Consumables

Catalog of criteria.
Saphira Eco.

HEIDELBERG

Reliable, clean, strong. **Saphira Eco.**

Think economically, print ecologically. These two requirements are equally important to Heidelberg®. But how is it possible to combine environmentally friendly production with business success?

Under the Saphira® Eco label, Heidelberg offers a comprehensive range of environmentally friendly consumables that have one thing in common: they all satisfy the strictest criteria defined by national and international environmental certificates and industry standards. And Heidelberg is continually improving them and adapting them to new or extended requirements.

The current catalog of criteria contains a concise, factual representation of all Saphira Eco product groups. It highlights their relevant components and explains which criteria have led to Saphira Eco consumables being classified as suitable for green printing. It also shows how seriously Heidelberg takes its environmental commitment and its self-declared goal of opening up promising new areas of business for customers through environmentally friendly products.

heidelberg.com/en/saphira-eco

Contents

Environmental commitment **05**

Saphira Eco | consumables **07**

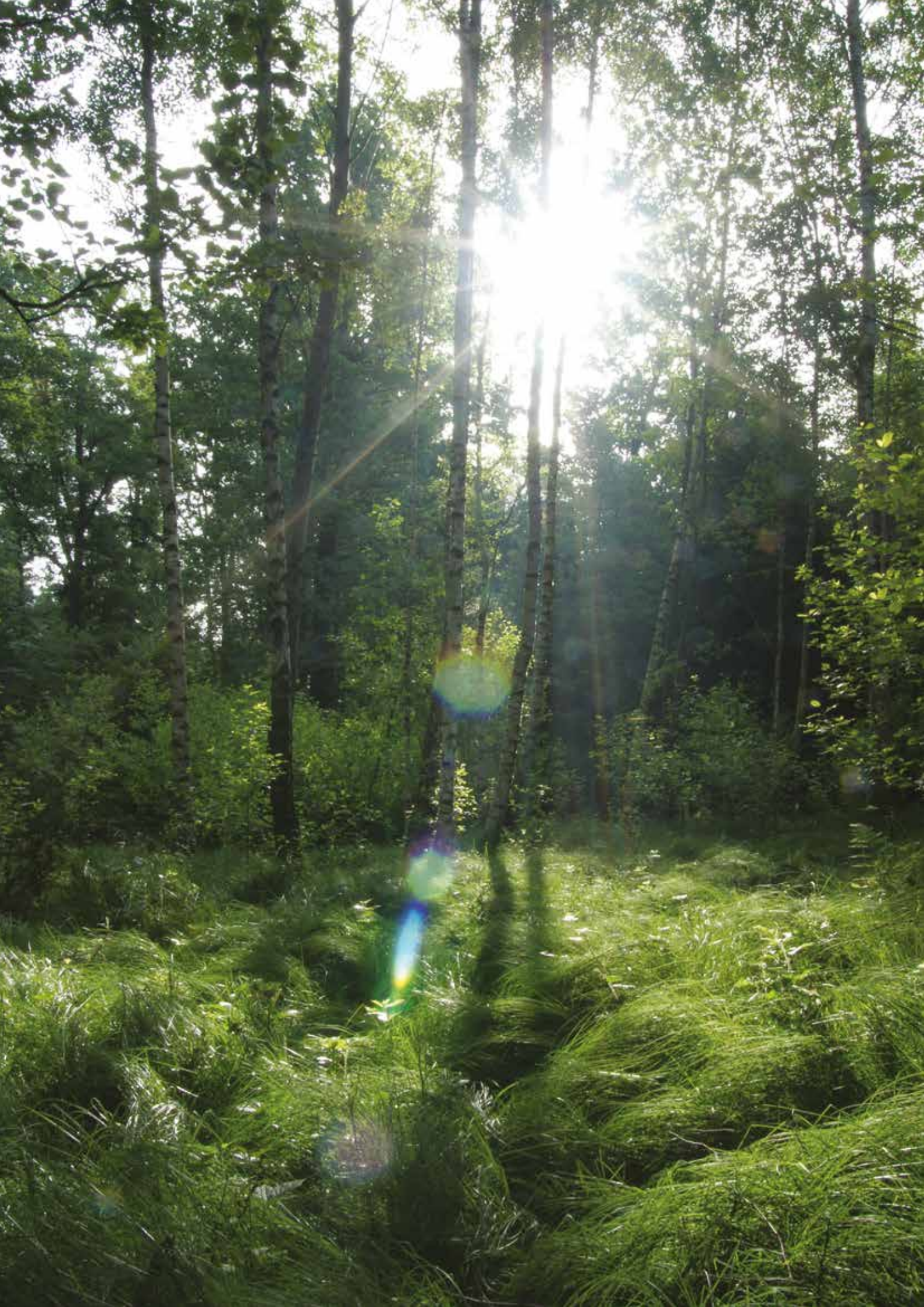
Catalog of criteria **09**

1. Instructions for use 10
2. General criteria 10
3. General requirements for manufacturers 12
4. Product-specific criteria 13
   - 4.1 Printing plates and chemicals 14
   - 4.2 Inks 14
   - 4.3 Coatings 16
   - 4.4 Fountain solution additives 17
   - 4.5 Washes 18
   - 4.6 Cleaners 19
   - 4.7 Spray powders 19
   - 4.8 Glues 20
   - 4.9 Blankets 21

Appendix **24**

Appendix 1 | Heavy metals 25
Appendix 2 | Dyes and pigments 25
Appendix 3 | Water Hazard Class (WHC) 29
Appendix 4 | Solvents for inks 29
Appendix 5 | Substances 30
Appendix 6 | Nitrosamine 32
Appendix 7 | Phthalates and other plasticizers 32

Glossary **33**



Environmental commitment. **Ecological responsibility as a basic corporate principle.**

Environmental protection and careful use of resources have been a clearly defined part of our business strategy since 1992. A systematic commitment to the environment at all process stages, green printing, and innovative integrated solutions are the focal points of a holistic corporate strategy at Heidelberg.

Facts illustrating the environmental commitment of Heidelberg

- Our coating production facilities in Zwaag (Netherlands) and Aylesbury (UK), and our production sites in Wiesloch-Walldorf, Amstetten, Brandenburg, Leipzig, and Ludwigsburg are certified to the international ISO 14001:2004 standard.
- Since 2001, presses from Heidelberg have held the "Emissions Tested" and "Optimized UV Printing" certificates.
- Our Print Media Center in Wiesloch-Walldorf is FSC-certified; since 2009, FSC paper has been used exclusively for all our print products.
- At IPEX 2010, Heidelberg unveiled a "carbon footprint calculator" as a new function within Prinect® Analyze Point.
- Heidelberg is a co-initiator of the VDMA guideline (VDMA = German Engineering Federation) on the measurement of energy consumption for sheetfed offset presses.

Environmental commitment as an ongoing task

Heidelberg is continuously working on new projects to further improve the company's eco balance.

heidelberg.com/eco


Saphira Eco
Fountain Solution
Beseitigt vollständig die Verwendung von Isopropyl Alkohol und stabilisiert gleichzeitig den pH zwischen 4,8 und 5,2.
Saphira Eco
Ink Excel Yellow
Yellow - Gelb - Jaune
Use before end of/ Utiliser avant fin/ Mindesthaltbarkeit
03.2018
Saphira Eco
Ink Excel Magenta
Magenta - Magenta - Magenta

Saphira Eco.
Environmentally friendly consumables.

Saphira Eco is an extensive range of eco-friendly consumables for the entire printing process. All products bearing the Saphira Eco label are carefully selected based on green criteria and meet or even exceed current environmental requirements. Saphira Eco consumables enable print shops to comply with all the requirements of the major environmental certificates (such as Nordic Swan, the EU Ecolabel for printing products, and the New Zealand Ecolabel).

The right product for every occasion
Heidelberg is continuously expanding its product portfolio of eco-friendly materials.

An environmental commitment
Saphira Eco products are made from renewable raw materials and/or can be recycled. Materials defined as CMR[1], PBT[1], or vPvB[1] under the REACH regulation are not used as raw materials in Saphira Eco products. With the Saphira Eco label, print shops can be sure of lower emissions than with most comparable products.

Major benefits
Saphira Eco consumables play a key role in meeting the requirements of the most popular environmental certificates. In addition to its environmental benefits – such as reducing emissions of volatile organic compounds (VOCs), ammonia, and fine dust – our Saphira Eco products also use fewer chemicals and generate less waste water.

Available worldwide
Saphira Eco consumables are available from our 250 Heidelberg sales offices around the world as well as from our eShop.

shop.heidelberg.com

[1] See glossary

Proof of sustainability.
Our catalog of criteria.

The catalog of criteria for Saphira Eco products from Heidelberg contains precise guidelines for eco-friendly consumables and distinguishes between general and product-specific criteria.

The general criteria apply across all product groups to all Saphira Eco consumables. They are always compulsory and thus serve as an initial exclusion criterion when selecting new environmentally friendly consumables. The product-specific criteria refer to individual materials and apply to particular products.

Suppliers of Saphira Eco consumables are required to satisfy high demands. Only if they do so are they approved by Heidelberg.

1. Instructions for use

1.1 Treatment

The substances listed in the catalog of criteria are split into three levels:

Classification

Level 1: Substances are permitted in Saphira Eco consumables.

Level 2: Substances are only permitted under certain conditions. Until they can be replaced or eliminated, these substances may be used in line with specified limit values.

Level 3: Substances are not permitted in Saphira Eco consumables. The use of these substances is banned.

1.2 Notes regarding the tables

- **Percentages:**
  The percentages indicated are by weight.
- **Measuring methods:**
  VOC values are determined as defined by the EU.
- **Abbreviations:**
  The abbreviation “n.a.” means “not applicable”.

1.3 Entering into force of bans

The date stated indicates from when Heidelberger Druckmaschinen AG no longer accepts a particular substance as a component of Saphira Eco consumables.

1.4 Terminology and definitions

The glossary at the end of the document explains important terms and definitions.

2. General criteria

The general criteria for Saphira Eco consumables apply across all product groups to all consumables.

Criteria

- Saphira Eco consumables must meet or exceed all applicable statutory regulations and industry performance standards.
- Saphira Eco consumables must be made from renewable raw materials and/or be recyclable.
- Materials defined as CMR, PBT, or vPvB under the version of the REACH regulation in force must not be used as raw materials in Saphira Eco products.
- Saphira Eco consumables must generate far lower emissions than comparable products on the market.
- Saphira Eco consumables must be compatible with printing machinery and equipment (see Fogra/MPA certificate).
- Saphira Eco consumables must meet or exceed the additional product-specific criteria that Heidelberg voluntarily undertakes to comply with.
- Saphira Eco consumables should never require hazard or similar warning symbols.
- Due to the switchover from directive 1999/45/EC to the new GHS, some products that did not previously need to be labeled may now require a hazardous substance label. In such cases, the actual product has not changed. Provided the materials are used correctly, these products are still not harmful to human health or the environment. Until appropriate replacement products have been tested and approved, it is permissible for the existing products to be approved as Saphira Eco for the time being.

Classification	CAS number	Designation	Date bans come into force
Level 3	n.a.	Carcinogenic	01/2011
Level 3	n.a.	Mutagenic	01/2011
Level 3	n.a.	Toxic to reproduction	01/2011

Classification	H phrases	R phrases	Date bans come into force
Level 3	H 300	R 26, R 28	01/2011
Level 3	H 301	R 25	01/2011
Level 3	H 304	R 65	01/2011
Level 3	H 310	R 27	01/2011
Level 3	H 311	R 24	01/2011
Level 3	H 314	R 34/R 35	01/2011
Level 3	H 317	R 43	01/2011
Level 3	H 318	R 41	01/2011
Level 3	H 330	R 26	01/2011
Level 3	H 330, H 310, H 300	R 26, R 27, R 28	01/2011
Level 3	H 331	R 23	01/2011
Level 3	H 334	R 42	01/2011
Level 3	H 340	R 46	01/2011
Level 3	H 341	R 68	01/2011
Level 3	H 350	R 45, R 49	01/2011
Level 3	H 350i	R 49	01/2011
Level 3	H 351	R 40	01/2011
Level 3	H 360	R 60, R 61	01/2011
Level 3	H 361	R 62, R 63	01/2011
Level 3	H 362	R 64	01/2011
Level 3	H 370	R 39, R 39/23, R 39/24, R 39/25	01/2011
Level 3	H 371	R 68/20, R 68/21, R 68/22	01/2011
Level 3	H 372	R 48, R 48/23, R 48/24, R 48/25	01/2011
Level 3	H 373	R 48, R 48/20, R 48/21, R 48/22, R 48/23, R 48/24, R 48/25	01/2011
Level 3	H 373	R 33	01/2011
Level 3	H 400	R 50, R 50/53	01/2011
Level 3	H 410	R 50/53	01/2011
Level 3	H 411	R 51/53	01/2011
Level 3	H 412	R 52/53	01/2011
Level 3	H 413	R 52, R 53	01/2011
Level 3	EUH 029	R 29	01/2011
Level 3	EUH 031	R 31	01/2011
Level 3	EUH 032	R 32	01/2011
Level 3	EUH 059	R 59	01/2011
Level 3	EUH 070	R 39/41	01/2011

Saphira Eco consumables are **not** marked with any of these symbols.

3. General requirements for manufacturers

The criteria stipulated by Heidelberger Druckmaschinen AG apply to all manufacturers and suppliers of Saphira Eco consumables. Meeting these criteria is a prerequisite for approval, and compliance is checked at regular intervals by Heidelberg.

Requirements

- Manufacturers/suppliers of Saphira Eco consumables must have an environmental management system in place to implement the technical and organizational aspects of their environmental policy. All suppliers of Saphira Eco consumables are certified to ISO 9001/14001 or can verify that they meet or exceed the requirements of ISO 9001/14001.
- Manufacturers/suppliers of Saphira Eco consumables must always seek to improve their environmental protection by reducing their negative impact on the environment and cutting their consumption of energy and resources.
- Manufacturers/suppliers of Saphira Eco consumables must endeavor to achieve a higher standard of environmental protection than is required by statutory regulations.
- Manufacturers/suppliers of Saphira Eco consumables must test, monitor, and assess the impact of their business operations on the environment on an ongoing basis.
- Manufacturers/suppliers of Saphira Eco consumables must endeavor to eliminate potential negative impacts on the environment from the early stages of product development and in the subsequent production process.
- Manufacturers/suppliers of Saphira Eco consumables must train their staff and provide them with information to improve environmental awareness both within and outside the company.
- Manufacturers/suppliers of Saphira Eco consumables must make an active contribution to protecting the environment by obtaining their raw materials from green sources.
- Manufacturers/suppliers of Saphira Eco consumables must commit themselves to the continuous improvement of their company's environmental protection measures, for example by integrating environmental protection technologies into production operations.

4. Product-specific criteria

Product-specific criteria for Saphira Eco consumables in each case relate to the product group in question. They are to be applied in line with the specified classification and concentration.

For the most part, Saphira Eco consumables are made from renewable or recyclable raw materials and contain only a minimum amount of harmful substances.

4.1 Printing plates and chemicals

4.1.a Printing plates

Stipulation: Only chemical-free or reduced-chemical CtP printing plates or developed on press (DoP) plates may be used as Saphira Eco printing plates.

4.1.b Printing plate chemicals

Stipulation: Printing plate chemicals are not suitable for use as Saphira Eco products.

4.2 Inks

4.2.a UV inks

Stipulation: UV inks are not suitable for use as Saphira Eco products.

4.2.b Conventional inks

4.2.b.1 Heavy metals

Stipulation: Restriction/exclusion: See Appendix 1.

Exceptions				
Classification	**CAS number**	**Designation**	**Concentration**	**Date bans come into force**
Level 1	147-14-8	Copper phthalocyanine	n.a.	n.a.
Level 2	7439-96-5	Manganese	< 0.5 %[1]	n.a.
Level 2	7440-48-4	Cobalt	< 0.1 %[2] USA/Canada	05/2016
Level 3	7440-48-4	Cobalt	n.a.	05/2016

[1] As a desiccant in relation to the ink
[2] In relation to the ink

4.2.b.2 Dyes/pigments

Stipulation: Restriction/exclusion: See Appendix 2.

4.2.b.3 Mineral oil content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Mineral oil	< 1 %	n.a.
Level 2	n.a.	Mineral oil	< 3 % USA/Canada	n.a.

4.2.b.4 Phthalates and other plasticizers

Stipulation: Restriction/exclusion: See Appendix 7.

4.2.b.5 Natural resins/waxes

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 1	n.a.	Natural resins[1]	n.a.	n.a.
Level 1	n.a.	Natural waxes[1]	n.a.	n.a.

[1] Chemically modified as a raw material

4.2.b.6 VOC content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Volatile organic compound (VOC)	< 3 % in line with European measuring method	n.a.

4.2.b.7 Flash point

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Flash point	> 100 °C	n.a.

4.2.b.8 Water Hazard Class

Stipulation: Restriction/exclusion: See Appendix 3.

4.2.b.9 Solvents for inks

Usage: Restriction/exclusion: See Appendix 4.

4.2.b.10 Miscellaneous connections

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	1879-09-0	2,4-Dimethyl-6-tert-butyl phenol	n.a.	01/2013
Level 3	n.a.	Diaminostilbene and its derivates	n.a.	01/2013
Level 3	90-93-7	4,4'-Bis(dimethylamino) benzophenone (Michler's ketone)	n.a.	01/2013
Level 3	608-73-1 319-84-6 319-84-7 319-84-8	Hexachlorocyclohexane	n.a.	01/2013

4.3 Coatings

4.3.a Oil-based varnishes

Stipulation: Oil-based varnishes correspond in their composition to conventional inks without dyes/pigmentation. The criteria for Saphira Eco inks apply here.

4.3.b Water-based coatings

4.3.b.1 VOC content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Volatile organic compound (VOC)	< 3 % in line with European measuring method	n.a.

4.3.b.2 Ammonia content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	7664-41-7	Ammonia	< 1 % (NH_4)	n.a.

4.3.b.3 Phthalates and other plasticizers

Stipulation: Restriction/exclusion: See Appendix 7.

4.3.b.4 Heavy metals

Stipulation: Restriction/exclusion: See Appendix 1.

4.3.b.5 Dyes

Stipulation: Restriction/exclusion: See Appendix 2.

4.3.c UV and special coatings

Stipulation: UV coatings and special-effect coatings such as pearly luster/metal effect coatings, scented coatings, etc. are not suitable as Saphira Eco products.

4.3.c Biocides

Stipulation: Biocides are permitted only if their bio-accumulation potential has a log Pow (log octanol/water partition coefficient) < 3.0 or an experimentally determined bio-concentration factor (BCF) ≤ 100. Only biocides authorized in the EU are allowed.

4.4 Fountain solution additives

Stipulation: Only fountain solution additives for alcohol-free printing can be used for Saphira Eco.

4.4.a Glycol ether

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	109-86-4	Methoxyethanol Other names: • 2-Methoxyethanol • Ethylene glycol monoethyl ether	n.a.	01/2011
Level 3	110-80-5	2-Ethoxyethanol Other names: • Ethylene glycol monoethyl ether • Cellosolve • Ethyl cellosolve	n.a.	01/2011

4.4.b 2-Propanol

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	67-63-0	2-Propanol Other names: • Propan-2-ol (IUPAC) • Propanol-2 • Isopropanol • i-Propanol • Isopropyl alcohol • Secondary propyl alcohol • Sec-propanol • Persprit • Petrohol • Petrosol • Dimethylcarbinol • ß-hydroxypropane • Propol • Alcohol isopropylicus • IPA	n.a.	01/2011

4.4.c Biocides

Stipulation: Biocides are permitted only if their bioaccumulation potential has a log Pow (log octanol/water partition coefficient) < 3.0 or an experimentally determined bio-concentration factor (BCF) ≤100. Only biocides authorized in the EU are allowed.

4.4.d Water Hazard Class

Stipulation: Restriction/exclusion: See Appendix 3.

4.4.e VOC content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Volatile organic compound (VOC)	< 5 % in line with European measuring method	01/2011

4.4.f Fogra/MPA approval

Stipulation: All Saphira Eco fountain solution additives require a Fogra/MPA certificate.

4.5 Washes

Usage: Used in automatic washup devices.

4.5.a Water Hazard Class

Stipulation: Restriction/exclusion: See Appendix 3.

4.5.b Substances

Stipulation: Restriction/exclusion: See Appendix 5.

4.5.c VOC content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Volatile organic compound (VOC)	< 10 % and < 100 g/l[1]	01/2011

[1] SCAQMD Rule 1171 – USA

4.5.d Fogra approval

Stipulation: All Saphira Eco washes require a Fogra certificate.

4.5.e Flash point

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Flash point	>100 °C	n.a.

4.5.f Biocides

Stipulation: Biocides are permitted only if their bioaccumulation potential has a log Pow (log octanol/water partition coefficient) < 3.0 or an experimentally determined bio-concentration factor (BCF) ≤ 100. Only biocides authorized in the EU are allowed.

4.6 Cleaners

Usage: Used for cleaning by hand.

4.6.a Water Hazard Class

Stipulation: Restriction/exclusion: See Appendix 3.

4.6.b Substances

Stipulation: Restriction/exclusion: See Appendix 5.

4.6.c pH value

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	pH value	4.8–9	n.a.

4.6.d Flash point

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Flash point	>60 °C	n.a.

4.6.e Biocides

Stipulation: Biocides are permitted only if their bioaccumulation potential has a log Pow (log octanol/water partition coefficient) < 3.0 or an experimentally determined bio-concentration factor (BCF) ≤ 100. Only biocides authorized in the EU are allowed.

4.7 Spray powders

Stipulation: Only starch-based or mineral powders may be used for Saphira Eco products.

80 (–5) vol% of the total particles of a powder must lie within the grain size range 0.5 × median value to 1.5 × median value.

Spray powders

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Fine powder grains	≤20 µm	n.a.
Level 2	n.a.	Medium powder grains	>20 and ≤40 µm	n.a.
Level 2	n.a.	Coarse powder grains	>40 µm	n.a.

Fine powder content

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Fine powder grains	10+0,5 vol%	n.a.
Level 2	n.a.	Medium powder grains	7.5+0.5 vol%	n.a.
Level 2	n.a.	Coarse powder grains	5+0.5 vol%	n.a.

4.8 Glues

4.8.a PUR glues

Stipulation: PUR glues may only be used if they fulfill the requirements of the European Recovered Paper Council's "Scorecard for the Removability of Adhesive Applications." They must also comply with the protection principles for the use of reactive PUR hotmelt adhesives in the processing of wood, paper, and leather as stipulated by the German Berufsgenossenschaftliches Institut für Arbeitsschutz (Industrial Institute for Labor Protection)

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Monomeric isocyanate MDI	< 0.1 %	01/2013

4.8.b Hotmelt glues

Stipulation: Hotmelt glues are not suitable for use as Saphira Eco products.

4.8.c Dispersion glues

4.8.c.1 Flash point

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Flash point	>100 °C	n.a.

4.8.c.2 Water Hazard Class

Usage: Restriction/exclusion: See Appendix 3.

4.8.c.3 Phthalates and other plasticizers

Stipulation: Restriction/exclusion: See Appendix 7.

4.8.c.4 Biocides

Stipulation: Biocides are permitted only if their bioaccumulation potential has a log Pow (log octanol/water partition coefficient) < 3.0 or an experimentally determined bio-concentration factor (BCF) ≤ 100. Only biocides authorized in the EU are allowed.

4.9 Blankets

4.9.a Heavy metal

Stipulation: Exclusion: See Appendix 1.

Exceptions				
Classification	**CAS number**	**Designation**	**Concentration**	**Date bans come into force**
Level 2	7440-66-6	Zinc	< 3 %	01/2013

4.9.b Dyes/pigments

Stipulation: Restriction/exclusion: See Appendix 2.

4.9.c Phthalates and other plasticizers

Stipulation: Exclusion: See Appendix 7.

4.9.d Solvents

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	108-88-3	Toluene	< 30 %	01/2013

4.9.e Fillers

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 1	n.a.	Cotton fabric	n.a.	01/2013
Level 2	n.a.	Oxides or mixed oxides of calcium, magnesium, aluminum, silicon, and zinc	< 3.0 %	01/2013
Level 3	n.a.	Asbestos	n.a.	01/2013

4.9.f Vulcanization additives

Classification	CAS number	Designation	Concentration		Date bans come into force
Level 2	97-74-5	Tetramethylthiuram monosulfide	< 1.2 %		01/2013
Level 2	137-26-8	Tetramethylthiuram disulfide	< 3.0 % in total	< 3.0 % in total	01/2013
Level 2	97-77-8	Tetraethylthiuram			01/2013
Level 2	53880-86-7	Dimethyldiphenylthiuram disulfide			01/2013
Level 2	120-54-7	Dipentamethylene thiuram tetrasulfide			01/2013
Level 2	149-30-4	2-Mercaptobenzothiazole	< 0.05 %		01/2013
Level 2	120-78-5	Dibenzothiazyl disulfide	< 0.5 %		01/2013
Level 2	85-44-9	Phthalic anhydride	< 0.5 %	< 2.5 % in total	01/2013
Level 2	65-85-0	Benzoic acid	< 1.0 %		01/2013
Level 2	57-11-4	Stearic acid	< 1.5 %		01/2013
Level 3	98-77-1	Pentamethylene-ammonium-N-pentamethylene-dithiocarbamate			01/2013

4.9.g Processing aids

Classification	CAS number	Designation	Concentration
Level 2	n.a.	Zinc salts of saturated and/or unsaturated high-molecular fatty acids (chain length mainly over C17, but not below C14)	< 3.0 %
Level 2	8050-09-7	Colophony	< 2.0 %
Level 2	9006-24-0	Xylene-formaldehyde resins	5.0 % in total incl. any paraffin oils in factice
Level 2	n.a.	Liquid paraffins	
Level 2	n.a.	Melamine-resorcinol-formaldehyde resins and resorcinol-formaldehyde resins	As bonding agent only < 5.0 %
Level 2	n.a.	Factice	< 20 % providing that the following conditions are met: Only natural and/or hydrogenated fats and oils of vegetable and/or animal origin, but no blown fats or oils, may be used as raw materials in the production of factice. Only aliphatic or cycloaliphatic secondary amines may be used as regulators in the production of factice. The regulators must be completely reacted.

4.9.h Aging inhibitors

Classification	CAS number	Designation	Concentration	
Level 2	4066-02-8	2,2'-Methylene-bis-(4-methyl-6-cyclohexylphenol)		< 1 % in total
Level 2	77-62-3	2,2'-Methylene-bis[4-methyl-6-(alpha-methylcyclohexyl)-phenol]		
Level 2	119-47-1	2,2'-Methylene-bis-(4-methyl-6-tert-butyl-phenol)		
Level 2	n.a.	Bis(3,5-dimethyl-2-oxyphenyl)-isobutane		
Level 2	n.a.	Phenol and/or methylphenols, converted with styrene or a-methylstyrene and/or olefins of chain length C3–C12		
Level 2	128-37-0	2,6-Di-tert-butyl-4-methylphenol (BHT)		
Level 2	26523-78-4 1333-21-7	Tris-(monononylphenyl)-phosphite mixed with tris-(dinonylphenyl)-phosphite		
Level 2	123968-25-2	2,4-Di-tert-pentyl-6-[1-(3,5-di-tert-pentyl-2-hydroxy-phenyl) ethyl]phenylacrylate	< 0.5 %	
Level 2	7786-17-6	Mixture of 2,2'-methylene bis(4-methyl-6-nonyl-phenol), in total approx. 2 parts, and 2,6-bis(2-hydroxy-3-nonyl-5-methyl-benzyl)- p-cresol, approx. 1 part	< 0.3 %	
Level 2	6683-19-8	Tetrakis[methylene(3,5-di-tert-butyl-4-hydroxy)hydrocinnamate] methane	< 0.25 %	
Level 2	991-84-4	2,4-Bis-(octylthio)-6-(4-hydroxy-3,5-di-tert-butylanilino)-1,3,5-triazine	< 0.2 %	
Level 2	110553-27-0	2,4-Bis(octylthiomethyl)-6-methyl-phenol	< 0.5 %	
Level 2	61167-58-6	2-tert-Butyl-6-(3-tert-butyl-2-hydroxy-5-methylbenzyl)4-methylphenyl-acrylate	< 0.5 %	
Level 2	n.a.	Styrenated diphenylamine		
Level 2	2082-79-3	Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	< 0.5 %	
Level 2	31570-04-4	Tris(2,4-di-tert-butyl-phenyl)phosphite	< 0.4 %	
Level 2	119-47-1	2,2'-Methylene-bis(4-ethyl-6-tertbutylphenol)		
Level 2	n.a.	Reaction product of 4-methylphenol with isobutylene and dicyclopentadiene	< 1.4 %	
Level 2	110675-26-8	2,4-Bis-dodecylthiomethyl-6-methylphenol	< 0.5 %	

Aging inhibitors for ethylene-propylene rubber

For ethylene-propylene rubber, only the following products may be used:

Classification	CAS number	Designation	Concentration
Level 2	96-69-5	4,4'-Thio-bis(3-methyl-6-tert-butyl-phenol)	< 0.25 %
Level 2	2082-79-3	n-Octadecyl-beta-(4'-hydroxy-3',5'-di-tert-butyl-phenyl)-propionate	< 0.2 %
Level 2	6683-19-8	Tetrakis-[methylene (3,5-di-tert-butyl-4-hydroxy)-hydrocinnamate]-methane	< 0.2 %

4.9.i Slip and mold release agents

Classification	CAS number	Designation	Concentration
Level 2	557-05-1	Zinc stearate	Zinc content < 3.0 vol%

4.9.j Nitrosamine

Usage: Restriction/exclusion: See Appendix 6.

Forbiden substances.
Appendix.

Various regulations prohibit the use of specific materials in the production of eco consumables. The following pages provide an overview of these forbidden substances.

Materials defined as CMR, PBT, or vPvB under the version of the REACH regulation in force are not used as raw materials in Saphira Eco products.

Appendix 1

Heavy metals

Classification	CAS number	Designation	Date bans come into force
Level 3	7439-97-6	Mercury	01/2011
Level 3	7439-92-1	Lead	01/2011
Level 3	7440-43-9	Cadmium	01/2011
Level 3	1333-82-0	Chromium(VI) oxide	01/2011
Level 3	7440-38-2	Arsenic	01/2011
Level 3	7440-36-0	Antimony	01/2011
Level 3	7782-49-2	Selenium	01/2011
Level 3	7440-50-8	Cooper	01/2011
Level 3	7440-02-0	Nickel	01/2011
Level 3	7440-39-3	Barium (soluble)	01/2011

Appendix 2

Dyes and pigments

Classification	CAS number	Designation	Date bans come into force
Level 3	92-67-1	4-Aminobiphenyl Other names: • p-Phenylaniline • Biphenyl-4-ylamine • p-Aminobiphenyl • p-Aminodiphenyl • 4-Biphenylamine • Xenylamine	01/2011
Level 3	92-87-5	Benzidine Other names: • 4-(4-aminophenyl)aniline (IUPAC) • 4,4'-Diaminobiphenyl • 1-Amino-4-(4-Aminophenyl)benzene • 4,4'-Bisaniline • para'-Diaminobiphenyl • C.I. 37225	01/2011
Level 3	95-69-2	4-Chloro-o-toluidine Other names: • 1-Amino-4-chloro-2-methylbenzene • 4-Chloro-2-methylaniline • 2-Amino-5-chlorotoluene • 5-Chloro-2-aminotoluene	01/2011
Level 3	91-59-8	2-Naphthylamine Other names: • 2-Aminonaphthalene • ß-Naphthylamine	01/2011
Level 3	97-56-3	o-Aminoazotoluene Other names: • 4-Amino-2',3-dimethylazobenzene • 4-o-Tolylazo-o-toluidine	01/2011

Dyes and pigments (continued)

Classification	CAS number	Designation	Date bans come into force
Level 3	99-55-8	2-Amino-4-nitrotoluene Other names: • 5-Nitro-o-toluidine • 2-Methyl-5-nitroaniline • 4-Nitro-2-aminotoluene • 2-Amino-1-methyl-4-nitrobenzene • PNOT	01/2011
Level 3	106-47-8	4-Chloroaniline Other name: • p-Chloroaniline	01/2011
Level 3	615-05-4	2,4-Diamino-anisole Other names: • 4-Methoxy-m-phenylendiamin • 2,4-Diaminophenylmethylether • 3-Amino-4-methoxyanilin • 3-Amino-p-anisidin • 2,4-Diamino-1-methoxybenzol • 4-MMPD	01/2011
Level 3	101-77-9	4,4'-Diaminodiphenymethane Other names: • DADPM • DAPM • Bis(p-aminophenyl)methane • Dianilinemethane • 4,4'-Methylenedianiline • Methylenebisaniline • Bis(4-aminophenyl)methane • DDM • DDPM • 4-(4-Aminobenzyl)aniline	01/2011
Level 3	91-94-1 612-83-9 (as dihydrochloride)	3,3'-Dichlorobenzidine Other names: • 4,4'-Diamino-3,3'-dichlorobiphenyl • 3,3'-Dichloro-4,4'-diaminodiphenyl • o,o'-Dichlorobenzidine • 3,3'-Dichloro-4,4'-biphenyldiamine • 3,3'-Dichlorobiphenyl-4,4'-diamine • DCB	01/2011
Level 3	119-90-4	3,3'-Dimethoxybenzidine Other names: • o-Dianisidine • 3,3'-Dimethoxybiphenyl-4,4'-diamine • 4,4'-Diamino-3,3'-dimethoxybiphenyl	01/2011
Level 3	119-93-7	3,3'-Dimethylbenzidine Other names: • 4,4'-Diamino-3,3'-dimethylbiphenyl • 4,4'-Bis(o-toluidine) • o-Tolidine • 3,3'-Dimethylbiphenyl-4,4'-diamine • Bianisidine • Diaminoditolyl • 4,4'-Di-o-toluidine • 4,4'-Bi-o-toluidine	01/2011
Level 3	838-88-0	3,3'-Dimethyl-4,4'-diaminodiphenylmethane Other names: • 4,4'-Methylenedi-o-toluidine • 4,4'-Methylenebis(2-methylaniline) • Me-MDA • MBOT • Tolidine base • DADPM • DAPM	01/2011

Dyes and pigments (continued)

Classification	CAS number	Designation	Date bans come into force
Level 3	120-71-8	p-Cresidine Other names: • 2-Methoxy-5-methylaniline (IUPAC) • 5-Methyl-o-anisidine • 3-Amino-4-methoxytoluene • 6-Methoxy-m-toluidine • 1-Amino-2-methoxy-5-methylbenzene	01/2011
Level 3	101-14-4	4,4'-Methylene-bis(2-chloro-aniline)	01/2011
Level 3	101-80-4	4,4'-Oxydianiline	01/2011
Level 3	139-65-1	4,4'-Thiodianiline	01/2011
Level 3	95-53-4	o-Toluidine Other names: • 2-Methylaniline • 1,2-Methylaniline • 1,2-Aminotoluene • o-Tolylamine	01/2011
Level 3	95-80-7	2,4-Diaminotoluene Other names: • 4-Methyl-m-phenylenediamine • 2,4-Toluylenediamine	01/2011
Level 3	137-17-7	2,4,5-Trimethylaniline Other names: • 1-Amino-2,4,5-trimethylbenzene • (2,4,5-Trimethylbenzene)amine • psi-Cumidine • Pseudocumidine	01/2011
Level 3	60-09-3	Aniline Yellow Other names: • 4-Aminoazobenzene • 4-(Phenylazo)aniline • 1-Amino-4-(phenylazo)benzene • p-(Phenylazo)aniline • AAB • p-Aminodiphenylimide • p-Phenylazophenylamine • C.I. 11000 • C.I. Solvent Blue 7 • C.I. Solvent Yellow 1 • Fat Yellow AAB • Oil Yellow AAB • Solvent Yellow 1 • Sudan Yellow R • EINECS 200-453-6	01/2011
Level 3	90-04-0	2-Anisidine Other names: • 2-Methoxyaniline • o-Anisidine • 1-Amino-2-methoxybenzene • 2-Methoxyphenylamine • o-Aminoanisole • 2-Aminoanisole • o-Anisylamine • o-Methoxyaniline • 2-Anisidine	01/2011
Level 3	2465-27-2	Auramine Other names: • Auramine hydrochloride • Auramine, monohydrochloride • 4,4'-Carbonimidoylbis (N,N-dimethylaniline) monohydrochloride	01/2011

Dyes and pigments (continued)

Classification	CAS number	Designation	Date bans come into force
Level 3	532-82-1	Chrysoidine Other names: • Chrysoidine monohydrochloride • 4-Phenylazophenylene-1,3-diamine monohydrochloride • 4-Phenylazo-m-phenylenediamine hydrochloride • 2,4-Diaminoazobenzene hydrochloride • Basic Orange 2 • C.I. 11270	01/2011
Level 3	632-99-5	Fuchsin Other names: • Aniline red • Diamond fuchsin • Alkaline fuchsin • Fuchsin RFN • Magenta I • Magenta red • Basic Violet 14 (INCI; KVO) • CI 42510 (INCI) • Rosaniline chloride • Methyl fuchsin • 3-Methyl-para-fuchsin	01/2011
Level 3	8004-98-6	Induline	01/2011
Level 3	4482-25-1	Cresylene Brown	01/2011
Level 3	n.a.	Other azo dyes	01/2011
Level 3	1344-37-2	Lead sulfochromate yellow Other name: • Pigment Yellow 34	01/2013
Level 3	12656-85-8	Lead chromate molybdate sulphate red Other name: • Pigment Red 104	01/2013
Level 3	12656-85-8	4-Amino-3-fluorophenol	01/2016
Level 3	n.a.	6-Amino-2-ethoxynaphtalin	01/2016

Appendix 3

Water Hazard Class (WHC)

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 2	n.a.	Water Hazard Class (WHC)	Slightly hazardous to water (1) for Europe	01/2011

Appendix 4

Solvents for inks

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	109-86-4	2-Methoxyethanol (Methylglykol)	n.a.	01/2013
Level 3	110-80-5	2-Ethoxyethanol (Ethylglykol)	n.a.	01/2013
Level 3	110-49-6	Methylglycol acetate	n.a.	01/2013
Level 3	111-15-9	2-Ethoxyethanol acetate (Ethyl glycol acetate)	n.a.	01/2013
Level 3	108-90-7	Chlorobenzene	n.a.	01/2013
Level 3	n.a.	Dichlorobenzene	n.a.	01/2013
Level 3	n.a.	Volatile chlorinated hydrocarbons (CHC)	n.a.	01/2013
Level 3	n.a.	Volatile fluorochlorinated hydrocarbons (CFC)	n.a.	01/2013
Level 3	79-46-9	2-Nitropropane	n.a.	01/2013
Level 3	67-56-1	Methanol	n.a.	01/2013
Level 2	n.a.	Hydrocarbons	< 0.1 %	01/2013

Appendix 5

Substances

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	111-76-2	2-Butoxyethanol	n.a.	01/2013
Level 3	n.a.	N-Methyl-2-pyrrolidone (NMP)	n.a.	01/2013
Level 3	109-86-4	2-Methoxyethanol Other names: • Ethanediol monomethyl ether • Glycol monomethyl ether • Methyl cellosolve • 1-Methoxy-2-hydroxyethane • Methyl glycol • EGME	n.a.	01/2011
Level 3	110-80-5	2-Ethoxyethanol Other names: • Ethylene glycol monoethyl ether • 2-Ethoxyethanol • Cellosolve • Solvulose • Glycol monoethyl ether • Oxitol • Ethyl glycol • Ethyl cellosolve • EGEE	n.a.	01/2011
Level 3	110-49-6	2-Methoxyethyl acetate Other names: • Methyl glycol acetate • Ethylene glycol monomethyl ether acetate • 2-Methoxyethanol acetate • Glycol monomethyl ether acetate • EGMEA • Acetic acid 2-methoxyethyl ester • Methyl cellosolve acetate • 1-Acetoxy-2-methoxy-ethane	n.a.	01/2011
Level 3	111-15-9	2-Ethoxyethyl acetate Other names: • Ethylene glycol monoethyl ether acetate • Ethyl glycol acetate • Acetic acid 2-ethoxyethyl ester • EGEEA	n.a.	01/2011
Level 3	108-90-7	Monochlorobenzene Other names: • Chlorobenzene • Benzene monochloride • Phenyl chloride	n.a.	01/2011
Level 3	1763-23-1/ 45298-90-6	Perfluorooctanesulfonic acid (PFOS)	n.a.	01/2013
Level 3	139-13-9	Nitrilotriacetic acid (NTA)	n.a.	01/2013
Level 3	60-00-4	Ethylene diamine-tetra-acetic acid (EDTA)	n.a.	01/2013
Level 3	95-50-1 541-73-1 106-46-7	Dichlorobenzene: • 1,2-Dichlorobenzene • 1,3-Dichlorobenzene • 1,4-Dichlorobenzenel	n.a.	01/2011
Level 3	79-01-6	Trichloroethylene Other names: • Ethylene trichloride • TCE • Trichloroethene • Tri	n.a.	01/2011

Substances (continued)

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	127-18-4	Tetrachloroethene Other names: • Tetrachloroethylene • Per • Ethylene tetrachloride • Perchloroethylene • Perchloroethene (PCE)	n.a.	01/2011
Level 3	75-09-2	Dichloromethane Other names: • Methylene chloride • Methylene dichloride	n.a.	01/2011
Level 3	n.a.	Volatile fluorinated hydrocarbons	n.a.	01/2011
Level 3	79-46-9	2-Nitropropane Other names: • Dimethylnitromethane • Isonitropropane • 2-NP	n.a.	01/2011
Level 3	67-56-1	Methanol Other names: • Methyl alcohol • Carbinol • Wood spirit • MeOH	n.a.	01/2011
Level 3	n.a.	Aromatic amides	n.a.	01/2011
Level 3	n.a.	Amides	n.a.	01/2011
Level 3	n.a.	Amines	n.a.	01/2011
Level 3	n.a.	Secondary amines	n.a.	01/2011
Level 3	n.a.	Terpenes	n.a.	01/2011
Level 3	110-54-3	n-Hexane	n.a.	01/2011
Level 3	n.a.	Alkylphenol ethoxylates and derivatives	n.a.	01/2011
Level 2	71-43-2	Benzene	< 0.1 %	n.a.
Level 2	108-88-3	Toluene Other names: • Retinaphtha • Methylbenzene • Anisene • Phenylmethane	< 1 %	n.a.
Level 2	1330-20-7	Xylene	< 1 %	n.a.
Level 2	n.a.	Aromatics (above C9)	< 1 %	n.a.
Level 3	n.a.	Halogenated hydrocarbons	n.a.	01/2016

Appendix 6

Nitrosamine

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	924-16-3	N-Nitrosodi-n-butylamine	n.a.	01/2013
Level 3	1116-54-7	N-Nitrosodiethanolamine [(2,2'-Nitrosoimino)-bisethanol]	n.a.	01/2013
Level 3	55-18-5	N-Nitrosodiethylamine	n.a.	01/2013
Level 3	601-77-4	N-Nitrosodiisopropylamine	n.a.	01/2013
Level 3	62-75-9	N-Nitrosodimethylamine	n.a.	01/2013
Level 3	621-64-7	Nitrosodi-n-propylamine	n.a.	01/2013
Level 3	612-64-6	N-Nitrosoethylphenylamine	n.a.	01/2013
Level 3	10595-95-6	N-Nitrosomethylethylamine	n.a.	01/2013
Level 3	614-00-6	N-Nitrosomethylphenylamine	n.a.	01/2013
Level 3	59-89-2	N-Nitrosomorpholine	n.a.	01/2013
Level 3	100-75-4	N-Nitrosopiperidine	n.a.	01/2013
Level 3	930-55-2	N-Nitrosopyrrolidine	n.a.	01/2013

Appendix 7

Phthalates and other plasticizers

Classification	CAS number	Designation	Concentration	Date bans come into force
Level 3	117-81-7	Di-(2-ethylhexyl)phthalate (DEHP)	n.a.	01/2011
Level 3	84-74-2	Di-n-butyl phthalate (DBP)	n.a.	01/2011
Level 3	85-68-7	Butyl benzyl phthalate (BBP)	n.a.	01/2011
Level 3	28553-12-0	Diisononyl phthalate (technical) (DINP)	n.a.	01/2011
Level 3	68515-48-0	Diisononyl phthalate (technical) (DINP)	n.a.	01/2011
Level 3	26761-40-0	Diisodecyl phthalate (technical) (DIDP)	n.a.	01/2011
Level 3	68515-49-1	Diisodecyl phthalate (technical) (DIDP)	n.a.	01/2011
Level 3	n.a.	Chlorinated naphthalenes	n.a.	01/2011
Level 3	n.a.	Chlorinated paraffins	n.a.	01/2011
Level 3	n.a.	Monocresyl phosphate	n.a.	01/2011
Level 3	1330-78-5	Tricresyl phosphate (isomer mixture)	n.a.	01/2011
Level 3	26444-49-5	Monocresyl diphenyl phosphate	n.a.	01/2011
Level 3	n.a.	Chlorinated polyaromates	n.a.	07/2013

Terminology & definitions. **Glossary.**

The glossary explains terms and definitions contained in the Heidelberg catalog of criteria for Saphira Eco consumables. It also helps make the texts and tables easy to understand.

2-Propanol	2-Propanol, also known as isopropyl alcohol or isopropanol (IPA for short), is the simplest non-cyclical secondary alcohol. Isopropanol is a colorless, volatile, and flammable liquid with a pleasant, slightly sweet odor that can, however, become acrid if inhaled in large quantities.
Austrian environmental label	Gives consumers the information they need for making environmentally friendly purchasing decisions. This certificate is awarded by the Austrian state for the use of eco-friendly procedures. It is awarded in three categories – products, tourism, and education – and has been in use for 20 years. For print products, the certificate covers the entire print production process. The guidelines are defined by the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management and the VKI (Austrian Consumers' Association). Applications are made to the VKI. When the label is awarded, a usage fee must be paid. The label can be withdrawn if the guidelines are not observed. These guidelines cover aspects such as paper, offset inks, fountain solutions, finishing operations (glues, wirestitching), and disposal.
Biocides	Biocides are active substances and preparations containing one or more active substances intended to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect on any harmful organism by chemical or biological means. The globally harmonized system of classification and labeling of substances and mixtures attaches greater significance to the risk of sensitization (R43/H317).
Biodegradable	Biodegradable substances/materials can be broken down by micro-organisms or other natural influences. For surfactants in detergents, the biodegradability is defined as follows in Regulation (EC) No. 648/2004: • According to Annex III, Section A of the EC Directive, surfactants in detergents shall be considered as biodegradable if the level of biodegradability (mineralization) measured according to specific tests is at least 60 % within twenty-eight days. The test method must be specified for other substances/materials. OECD 301B (carbon dioxide evolution test): The carbon dioxide produced when the test substance biodegrades is regularly analyzed over a period of twenty-eight days and is an indicator of biodegradability.
CMR	List of substances, activities, and processes that are carcinogenic, mutagenic, or toxic for reproduction. The list can be found in Annex VI Part 3 of Regulation (EC) No. 1272/2008.
Compatibility with machinery	Industry initiatives in the German printing industry have resulted in the definition of test criteria for cleaners and fountain solution additives to ensure that there are no incompatibilities with materials used in the presses, for example swelling and peeling of plastics and elastomers or corrosion of metals. Fogra/MPA certificate: Tests are conducted by Fogra (Fogra Forschungsgesellschaft Druck e.V.) or MPA (Materialprüfungsanstalt Darmstadt) and published on the Fogra website (www.fogra.org).

EcoLogo	EcoLogo is the largest environmental certificate in North America. It was created in 1988 by the Canadian Government and is now an environmental label that is recognized worldwide. The certificate is based very closely on ISO certification and takes into account the entire product life cycle. EcoLogo is part of the Global Ecolabeling Network (GEN). Information is provided on the overall process and the ingredients of inks.
EU Ecolabel	The aim of the EU Ecolabel is to make products greener so as to reduce and/or avoid damage to the environment. The entire manufacturing process is taken into account. Products carrying the label must meet the stipulated criteria. The label provides information on the entire process and on inks, fountain solutions, coatings, and glues.
EuPIA	The European Printing Ink Association (EuPIA) is an association of European ink manufacturers and a sub-organization of CEPE. The manufacturers have voluntarily agreed to a list of ingredients that must no longer be used in inks.
Flash point	The flash point is a safety-related parameter for assessing the risk of fire and explosion of liquids. It defines the lowest temperature of a substance at an air pressure of 1,013 mbar at which a combustible vapor/air mixture can form. Test Methods Regulation (EC) No. 440/2008 lays down in A.9 the approved methods for determining the flash point. Permitted test methods: • Pensky-Martens method (> 50 °C; DIN EN ISO 2719:2003-09, currently standard equipment) • Abel-Pensky method (< 50 °C; DIN EN ISO 1523:2002-08 Corrigendum 2006-11 for non-aqueous petroleum products, DIN EN ISO 3679:2004-06 for aqueous petroleum products, c.c. = closed cup) • Cleveland method (DIN EN ISO 2592:2002-09, open cup) • Marcusson method (DIN 51584, open cup, outmoded method from 1959)
Fogra	Druck e. V. (Fogra Graphic Technology Research Association), Munich
GHS	Globally harmonized system for classifying and labeling chemicals. The new system differentiates between hazard classes and hazard categories. New hazard statements replace the R phrases used to date, while new precautionary statements replace the established S phrases. The system is implemented in the EU through CLP Regulation (EC) No. 1272/2008.
ISO 9001	Quality management standard that enables organizations to demonstrate their ability to supply products that meet the requirements of customers and the authorities. Evidence that the standards have been implemented is provided in the form of a certificate.
ISO 14001	Environmental management standard that lays down globally acknowledged requirements that an environmental management system must satisfy. The aims are to promote environmental protection and to prevent or reduce environmental contamination while also satisfying economic, social, and political requirements. Evidence that the standards have been implemented is provided in the form of a certificate.
Limitations in print quality/ performance	This includes printability and all qualitative requirements that must be satisfied in print.
MPA	Materialprüfungsanstalt (State Materials Testing Institute), Darmstadt University
New Zealand Ecolabel	The New Zealand Ecolabel is based on a voluntary multi-specified ecological recognition process that follows international principles and requirements. It was created in 1989 by the New Zealand government and is constantly evolving and being augmented. It aims to reduce damaging environmental effects in the manufacture of products and to provide consumers with a clear picture of the environmental compatibility of products. The Ecolabel cooperates with other labels that are recognized worldwide and is a member of the Global Ecolabeling Network (GEN). It is one of the three largest labels with the most extensive coverage. The label provides information on the composition of inks.

Nordic Swan	Nordic Swan is the official eco label of the Nordic states. The main goals of the label are to ensure sustainable consumption and to develop a sustainable society. It was founded in 1989 by the Swedish government and now embraces 65 product groups that can be certified. In the field of print products, the entire production process is taken into account. The evaluation process is based on a points system. A certain points total must not be exceeded for the manufacturing process as a whole. Holders of the label must enhance their processes each year to achieve continuous improvement. The label is held for one year at a time. The annual usage fee depends on the quantity of paper bought each year.
PBT/vPvB	A PBT substance is defined by three properties: according to the REACH criteria in Annex XIII of Regulation (EC) No. 1907/2006, it is persistent (P), bioaccumulative (B), and toxic (T). Persistent means that these substances exhibit poor to minimal degradation and therefore have a long life. Neither bacteria nor other environmental factors are able to contribute to any noteworthy degradation over a defined period. Bioaccumulative means that a substance is stored and accumulates within a living organism via the food chain or the surrounding medium (water, soil, air). Toxic means that a substance is poisonous and results in irreversible damage. A vPvB substance is classified as very persistent (vP) due to its longer half-life in water, sediment, and soil, and as very bioaccumulative (vB) due to its greater accumulation in the food chain.
Recycling – recovery	Recycling describes any recovery process that turns waste materials into products, materials, or substances for either the original or other purposes. Paper recycling is particularly important in the printing industry. The EU Waste Directive defines recovery as any process that puts waste to good use, i. e. material or energy recovery.
Safety Data Sheet (SDS)	Safety data sheets for hazardous substances contain information on the potential hazards and safe handling of these substances. Since June 1, 2007, their structure and contents have been defined by the REACH Regulation (EC) No. 1907/2006 (Registration, Evaluation, Authorization, and Restriction of Chemicals). The classification, labeling, and packaging of substances and mixtures are regulated in Europe by implementing the GHS through Regulation (EC) No. 1272/2008.
Use of sustainable resources	Resources are considered sustainable if they can recover or grow back naturally. The key characteristics of the environmental system remain intact.
VOC Europe	Collective term for organic substances containing carbons that are highly volatile and are present in gas form even at low temperatures. Volatile organic compounds are defined differently in different European guidelines. The definition in Regulation 1999/13/EC applies to the “Saphira Eco” catalog of criteria: “Organic compound that has a vapor pressure of 0.01 kPa or higher at 293.15 K.”
VOC U.S.	Every carbon-based chemical compound, excluding carbon monoxide, carbon dioxide, carbonic acid, metal carbides, metal carbonates, and ammonium carbonate, that is involved in photochemical reactions in the atmosphere. Other exceptions are listed in Regulation “40 CFR 51.100”.
Water Hazard Class (WHC)	The Water Hazard Class system is a German system for classifying substances based on the hazard they pose to water. The classification of substances into water hazard classes provides a starting point for taking measures following incidents and describes safety precautions to protect areas of water during the storage, filling, transshipment, and transport of substances that are hazardous to water. The classification is made in line with the German Administrative Regulation on the Classifi-cation of Substances Hazardous to Waters into Water Hazard Classes of May 17, 1999. There are three different classes: • WHC1: Slightly hazardous to water • WHC2: Hazardous to water • WHC3: Highly hazardous to water

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