

The New Zealand Ecolabelling Trust

Licence Criteria for Toner Cartridges **EC-30-05**

The New Zealand Ecolabelling Trust
P.O. Box 56533
Dominion Road
Mt Eden
Auckland
New Zealand

Ph + 64 9 845 3330
Fax + 64 9 845 3331

Email: info@enviro-choice.org.nz
Website: <http://www.enviro-choice.org.nz>

1. INTRODUCTION

The New Zealand Ecolabelling Trust is an environmental labelling programme that has been created to help consumers find products that ease the burden on the environment. The programme results from a New Zealand Government initiative and has been established to improve the quality of the environment by minimising the adverse environmental impacts generated by the production, distribution, use and disposal of products.

The New Zealand Ecolabelling Trust Board is pleased to publish this specification for Toner Cartridges. This specification sets out the requirements that Toner Cartridges will be required to meet in order to be licensed to use the Environmental Choice New Zealand (ECNZ) Label. The requirements include environmental criteria and product characteristics. The specification also defines the testing and other means to be used to verify conformance with the environmental criteria and product characteristics.

The development of this specification has taken account of issues and information about minimising waste and the use of substances harmful to the environment, energy management and packaging. It has also drawn on common core criteria prepared by the Thailand Environment Institute for the Global Ecolabelling Network (GEN), and on environmental labelling specifications published by other members of GEN such as the Japanese Eco-Mark programme, as well as supporting technical work on environmental and life cycle issues that has been completed. In assessing applications for ECNZ licences, consideration will be given to eco-labelling licences granted to the same products by other GEN members. However, the intention with respect to toner ingredients is that these should be used in accordance with New Zealand's Hazardous Substances and New Organisms Act 1996 (HSNO).

As a member of the Global Ecolabelling Network, Environmental Choice New Zealand is working with other members to harmonise specifications for environmental labels, while still appropriately reflecting local environmental and life cycle issues. In preparing this specification, input was also invited from interested parties from industry, regulators, environmental and consumer groups in New Zealand, and through a formal notification and consultation period of sixty days.

This specification is valid for a period of five years. Twelve months before the expiry date (or at an earlier date if required), a further review process for the specification will be initiated. Existing licensees will have a one-year period to comply with any new specification requirements.

2. BACKGROUND

Most laser printers and other computer printers, as well as some copying machines, fax machines and multifunctional devices use toner cartridges. The main contents of these cartridges include a toner container filled with toner, a drum and/or a developing unit. These units may be separable or non-separable.

During manufacture and use, the toner cartridge may have environmental impacts from heavy metals contained in the toner, which may have a severe effect on human health.

Toner cartridges can also have considerable environmental impact after use. Generally, toner cartridges have been regarded as disposable. As the demand for office automation has increased, the adverse environmental impact generated by toner cartridge consumption and disposal has become a serious problem. Using cartridges several times (e.g. by re-manufacturing used cartridges) reduces the total consumption of cartridges and accordingly, the environmental impact of the product throughout its life cycle. In this regard, re-cycling and re-use of disposed toner cartridges reduces waste generation and conserves resources.

Packaging of toner cartridges also has environmental impacts, depending upon the type of packaging used and disposal options. Reducing, reusing and/or recycling packaging will conserve valuable resources and reduce the volume of packaging entering the waste stream.

Based on a review of currently available environmental information, including Life Cycle information

and overseas eco-labelling criteria, the following product category requirements have been developed. These criteria will produce environmental benefits through the reduction in resource use, use of hazardous substances and minimising waste, including packaging waste. Of particular importance are the criteria which remove potential obstacles to re-manufacturing of cartridges.

The majority of these criteria are based on the Common Core Criteria for Toner Cartridges (April 2003) report, prepared by the Thailand Environmental Institute for the Global Eco-labelling Network (GEN). These criteria have, where necessary, been adapted for the New Zealand market and regulatory environment.

3. INTERPRETATION

Device refers to the appliance (e.g. laser printers, computer printers, copying machines, fax machines or multi-functional copiers) in which a toner cartridge is designed to be used.

Original toner cartridge is a cartridge manufactured by the manufacturer of the device in which it is designed to be used, or under contract to the device manufacturer.

Remanufactured toner cartridge means a cartridge that is assembled from cleaned, inspected and qualified new and used parts, and filled with new toner.

Toner cartridge is a container filled with toner and a drum and/or developing unit (separable or non-separable), used in laser printers, computer printers, copying machines, fax machines or multi-functional copiers. It should be noted that for certain types of toner cartridge, the drum might be a separate unit.

4. CATEGORY DEFINITION

This category includes the following products:

- Original toner cartridges (monochrome and colour);
- Remanufactured toner cartridges (monochrome and colour);

To be licensed to use the Label, a toner cartridge must meet all of the criteria set out in clause 5 and the product characteristics set out in clause 9. In addition, original toner cartridges must also meet all of the criteria set out in Clause 6, remanufactured cartridges must meet all of the criteria set out in Clause 7, and colour toner cartridges must meet all of the criteria set out in Clause 8.

5. ENVIRONMENTAL CRITERIA FOR ALL CARTRIDGE TYPES

5.1 Legal Requirements

Criteria

The product must comply with the provisions of all relevant laws and regulations that are applicable during the product's life cycle.

Verification Required

Conformance with this requirement shall be demonstrated by providing a written statement on regulatory compliance, signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported by documentation identifying the applicable regulatory requirements and demonstrating how compliance is monitored and maintained.

Explanatory Notes

Relevant laws and regulations could, for example, include those that relate to:

- ♦ producing, sourcing, transporting, handling and storing raw materials and components for manufacture
- ♦ manufacturing processes
- ♦ handling, transporting and disposing of waste products arising from manufacturing

- ◆ transporting product within and between countries
- ◆ using and disposing of the product.

The documentation required may include, as appropriate:

- ◆ procedures for approving and monitoring suppliers and supplies
- ◆ information provided to customers and contractors regarding regulatory requirements.

It is not intended to require licence holders to accept increased legal responsibility or liability for actions that are outside their control.

In New Zealand, the key regulatory requirements for the management of hazardous substances are set out in the Hazardous Substances and New Organisms (HSNO) Act 1996. On July 2001, the HSNO Act came into effect for hazardous substances, supported by a number of new regulations. These regulations define what makes a substance hazardous, assign various categories describing various levels of hazard and provide for a range of controls to manage hazardous substances, e.g. labelling and packaging controls, emergency management and disposal controls and other controls such as setting environmental exposure limits (EELs) and tolerable exposure limits (TELEs).

Substances that were legally present in New Zealand prior to 2 July 2001 will progressively be transferred to the HSNO regime over a 3-5 year period (transitional period). Until a substance is transferred, it will remain under the control of its predecessor legislation (e.g. the Toxic Substances Act and Regulations, the Dangerous Goods Act and Regulations, the Pesticides Act and Regulations), as provided for in the transitional provisions of the HSNO Act. Environmental Choice New Zealand will monitor the transition process and any need to review this specification document. Environmental Choice Licence assessments will be based on the relevant requirements applicable at the time of the assessment.

Other relevant New Zealand legislation includes the Resource Management Act 1991.

5.2 Heavy metals in toner

Criteria

Mercury, lead, cadmium or chromium (VI) shall not be used as constituent parts of the toner.

Verification

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported with formulation and ingredient information including safety data sheets for all ingredients.

5.3 Hazardous substances in toner

The following substances shall not be used as constituent parts of the toner:

- i) Any ingredient that is classified or may be¹ classified under the Hazardous Substances and New Organisms Act 1996 and the Hazardous Substances (Classification) Regulations 2001 as:
 - a. 6.1A, 6.1B or 6.1C (acutely toxic),
 - b. 6.7A (toxic - carcinogen), or
 - c. 9.1A and with acute ecotoxicity less than 0.1 mg/L;
- ii) More than 0.1% (by weight) of any ingredient that is classified or may be classified under the Hazardous Substances and New Organisms Act 1996 and the Hazardous Substances (Classification) Regulations 2001 as 6.1D or 6.1E (acutely toxic), 6.6A (toxic - mutagen) or 6.8 (toxic - reproductive/developmental);

¹ See note in 5.1 regarding transfer of substances under HSNO. The wording of 5.3 (i) to (iv) provides for substances that may not currently be in New Zealand, or are in the process of being transferred under HSNO.

- iii) More than 1% (by weight) of any ingredient that is classified or may be classified under the Hazardous Substances and New Organisms Act 1996 and the Hazardous Substances (Classification) Regulations 2001 as 6.5B (toxic – sensitizing), 6.6B (toxic – mutagen), 9.1A or 9.1B (both ecotoxic – aquatic);
- iv) More than 5% (by weight) in total of ingredients that are classified or may be classified under the Hazardous Substances and New Organisms Act 1996 and the Hazardous Substances (Classification) Regulations 2001 as 9.1C (ecotoxic – aquatic);
- vi) Any ingredient which is on the EU list of substances that cause endocrine disruption, class 1 or 2 (see Appendix C);
- vii) Any ingredient which is classified as carcinogenic (Group 1, 2A and 2B) in the recommendation on allowable concentration by IARC (International Agency for Research on Cancer).

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported with formulation and ingredient information including safety data sheets for all ingredients.

Additional supporting documentation about quality control and production processes may also be required to demonstrate that compliance with the requirement is checked and consistently achieved.

5.4 Energy Management

Criteria

The toner cartridge manufacturer/ re-manufacturer must have effective energy management policies and procedures and/or an energy management programme.

Verification

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be accompanied with relevant documentation and records of policies, procedures and programmes.

Explanation

Energy policies, procedures and programmes could be based on the ten key principles as outlined in Energy Efficiency and Conservation Authority's Energywise Companies Campaign Charter of Key Principles or equivalent (see Appendix A).

Intention

New Zealand's first National Energy Efficiency and Conservation Strategy was released by the Minister of Energy on 27 September 2001. The Strategy was prepared as a requirement of the Energy Efficiency and Conservation Act 2000. As required by the Act, the Strategy is organised around policies, objectives and targets, supported by a set of means (or measures).

The Strategy's purpose is to promote energy efficiency, energy conservation and renewable energy, and move New Zealand towards a sustainable energy future. Environmental Choice will continue to review and revise Energy criteria to align them, as appropriate, with the national strategy.

5.5 Packaging

Criteria

Material used in packaging shall not contain PVC and halogenated plastics. CFCs and HCFCs shall not be used in the production of packaging.

Paper, fibreboard and corrugate material used in packaging shall contain at least 50% post-consumer recycled pulp.

Verification

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be accompanied by a certificate from the producer(s) of packaging materials or from the packaging manufacturer(s).

5.6 Take-back System

Criteria

The applicant or applicant's agent shall provide an effective waste management system, which includes a system to carry out recovery and re-use of used toner cartridges, and a system to record quantities of cartridges sold to and taken back from consumers and the proportions re-manufactured and re-cycled. The system shall comprise one or more of the following measures:

- A deposit or reimbursement system
- Pre-paid address labels
- Agreements between manufacturers, distributors, retailers, collection contractors and/or re-manufacturers.

The Applicant shall demonstrate that the take-back system shall be easy for the consumer to use, such that it encourages recovery of used cartridges and discourages disposal of used cartridges.

The system shall ensure that residual materials which are not suitable for re-use or recycling are disposed in an environmentally responsible manner.

Verification Required

Conformance with these requirements shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported by information on the collection, re-use and re-cycling systems.

5.7 Consumer Information

Criteria

The following information shall be provided either on the product package, or in a manual, in such a way to be clearly visible for consumers:

- Proper procedure for use
- Toner cartridge recovery method for users to return used cartridges
- Post-sale service for consumers and contact numbers

External packaging shall include a list of device make and model numbers in which the cartridge can be used.

Verification Required

Conformance with these requirements shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported with samples and/or photographs of labels and packaging. Additional supporting documentation about quality control and labelling processes may also be required to demonstrate that compliance with these requirements is checked and consistently achieved.

6. ENVIRONMENTAL CRITERIA FOR ORIGINAL CARTRIDGES

6.1 Heavy metals in photoreceptors

Criteria

Photoreceptors used in the product shall not contain cadmium, lead, mercury or selenium as constituent parts.

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported with formulation and ingredient information including ingredient lists. Test reports may be required.

6.2 Plastic additives

Criteria

Cadmium, lead or mercury shall not be used, except in electrical or electronic components and wires.

Polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) or chlorinated paraffins are not to be used in plastics.

Verification Required

The Applicant shall prove compliance with these requirements by submitting a report on materials used, issued by the manufacturer/supplier of plastic materials.

Note

The New Zealand Ecolabelling Trust intends to monitor the use of recycled plastic in toner cartridge components, with the intention of adding a criterion requiring a minimum recycled plastic content to a future revision of these licence criteria.

6.3 Ease of re-use/re-cycling

Criteria

The following requirements must be fulfilled to ensure that the product may be easily re-used:

- a) Modules must be easily separable by hand or with standard tools.
- b) Non-separable joints such as glued or welded joints between different materials may not be used (for case parts and chassis).
- c) Plastic parts of the cartridge casing shall be made of a single homo/co-polymer or polymer blend.
- d) Labels/markings/stickers must be made of the same material as the part to which they are affixed, or be made from a compatible material which does not preclude re-cycling, or be easily separable from that part.
- e) Plastic parts greater than 25 g in weight and with smooth area greater than 200 mm² shall be marked with plastic resin codes in accordance with ISO 11469:2000 (Appendix B).
- f) Integrated circuit chips or other devices or designs shall not be installed or implemented to prevent disassembly or re-use.
- g) Suppliers or manufacturers must not place or attempt to place physical, contractual, or legal restrictions upon repair or re-manufacture of cartridges by third parties.

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported by samples of products and/or documentation from manufacturers of cartridges or their components.

7. ENVIRONMENTAL CRITERIA FOR RE-MANUFACTURED CARTRIDGES

7.1 CFC Use

Criteria

CFCs or chlorinated organic solvents shall not be used in the washing process.

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. On-site audit may be carried out.

7.2 Materials in replacement parts

Replacement parts which have not been recovered from used toner cartridges shall comply with the materials criteria for Original Cartridges, as set out in 6.1 and 6.2 above.

7.3 Printing Capacity and Quality

Criteria

Printing capacity shall not be less than 90% of the original model.

Each cartridge should be tested for correct operation before delivery. Each cartridge type and grade submitted should be randomly tested on an annual basis using ASTM F 1856 and ASTM F 2036 or ISO/IEC 19752 or equivalent test, against original cartridges of the same type. Data obtained from these tests must be retained and available for inspection by ECNZ or its agents at any reasonable time.

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This shall be supported by test results. When the test method does not include calculation of print capacity, this shall be calculated using the following formula, applied to both original and re-manufactured cartridges:

$$PC = (M1-M2)/(M1-M3) \times 100$$

Where:

- PC = Printing Capacity
- M1 = Weight of new cartridge
- M2 = Weight of cartridge after use
- M3 = Weight of cartridge after printing 100 pages of A4 paper at 5% coverage

7.4 Labelling and Warranties

Criteria

Labelling shall indicate the re-manufacturing company's brand or company name, contact details.

Products shall be accompanied by a warranty which shall provide for replacement, repair or refund of the purchase price of defective cartridges. Warranties shall also provide for repair or replacement of the device in which the cartridge is used, should the device be proven to have been damaged by the re-manufactured cartridge.

Warranty information shall be in legible-sized print and be in the English language.

Verification Required

The Applicant shall prove compliance by submitting a copy of labels or samples of the product, and copies of warranty information provided with the product.

8. ADDITIONAL CRITERIA FOR ORIGINAL AND RE-MANUFACTURED COLOUR CARTRIDGES

8.1 Use of azo-colorants

Criteria

The following azo-colorants (dyes or pigments) shall not be used in toner formulations.

Name	CAS No.
4-aminodiphenyl	92-67-1
4-aminoazobenzene	60-09-3
Benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-chloroaniline	106-47-8
2,4-diaminoanisole	615-05-4
4,4'-diaminodiphenylmethane	107-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
p-cresidine	120-71-8
4,4'-methylene-bis-(2-chloroaniline)	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
2,4-toluidinediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidine	90-04-0

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This shall be supported by a declaration from the colorant and/or toner supplier/s.

9. PRODUCT CHARACTERISTICS

9.1 Product Performance

Criteria

The toner cartridge must be fit for purpose.

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an appropriate official of the applicant company. This statement shall be supported with documentation about, and records of, relevant independent or 'in house' performance tests.

Performance criteria and test procedures may be based on, or equivalent to, those set out in Nordic Ecolabelling criteria version 3.4 ("Ecolabelling of Toner Cartridges 22 April 1999 – 11 April 2007"). These criteria are available at <http://www.svanen.nu/DocEng/008e.pdf>. An alternative set of performance criteria is available in Section 3.5 (4) of the Common Core Criteria for Toner Cartridges (April 2003) report, prepared by the Thailand Environmental Institute for the Global Eco-labelling Network (GEN). These criteria can be found at http://www.gen.gr.jp/pdf/tech_030522_03.pdf.

Note: additional performance and testing criteria for re-manufactured cartridges are set out in Section 7.2 above.

10. REQUIREMENTS AND NOTES FOR ENVIRONMENTAL CHOICE LICENCE HOLDERS

Monitoring Compliance

Prior to granting a licence, Environmental Choice will prepare a plan for monitoring ongoing compliance with these requirements. This plan will reflect the number and type of products covered by the licence and the level of sampling appropriate to provide confidence in ongoing compliance with criteria. This plan will be discussed with the licence applicant and when agreed will be a condition of the licence.

As part of the plan, Environmental Choice will require access to relevant quality control and production records and the right of access to production facilities. Relevant records may include formal quality management or environmental management system documentation (for example, ISO 9000 or ISO 14001 or similar).

The monitoring plan will require the licence holder to advise Environmental Choice immediately of any non-compliance with any requirements of this specification which may occur during the term of the licence. If non-compliance occurs, the licence may be suspended or terminated as stipulated in the Licence Conditions. The licensee may appeal any such suspension.

Environmental Choice New Zealand will maintain the confidentiality of identified confidential information provided and accessed during verification and monitoring of licences.

Using the Environmental Choice Label

The Label may appear on the wholesale and retail packaging for the product, provided that the product meets the requirements in this specification and in the Licence Conditions.

Wherever it appears, the Label must be accompanied by the words "Toner Cartridges" and by the Licence Number e.g. "Licence No. 1234".

The Label must be reproduced in accordance with the Environmental Choice programmes keyline art for reproduction of the Label and the Licence Conditions.

Any advertising must conform to the relevant requirements in this specification, in the Licence Conditions and in the keyline art.

Failure to meet these requirements for using the Environmental Choice Label and advertising could result in the Licence being withdrawn.

APPENDIX A

ENERGY MANAGEMENT

Companies must have effective energy management policies and procedures and/or an energy management programme based on the following key principles.

EnergyWise Companies Campaign - Charter of Key Principles

1. Establish a corporate policy on energy efficiency
2. Establish accountability for energy management
3. Set targets for improved energy performance
4. Monitor and evaluate energy usage levels
5. Hold regular energy performance reviews
6. Improve awareness of energy efficiency among employees
7. Incorporate energy management into wider business or quality improvement processes
8. Consider economic investment opportunities in energy efficiency
9. Ensure energy efficiency considerations are taken into account in major (new or retrofit) building and factory construction projects
10. Report energy performance changes and improvements to employees and, where appropriate, shareholders

The Energywise Companies Campaign is run under the auspices of the Energy Efficiency and Conservation Authority (EECA).

For further on the Energywise Companies Campaign contact:

EECA

Tel (04) 470 2200

Website www.eeca.govt.nz

APPENDIX B

PLASTIC RESIN IDENTIFICATION CODES

	TYPE OF PLASTIC	CHARACTERISTICS	APPLICATIONS
	Polyethylene Terephthalate PET	Clear, tough, solvent resistant, often used as a fibre	Carbonated soft drink bottles, pillow and sleeping bag filling, textile fibres
	High Density Polyethylene HDPE	Hard to semi-flexible, waxy surface, opaque, melts at 135°C	Crinkly shopping bags, freezer bags, milk bottles, bleach bottles, buckets, rigid agricultural pipe, milk crates
	Unplasticised Polyvinyl Chloride UPVC	Hard, rigid, can be clear, can be solvent welded	Electrical conduit, plumbing pipes and fittings, blister packs, wall cladding, roof sheeting, bottles
	Plasticised Polyvinyl Chloride PPVC	Flexible, clear, elastic, can be solvent welded	Garden hose, shoe soles, cable sheathing, blood bags and tubing, watch straps
	Low density Polyethylene LDPE	Soft, flexible, waxy surface, translucent, melts at 80°C, scratches easily	Garbage bags, squeeze bottles, black irrigation tube, black mulch film, garbage bins
	Polypropylene PP	Hard but still flexible, waxy surface, melts at 145°C, translucent, withstands solvents. Very versatile material with many applications	Potato crisp bags, drinking straws, microwave ware, plastic kettles, plastic garden settings, baby baths, plastic hinged lunch boxes
	Polystyrene PS	Clear, glassy, rigid, brittle, opaque, semi-tough, melts at 95°C. Affected by fats and solvents	Plastic cutlery, imitation 'crystal glassware', low cost brittle toys, video cases
	Expanded Polystyrene EPS	Foamed, light weight, energy absorbing, heat insulating	Foamed polystyrene hot drink cups, hamburger take-away clamshells, foamed meat trays, protective packaging for fragile items
	Includes all other resins and multi materials (eg: laminates). Examples are polyamide, acrylonitrile butadiene styrene (ABS), acrylic, nylon, polyurethane (PU) and phenolics		

For further information on the plastic resin identification code contact:

The Secretary,
PEAC
PO Box 76-378
Manukau City, Auckland, NEW ZEALAND

Ph: 64-9-262 3773 Fax: 64-9-262 3850
Email: peac@plastics.org.nz

APPENDIX C

SUBSTANCES CAUSING ENDOCRINE DISRUPTION

The following substances are considered to cause endocrine disruption in accordance with the EU list of substances causing endocrine disruption classes 1 and 2 and also found on the INCI list. This list is flexible, and may be extended by the addition of new substances during the validity period of the specification.

Substance	CAS No.
Styrene = ethylbenzene	100-42-5
Butylbenzylphthalate (BBP) = Benzylbutyl-1,2-benzenedicarboxylate	85-68-7
Di-(2-ethylhexyl)phthalate (DEHP) = Di-(2-ethylhexyl)-1,2-benzenedicarboxylate	117-81-7
Di-n-butylphthalate (DBP) = Dibutyl-1,2-benzenedicarboxylate	84-74-2
2,2-bis(4-hydroxyphenyl)-propane = Bisphenol A	80-05-7
Resorcinol = 1,3-Benzenediol	108-46-3
4-chloro-3-methylphenol	59-50-7
Diisodecyl phthalate (DiisoDP) = Diisodecyl-1,2-benzenedicarboxylate	26761-40-0
Diisononyl phthalate (DINP) = Diisononyl-1,2-benzenedicarboxylate	28553-12-0
Ortho-phenylphenol (OPP)	90-43-7