important that other stakeholders comment on whether or not 65% is a suitable value.

R12 Take-back system

The collection of used toner cartridges is fundamental to the reuse of toner cartridges. We have therefore reworded the requirement so that it is clearer.

One change that has also been made with this revision is that the requirement makes it easier for private individuals to recycle toner cartridges. The pressure on pricing in recent years has meant that fewer toner cartridges come with free-post return, both among licensees and other actors. This has made it difficult for consumers to return toner cartridges to the manufacturer at a reasonable cost and a reasonable level of effort. We aim to redress this with this requirement. Even with this requirement, it is important to gain the view of so many actors as possible.

R13 Waste

Waste minimisation and material recycling are fundamentals to these requirements. It is therefore important that licensees work actively to minimise production waste and where possible recycle as much waste as possible.

The requirement is unchanged in this revision.

4.2.4 Performance

R14 Production quality

High production quality is essential. Poor quality risks eroding the credibility of Nordic Ecolabelling and consumer's faith in recycled toner cartridges. This requirement is measured by the number of claims received annually for each type of toner cartridge. The limit value is set at 1%. Data from previous licences shows that this level is reasonable. Only claims associated with Nordic Ecolabel requirements shall be included in the statistics, such as print quality. For example, damage during shipping is not included.

R15 Analysis laboratory

This new requirement ensures that the analysis laboratory is independent or inspected by an independent body. Previous revisions included the formulation but not as a requirement. Its inclusion as a requirement ensures that the requirement is documented and checked.

Nordic Ecolabelling refers to international standards (EN ISO 17025, ISO 9001 and ISO 9002) to ensure that the analysis laboratory is of sufficient quality to perform the tests stipulated by R16, R17 and R18.

R16 Print quality

The requirement has been clarified and has been lifted from an appendix. Good print quality is of central importance to the user. Nordic Ecolabelling requires that print quality shall equal or better that of the equivalent OEM toner cartridge.

All toner cartridges must be tested to and comply with points 5.2 and 5.3 of DIN Technical Report No. 155¹⁶. This is the latest acknowledge industry test standard. The development of new standards continues and Nordic Ecolabelling monitors this work for future revisions. The requirement also leaves an opening for alternative test methods that may be approved following review by Nordic Ecolabelling.

R17 Emissions

The German eco-labelling organization "Blue Angel" continues to development standards relating to emissions from laser printers. Researchers are investigating the risks of emissions from toner powder¹⁷. Research now shows that ultrafine particles (UFP) do not originate from the toner powder, but can come from such things as the lubricating oils used in the printer. The research is not finished but Nordic Ecolabelling follows developments in the field. Nordic Ecolabel and Blue Angel criteria for imaging machines have long included requirements on emissions. The Blue Angel has also introduced them in their criteria for toner cartridges.

¹⁶ DIN Technical Report No. 155 – Information Technology: Office and data technology – Requirements for refilled modules with toner (monochrome/colour), September 2007

¹⁷ <http://www.blauer-engel.de/en/index.php>

To minimize the risks of emissions from toner powder, we now suggest introducing a requirement for emissions into the Nordic Ecolabel criteria for toner cartridges. We have harmonized the test methods and performance levels with the Blue Angel criteria. We require however that few types of toner cartridges are tested. We suggest that 10 per cent of the toner cartridges for which the application is sought, or a minimum of three types, shall be tested. The best selling cartridges shall be selected to ensure that a large volume of toner cartridges on the market are tested. This shall also apply to extensions of existing licenses.

Testing of emissions is a costly task for manufacturers. When we weigh the risk against the cost of testing, we consider that it is reasonable to test only a proportion of cartridge types in an application. Information from manufacturers also shows that different batches of toner powder can give different emission values. This requirement only gives a snapshot of the emissions from toner cartridges at the time of application. We also consider that the minimal risk justifies that emission tests are only performed at the time of application.

One alternative could be to carry out emission tests on only the toner powder. This would mean simpler and cheaper tests to ensure measurement and the ability to set limits for substances that spread from the incineration of toner powder. We wish to receive more views on this alternative during the review.

R18 Print capacity

Print capacity is one of the most important requirements in the criteria. Print capacity equal or better to the equivalent OEM toner cartridge is something all users expect. The number of pages shall equal or better the equivalent OEM toner cartridge as tested in accordance with the specified test methods. All types of toner cartridge shall be tested on application. So-called high-capacity toner cartridges (see R2) shall be tested and compared to the equivalent OEM cartridges.

The requirement has been clarified and has been lifted from an appendix.

The requirement is updated with new test standards. Test method ISO/IEC 19752:2004 shall be used for monochrome cartridges and ISO/IEC 19798:2007 for colour cartridges. These test standards are currently used by manufactures and should therefore not cause any difficulties.

4.2.5 Quality and regulatory requirements

The following five requirements (R19-R23) are included in all Nordic Ecolabel requirements. These place requirements on administration to ensure that the licensee follows Nordic Ecolabel requirements for the entire licence period.

- R19 Licence administrators**
- R20 Documentation**
- R21 Planned changes**
- R22 Unplanned nonconformities**
- R23 Traceability**

R24 Legislation

In this revision, we have extended the requirement that ensures compliance with current legislation to include patent law. Views have been raised within the industry

as to the respect of patents. We aim through this requirement to emphasise that even this issue is important to Nordic Ecolabelling.

R25 Take-back system – national regulations

This requirement ensures that the licensee or its resellers assume their responsibility regarding the collection of packaging. Different rules apply in the different Nordic countries. The licensee shall fulfil the requirements applicable on the Nordic market on which the product is sold. If the licensee does not sell products on the Nordic market, this requirement does not apply.

4.2.6 Information

R26 Customer information

The requirement is unchanged in this revision. The requirement has only be reworded and clarified. Information regarding warranties, health hazards and claims shall be provided in the Nordic language or languages that are used in the country or countries of sale. If the toner cartridge is not sold on the Nordic market, information in a Nordic language is not required.

The requirement regarding chip information has also been moved to this requirement.

4.2.7 Marketing

R27 Information to resellers and distributors

This requirement attempts to address the misuse of the Nordic Ecolabel logo as described under 4.1.1.

In previous criteria, the licensee has only been required to inform resellers as to the use of the Nordic Ecolabel in marketing. The new criteria propose that the licensee shall ensure that the reseller confirms in writing that they have received the pertinent information. Appendix 8 or equivalent can be used. The licensee shall file this document locally and be able to present it on an inspection visit or return inspection. We believe this will better ensure the correct use of the Nordic Ecolabel.

An alternative would be that resellers who wish to use the Nordic Ecolabelling in their marketing materials should apply for a separate “reseller licence”. This alternative must be investigated further before it is possible to present details of how this would work in practice.

R28 Sales outside the Nordic region

We require this information to learn about on which markets the Nordic Ecolabel is used.

5 Changes compared to previous versions

The most significant change is that the requirements on toner powder are now harmonised with the requirements on printing chemicals stipulated in the criteria for printing companies. The criteria are now clear with regard to high-capacity products. Several standards to which the criteria refer have been changed. A requirement on emissions has been introduced. The documentation requirements have been tightened regarding reseller’s adherence to the regulations governing the use of the Nordic Ecolabel. The requirements on take-back systems for private

individuals have been changed. All requirements are described in more detail in the previous section of this document.

6 New criteria

Following the referral period, we hope to receive comments on areas in which requirements can be stipulated in the future. Current areas of interest include the transport and distribution of toner cartridges, social/ethical aspects regarding production and take-back systems.

We also see a need to develop different types of licences for different actors within the industry and once more review the possibility to extend the product group to include inkjet cartridges.

7 References

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