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WORKSHOP REPORT ON CONSIDERATION OF CHEMICAL SAFETY IN GREEN PROCUREMENT

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WORKSHOP REPORT ON CONSIDERATION OF CHEMICAL SAFETY IN GREEN PROCUREMENT

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The Inter-Organisation Programme for the Sound Management of Chemicals (IOMC) was established in 1995 following recommendations made by the 1992 UN Conference on Environment and Development to strengthen co-operation and increase international co-ordination in the field of chemical safety. The participating organisations are FAO, ILO, OECD, UNEP, UNIDO, UNITAR and WHO. The World Bank and UNDP are observers. The purpose of the IOMC is to promote co-ordination of the policies and activities pursued by the Participating Organisations, jointly or separately, to achieve the sound management of chemicals in relation to human health and the environment.

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FOREWORD

The OECD workshop *Consideration of Chemical Safety in Green Procurement* was held in Seoul (Korea) on 8-10 November 2005. It was prepared by the Issue Team on Chemical Product Policy and hosted by the Korea Ministry of Environment and the Korea Environment Institute.

On the basis of examples of existing product categories and criteria for selecting products within product categories, the workshop identified differences and commonalities of safety-related factors/criteria for choosing product categories, and for selecting products within product categories. The workshop also identified:

- Barriers to consideration of chemical safety in green procurement and solutions to overcome these barriers;
- Steps that should be taken prior to developing common criteria for selecting products within product categories;
- Needs for further work for encouraging chemical safety consideration in green procurement. (However, time was too limited to further develop proposals for future work)

Considering that information on existing product categories and criteria, as included in the annexes, could be used by any government or industry willing to consider chemical safety in green procurement, the 39th Joint Meeting agreed on the declassification of the workshop report.

This document is published on the responsibility of the Joint Meeting of the Chemicals Group and Management Committee of the Special Programme on the Control of Chemicals of the OECD.

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INTRODUCTION

1. Many chemicals are used to produce hundreds of thousands of different goods, from cars and computers to synthetic fabrics, kitchen appliances and paints.

2. Through green procurement (GP) it is possible to reduce risks that arise from the use of chemical products by encouraging the use of chemical products which have low impact on human health and the environment throughout their life cycle, and discouraging the use of chemical products with a high impact. However, given the large number and variety of available chemical products and the differing priorities of product users, it is challenging to compare and select products for green procurement.

3. It is recognized that chemical safety is only part of environmental considerations for decision making for green public procurement, in addition to considerations such as recyclability, natural resource and energy savings; economic factors should also be taken into account. Even though, ideally, chemical safety should be considered for all product categories, it is more important for some product categories than for others due to human or environmental exposure. It should also be noted that consideration of chemical safety in green private procurement is very important to avoid trade barriers, given that chemicals regulations differ depending on countries.

4. This document reports on the outcome of the workshop "*Consideration of Chemical Safety in Green Procurement"* that was endorsed as a new project under the OECD work related to Chemical Product Policy (CPP) at the 38th Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology (July 2005). **Annex I** provides a short CPP background.

Workshop objectives

5. The workshop was held to

- Overview examples of existing product categories with chemical criteria (e.g., adhesives), and to explore factors affecting choices of products categories with chemical criteria;
- Overview examples of existing criteria used by countries and companies for selecting products within product categories (e.g., adhesives with VOC content < 1%), based on chemical safety;
- Identify differences and commonalities of the criteria;
- Identify barriers to chemical safety consideration in green procurement;
- Make recommendations to facilitate consideration of chemical safety in green procurement, and
- Identify further work, as appropriate.

Working definitions

6. For the purposes of the workshop,

- Consideration of chemical safety refers to consideration of hazards of chemical products and of human and environment exposure resulting from their production, use, storage, transport and disposal;
- "(Chemical) product" means a mixture of chemicals or an article;
- "Green Procurement" means supply and purchase policies, for which chemical safety consideration is applied in public and private procurement decision-making.

Workshop preparation

7. The workshop was prepared by an Issue Team including Japan, Korea, Sweden (initially), the United States and BIAC. In order to avoid work duplication, the Issue Team first considered past and ongoing OECD activities related to green procurement (See **Annex 2**) and identified links with other activities such as Eco-labels, Self-declaration of substances and Eco-partnership.

8. To prepare the workshop, two questionnaires, focusing on chemical safety in public and private procurement, have been sent to member countries and companies (See **Annex 3** and **Annex 4**). On the basis of the responses to the questionnaires and of a Web search, a background document including an initial structured compilation of existing approaches/criteria for consideration of chemical safety in green procurement was prepared by Korea, and reviewed by the Issue Team.

THE SEOUL WORKSHOP PROGRESSION

9. The OECD workshop *Consideration of Chemical Safety in Green Procurement* was held in Seoul from 8th to 10th November 2005. Forty eight participants, including representatives from ministries, administrations and other public institutions from 5 countries (representing the regions of Asia, North America and Europe), representatives from companies that produce end user mixtures and from companies that produce articles and components for articles, attended the workshop. Mr. Yong-Hwa Kim chaired the workshop. The Participants List and Agenda can be found in **Annex 5** and **Annex 6**, respectively. The workshop was hosted by the Ministry of Environment and Korea Environment Institute, and sponsored by the Korea Eco-products Institute and the Korea Chemicals Management Association.

10. Mr. Jae-Young Ko, Deputy Minister for Environmental Policy, welcomed the participants. Ms Laurence Musset, from the OECD Secretariat, introduced the background and issues, and the Chairperson opened the discussions. The first day focused on public green procurement, while the second day focused on private green procurement. During these two days, presentations of existing approaches were given in the morning followed by questions about these presentations. The presentations included (i) examples of product categories that are currently included in green procurement due to consideration of chemical safety and factors affecting choices of these product categories, (ii) examples of products within categories that are currently selected on the basis of chemical safety, and criteria used for selecting these products.

11. Together with the background document, these presentations laid the foundation for breakout session discussions in the afternoon. At the end of the breakout sessions, preliminary conclusions were presented at the plenary sessions. Some observers from Korea only attended the plenary sessions.

12. The questions for the breakout sessions were:

- What are the barriers to implement chemical safety consideration in green public procurement?
- What are the barriers to implement chemical safety consideration in green private procurement?
- What are the solutions to overcome these barriers?
- Do you have comments on the examples of product categories, factors, criteria and sectorial approach included in the background document?
- What are the differences and commonalities of the criteria?
- Is it feasible to develop guidance/ common factors for choosing product categories and criteria for selecting products within product categories?
- Is there a need for further work for facilitating and encouraging chemical safety consideration in green procurement for public and private sector?

13. These questions were discussed in two parallel breakout groups at the three breakout sessions. Due to the limit of time, it was not possible to discuss at length all questions and the breakout groups focused on the first three questions. After the conclusion of each breakout session, the participants reconvened in the plenary to hear and discuss the summaries of the breakout session outcomes. At the end of the second workshop day, the Secretariat explained what the structure of the workshop report would be and which annexes would be added to the report.

14. On the last day, the workshop discussed recommendations for facilitating consideration of chemical safety in green procurement. The workshop then reviewed and adopted the conclusions and recommendations as presented below.

15. The Chairperson and the Secretariat thanked the hosts for their large support and contributions towards the success of the meeting.

WORKSHOP CONCLUSIONS AND RECOMMENDATIONS

- ***Identification of barriers to consideration of chemical safety in green procurement and solutions to overcome these barriers***

16. The workshop identified several barriers to consideration of chemical safety in green public procurement and some solutions to overcome these barriers (See **Table 1**). It also identified several barriers and some solutions to overcome the barriers to consideration of chemical safety in private green procurement (see **Table 2**). Question marks indicate that no solution was identified.

Table 1. Identification of barriers to consideration of chemical safety in green public procurement and solutions to overcome these barriers

Barriers	Solutions
1. Lack of Information	- Improve linkages among databases (e.g. IUCLID) and GHS criteria; - Inventory of databases; Use existing databases; - Consider possibility of portal site; - Develop case studies (Cost-Benefit Analysis, Life Cycle Analysis); - Ask OECD if existing risk communication work can be applied to products.
2. Technical limitation or feasibility	- Develop technology guidance and give recognition for meeting those guidance; - Technology procurement[1] can give economic incentives and help put new green alternatives on the market; - R&D to overcome technical limitations.
3. Lack of financial resources	?
4. Lack of economic incentives	- Awards; Focus existing label system more on chemical safety.
5. Institutional Barriers	- Develop guidelines or how to consider chemical safety without raising trade barriers; - Hold regular workshops to benchmark and develop new approaches; - Distinction should be made between procurement officers and users. Procurement officers are experts on the legal requirements for procurement, but may need education on chemical safety. Users are concerned of the function of the product. Education is important for both users and procurement officers and tailored approaches may be necessary.

[1] *The idea of "Technology Procurement" is that buyers, or groups of buyers, can by formulating technical specifications challenge companies to go beyond the current best available technologies. The industry then knows that if it produces such products it has better chances of winning relevant contracts.

6. Manufacturers' inertia and User/Supplier inertia	- Develop education materials and strategy for deploying campaign
7. Lack of Testing Laboratory and Methodology	?
8. Lack of practical tools	- Work with existing organizations that have these issues within their mission e.g. SETAC (LCA), OECD (Test-methods guidelines)
9. Institutional inertia of procurement	Refer to 6.
10. Expectations of users and procurement officers	- Conduct demonstration programs on the use of newer/greener technology

Table 2. Identification of barriers to consideration of chemical safety in green private procurement and solutions to overcome these barriers

Barriers	**Solutions**
1. Lack of motivation	- Develop strategy for encouraging partnership between governments and industry, and among companies in a supply chain; - Fast track (e.g. sustainable furniture); - Economic incentives; - Legal requirements; - Consumer demand.
2. SME knowledge limitations	- Education, and focused political – regulatory tools and encourage business mentoring; - Defining "green"; - Marketing green products; - Information access, sharing.
3. Green chemicals, technologies	?
4. Tangible benefits understood by consumers	- Education
5. Loss of market share	- Education
6. Effective use of LCA info by consumers	- Education
7. Confidential Business Information./Trade secret	?

8. CEO commitment	- Focus on standards, audits, sustainability, corporate social responsibility
9. Financial, Cultural & Structural Barriers (esp. for SMEs)	- Refer to 2.
10. Reputation benefits unevenly distributed	- Review accreditation schemes to ensure widespread benefits
11. Lack of mutual acceptance of information within private sector	?
12. Lack of cooperation from retail sector	- Explore/encourage better relationship with retail sector

- ***Examples of product categories and criteria for selecting products within product categories***

17. In the responses to the questionnaire that was sent to governments before the workshop, twenty-six current product categories with chemical criteria have been identified. The product categories and the factors for choosing product categories, as included in **Annex 7,** and the criteria for selecting products within product categories, as included in **Annex 8**, provide an overview of the different existing product categories, factors and criteria. The product categories and factors for using product categories, as included in **Annex 9,** and the criteria for selecting products within product categories, as included in **Annex 10,** are examples of consideration of chemical safety in private green procurement.

18. Similar approaches can be used by any government or company willing to consider chemical safety in private green procurement. The workshop added the availability of substitutes as a factor for choosing product categories in private green procurement. It was also pointed out that choosing product categories or selecting product within product categories produces market changes.

- ***Sectorial approaches***

19. The workshop briefly addressed sectorial approaches, in particular the building sector approach (see **Annex 11** for information sources), and agreed that such approaches may highlight specific considerations (*e.g.*, for the building sector, release of hazardous chemicals from building materials is all the more important because thermal isolation increase indoor pollution); further more, grouping criteria for all materials/equipments in a given sector would save time for those who are responsible for decision making with respect to green procurement. Concern was expressed that it might be difficult to consider chemical safety of part of a building, given that public procurement would apply to the whole building. The health sector, the automobile sector and the electronics sector were identified as other important sectors that would benefit from a sectorial approach.

- ***Identification of differences and commonalities of safety-related factors/criteria for choosing product categories and selecting products in public green procurement***

20. Factors for choosing product categories and criteria for selecting product within product categories are different, depending on each country, or each company. For public green procurement, the most common product categories are office furniture, fluorescent lamps, paints, toner cartridges, adhesives, detergents, cleaners, toilet papers and printing inks. There is no systematic approaches for identifying product categories in green procurement; however, important factors for choosing product categories are volume (procurement or domestic use volume), environmental impacts/issues, content/properties of substances, available alternatives, possibility of exposure, marketability, users' safety, sound quality control, cost appropriateness, and criteria development aspect, avoiding misunderstanding information to the consumer, potential of expanding market share and stakeholders.

21. From the responses to the questionnaires, it appears that chemical criteria, used to select product within product category, are often related to heavy metals, halogens or halogen compound, polymers, flame retardants, azo dyestuff, VOCs, substances classified as hazardous for humans or the environment (*e.g.*, carcinogenicity, mutagenicity, reproductive toxicity, persistence and bioaccumulation). Eco-Label criteria are often used for green procurement.

22. The workshop found that the most common approaches are as follows:

a) Many countries reduce the use of particular chemicals;
b) Many countries reduce impact from particular effects from chemicals (*e.g.*, sensitization, carcinogenicity) and the EU countries tend to use "R- Phrases"[2];
c) Countries tend to establish criteria for GP for categories that other countries have already created;
d) Many countries consider volume in establishing GP;
e) Most programs tend to be in consumer products.

23. The workshop identified the following differences:

a) Differences in defining product categories (classification system for the product categories, including definition);
b) Different level of required chemical content in the product;
c) Different descriptions of chemical criteria: some are general, others are based on characteristics, and others list the chemical itself.

- ***Feasibility of developing common guidance/criteria for choosing product categories and for selecting products within product categories for public green procurement***

24. The workshop agreed that it is feasible to develop common criteria for selecting products within product categories. However, there are steps that must be taken first, such as:

a) Increased information sharing/clearinghouse;
b) Benchmarking on the effectiveness of GP as a tool for reducing the environmental and human health effects of the most hazardous chemicals;
c) Recognize context of other regulatory activities;
d) Develop case studies of public GP programs;
e) Develop strategy for partnerships between governments and industry to support consideration of chemical safety in GP;
f) Encourage early dialogue with industry;
g) Develop common tools to address these issues, *e.g.*, LCA (that includes quantitative chemical and toxicological data!) and risk assessment measures.

25. The workshop also agreed that developing common criteria should be for:

a) Criteria that goes well beyond regulatory compliance;
b) Products that have a large global trade with significant effects on human health and the environment.

[2] See Annex 12

26. Finally, the workshop noted that it would be difficult to develop common criteria in cases where dissimilar products serve the same function.

27. When it comes to choosing product categories, the workshop considered that it is not feasible to develop common factors because

a) Driving forces are different for countries and organizations, and
b) Less product categories will be included in GP if the process of choosing product categories is harmonized.

- ***Need for further work for encouraging chemical safety consideration in public green procurement***

28. Although time was too limited to further develop proposals for future work, the Workshop identified the need for the following activities/tools and **recommended that all stakeholders investigate opportunities for further work in this area.**

a) Information sharing, linking existing databases, hosting regular workshops to discuss best/worst cases and practices, including prioritization;

b) Benchmarking, involving both private and public sectors;

c) Better definitions of green procurement and distinguish line between green procurement and regulatory compliance;

d) Education to increase public awareness, or campaign for consumers and public authorities. (Note: Giving the importance of establishing evidence basis for the green procurement, campaign should be subsequent and be dependent on the evidence basis. This should not be done until there is first evidence to demonstrate the benefits of the program.)

e) Follow up on key barriers for green procurement;

f) Information and education about what green procurement is;

g) Sectoral approach to green procurement, *e.g.,* building sector and health care sector;

h) Methods to make products and technologies with a better chemical safety profile available on the market as substitutes;

i) Improved methods for risk assessment on products, *e.g.*, for sensitive groups.

ANNEX 1

Chemical Product Policy (CPP) Background

1. The OECD Report *Environmental Outlook for the Chemicals Industry*, published in 2001, presents new approaches for the future. One group of main issues that will deserve attention in the future is to create a holistic approach to chemical safety that not only addresses the risks to man and the environment resulting from the production of individual substances, but also the risks posed by products made from these substances. Holistic approaches to chemicals management attempt to prevent injury to human health and damage to the environment throughout all stages of a chemical product's life cycle.

2. As a follow-up to this report, the Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology discussed issues associated with Integrated Product Policy within the context of chemical management and decided to organize a workshop on these issues. The workshop on "Chemical Product Policy" was held in Tokyo in September 2002. It developed a work plan for possible activities that the OECD could carry out to help governments and others to better evaluate and manage releases of chemicals throughout their life cycle.

3. Six projects were proposed by the Tokyo Workshop. Work on the project "Information sharing on chemical products" was endorsed by the 34th Joint Meeting. The first part of that project consisted in country surveys that were carried out to identify barriers that hinder the exchange of information. The country surveys were then used to prepare a workshop on "Exchanging Information across a Chemical Product Chain", which was held in Stockholm, Sweden on 15-16 June 2004.

4. At the 37th Joint Meeting (November 2004), Korea proposed to hold a workshop on one of the other projects that were proposed at the Tokyo Workshop; this proposal was endorsed and the Issue Team on CPP was requested to further discuss the workshop objectives and scope. The 38th Joint Meeting (June 2005) agreed on the CPP Issue Team proposal to prepare and hold a workshop on consideration of chemical safety in green procurement".

ANNEX 2

OECD Green Procurement-Related Past and On-going Activities, Including the Council Recommendation on Improving the Environmental Performance of Public Procurement

1. In recent years a significant number of OECD member countries have introduced initiatives to reduce the environmentally damaging effects of public procurement. Through various polices and programmes environmental criteria are being applied to purchasing decisions.

2. OECD's activities in the area of 'green public purchasing' date from 1996 (Recommendation of the Council on Improving the Environmental Performance of Government [C(96)39/FINAL]). Through workshops and publications, work has focused on policy reviews of green public procurement (GPP) programmes and initiatives in OECD member countries, as well as the examination of institutional factors which facilitate or hinder their success.

3. Support for the use of GPP practices was expressed in the OECD *Environmental Strategy for the First Decade of the 21st Century*, which was adopted by OECD Environment Ministers and endorsed by the OECD Council at Ministerial level in May 2001. As a contribution toward implementing this strategy, OECD member countries adopted the OECD Recommendation C(2002)3 on "Improving the Environmental Performance of Public Procurement" in January 2002 (see below). *The Recommendation also invites the Environment Policy Committee to "monitor, assess and report to the Council in 2005 on member countries' implementation of this Recommendation and on any barriers to further progress".*

4. In order to assess the progress made during the last years in the implementation of this Recommendation and whether countries have met any difficulties (and which ones), a questionnaire on overall GPP was developed by the Secretariat in cooperation with the GPP Steering Group members. The questionnaire has been structured as follows:

- General information on GPP including barriers to and benefit from GPP;
- Instruments used to implement GPP;
- Assessment of GPP policies.

5. Questions about environmental and financial benefits, and to what extent environmental criteria have been taken into account, apply to a list of specific products and services: food services, furniture, paper, office stationery, packaging, electric/electronic appliances, heating appliances, office appliances (*e.g.* printers, photocopiers), vehicles, cleaning products, cleaning services, pesticides and fertilizers, water services, construction, etc.

6. The answers to the questionnaire will form the basis of national overviews of Greener Public Purchasing, and will then be compiled in a synthesis report, which could be available in 2006.

7. A number of OECD reports on activities related to Green Procurement are available. Some of them are listed below:

- The Environmental Performance of Public Procurement (2003)

- Economic Aspects of Extended Producer Responsibility (2004)
- Eco-Efficiency (2001)
- Proceedings of OECD Seminar on Extended Producer Responsibility: EPR Programme Implementation and Assessment (2004)
- OECD Joint Workshop on Extended Producer Responsibility and Waste Minimisation Policy in support of Environmental Sustainability (2002)

ANNEX 2 (continued)

RECOMMENDATION OF THE COUNCIL ON IMPROVING THE ENVIRONMENTAL PERFORMANCE OF PUBLIC PROCUREMENT

THE COUNCIL,

Having regard to Article 5 b) of the Convention on the Organisation for Economic Co-operation and Development of 14th December 1960;

Having regard to Recommendation of the Council on Improving the Environmental Performance of Government [C(96)39/FINAL];

Having regard to the Resolution of the Council on Improving the Environmental Performance of the Organisation for Economic Co-operation and Development [C(96)40/FINAL];

Having regard to the support for the use of green public procurement practices as expressed in the OECD *Environmental Strategies for the First Decade of the 21st Century*, which was adopted by OECD Environment Ministers and endorsed by the OECD Council at Ministerial level in May 2001;

Recognising the importance of governments in demonstrating leadership in progressing toward sustainable development;

Mindful of the commitments made by Member countries in 1992 at the UN Conference on Environment and Development to review and improve government procurement policies in order to move towards more sustainable patterns of consumption and production;

Noting that as a means to improve the environmental performance of public procurement, public authorities in a number of Member countries apply policies and practices which seek to encourage procurement officers to purchase products and services which are less environmentally-damaging (hereafter "greener public purchasing policies");

Noting that greener public purchasing policies constitute a significant element of product-related environmental policies adopted by some Member countries;

Noting that the scale of government purchases is such that greener public purchasing policies can contribute to the development and diffusion of products and services which are less environmentally-damaging;

Noting that greener public purchasing policies can result in more cost-effective procurement practices;

Recognising the need to preserve market openness and to apply the principles of transparent and competitive processes and non-discrimination among potential suppliers;

Considering that measures to improve the environmental performance of public procurement should not constitute unnecessary obstacles to international trade;

Considering that the use of relevant international standards, as well as equivalence and mutual recognition arrangements, could result in enhanced co-ordination amongst Member countries' greener public purchasing policies, and thus could have beneficial environmental and economic effects;

Recognising that greener public purchasing policies depend for their efficiency and effectiveness upon: the use of appropriate methods to account for the environmental costs of products and services including, where appropriate, environmental impacts throughout the lifecycle; co-ordination between procurement, budget, environment and other relevant government officials; co-ordination with other environmental policy measures such as economic instruments (e.g. tradable permits and environmental taxes), performance standards, and information-based measures (e.g. demonstration projects and eco-labels); and, the prevention of false or misleading claims of environmental quality;

Conscious of the need for Member countries to tailor implementation strategies for greener public purchasing policies to fit their individual institutional, social, economic and environmental needs and priorities;

On the proposal of the Environmental Policy Committee:

I. RECOMMENDS that Member countries take greater account of environmental considerations in public procurement of products and services (including, but not limited to, consumables, capital goods, infrastructure, construction and public works), in order to improve the environmental performance of public procurement, and thereby promote continuous improvement in the environmental performance of products and services.

II. RECOMMENDS to this effect that Member countries should:

i) develop greener public purchasing policies in ways which are consistent with Member countries' competition and other relevant national policies, and with their international obligations and commitments;

ii) take the following concrete steps to ensure the incorporation of environmental criteria into public procurement of products and services including, where appropriate, environmental impacts throughout the lifecycle, while ensuring that transparency, non-discrimination and competition are preserved:

   (a) provide the appropriate policy framework to incorporate environmental criteria into public procurement of products and services, along with price and performance criteria;

   (b) introduce financial, budgeting, and accounting measures to ensure that public procurement policies and practices consider the environmental costs of products and services;

   (c) provide information, training and technical assistance to officials involved in the public procurement and use chain, including those who set the performance criteria of products and services, those who are responsible for procurement, and those who use the products and services;

(d) make information and tools that facilitate greener public purchasing available to all levels of government;

(e) disseminate the information needed to facilitate and encourage greener public purchasing decisions, as well as the results and benefits derived from their adoption;

(f) establish procedures for the identification of products and services which meet the objectives of greener public purchasing policies;

(g) encourage the development of indicators to measure and monitor progress made in greener public purchasing;

(h) assess and evaluate greener public purchasing policies in order to ensure that they are economically efficient and environmentally effective.

III. INVITES the Environment Policy Committee to:

i) support efforts by Member countries to develop and apply efficient and effective greener public purchasing policies, for example through the collection and dissemination of information on "best practices" and the development of appropriate indicators;

ii) monitor, assess and report to the Council in 2005 on Member countries' implementation of this Recommendation and on any barriers to further progress.

ANNEX 3

Questionnaire on Consideration of Chemical Safety in Green Procurement

(For Governments)

A. Identification of the respondent

1) Country:

2) Name of person completing the questionnaire:

3) Organization:

4) Address:

5) Phone number:

6) E-mail address:

B. Does your government consider chemical safety in Green Public Procurement?

□ yes □ no

If yes, please go to C.

C. Questions concerning the current product categories and substances/hazardous properties, for which chemical safety consideration is applied in public procurement decision-making

7) Please check the product categories included in green public procurement of your country and specify the relevant substances and/or hazardous properties that are taken into account for chemical safety of each product category

Product Category	Substance(s) and/or hazardous properties*
papers	
toner cartridges	
office furniture	
fluorescent lamps	
Paints	
wall paper	
indoor floor coverings	
Adhesives	
Soaps	

Detergents	
Cleaners	
Clothing	
toilet papers	
aerosol products	
engine oils	
anti-freezing solution for automobiles	
printing inks	
Batteries	
packaging materials	
Deodorants	
Pesticides	
others(please specify, if any, and add rows to the table as appropriate)	

**Substance(s): the information provided can be general (e.g., heavy metal, VOC), or more detailed (e.g., lead)*Examples of hazardous properties are: carcinogenicity, mutagenicity, reproductive and developmental toxicity, environmental persistency/non biodegradability, bioaccumulation.*

8) Do you think that there is a need of extending or modifying the list of product categories, substance(s) and/or hazardous properties, in order to enhance chemical safety of the green procurement?

□ yes □ no

8-1) If yes, please specify the candidate product categories and relevant substances and/or hazardous properties for future inclusion.

No.	**Product Category**	**Substance(s) and/or hazardous properties**
1		
2		
3		
4		
5		
..		
..		
n		

D. Questions concerning the factors for determining product categories in green procurement programme

9) Do you refer to specific factors for determining product categories in the green procurement? Examples of factors may be (i) domestic use volume, (ii) possibility of exposure to users and/or environment, (iii) content and/or properties of hazardous substances, and (iv) target users (e.g. sensitive groups). If yes, please rank the factors in the order of importance. You may add other factors at your own need.

First: ----------
Second: ----------
Third: ----------
Fourth: ----------

Fifth: ----------

9-1) If yes, how easily do you get the information related to the factors in Question 9)

	easy	moderate	difficult
First: ----------	□	□	□
Second: ----------	□	□	□
Third: ----------	□	□	□
Fourth: ----------	□	□	□
Fifth: ----------	□	□	□

9-2) If no, please indicate the factors that should be considered for determining the product categories in green procurement (rank them in the order of importance).

First: ----------
Second: ----------
Third: ----------
Fourth: ----------
Fifth: ----------

E. Questions for the selection criteria for products within product categories

10) Do you use other selection criteria than requirement or guideline for the content limit of hazardous substances?

□ yes □ no

10-1) If yes, what are these other criteria?

10-2) Are the selection criteria provided on a scientifically sound way and sufficient?

□ yes □ no

10-3) If no, please write down the reasons briefly.

F. Questions related to barriers to consideration of chemical safety in Green Procurement

11) Do you think that consideration of chemical safety in the green public procurement is currently sufficient?

□ yes □ no

11-1) If no, what are important barriers? Examples of barriers may be institutional inertia, lack of practical tools (e.g. manuals, handbooks), lack of information, lack of financial resources, lack of support from public administration, economic incentives and lack of quality or product competitiveness. You may add other barriers. Please rank the barriers in the order of importance.

First: ----------
Second: ----------
Third: ----------
Fourth: ----------
Fifth: ----------

G. Other comments

ANNEX 4

Questionnaire on Consideration of Chemical Safety in Green Procurement (for private companies that produce end user mixtures (such as paints or pesticides) and companies that produce articles and components for articles)

A. Identification of the respondent

1) Company:
2) Name and position of person completing the questionnaire:
3) Organization:
4) Address:
5) Phone number:
6) E-mail address:

B. General Information

7) What are the main product items that your company is
   - producing: ----------
   - and/or purchasing: ----------

8) Do you take chemical safety into consideration in your purchases?
   □ yes □ no

   8-1) If yes, please identify the motivation of implementing green procurement in your purchases.

   □ regulation(s) in your country
   □ international agreements
   □ regulation(s) in other countries
   □ others than regulation and international agreement (voluntarily) :

   If you have multiple motivations, please rank them in order of importance.

   8-2) If yes, what types of incentives are given for the suppliers who comply with your requirements related to chemical safety?
   □ no incentives □ price preferences □ financial subsides
   □ advantage in tendering procedures □ purchasing priority
   □ other ( )

   8-3) If no, does your company have a plan to implement green procurement in the near future?
   □ yes □ no

9) Do you take chemical safety into consideration in the product that you supply?
   □ yes □ no

   9-1) If yes, please identify the motivation.
   □ regulation(s) in your country
   □ international agreement(s)

□ regulation(s) in other countries
□ purchaser's demand
□ others than regulation or international agreement (voluntarily):

If you have multiple motivations, please rank them in order of importance.

9-2) If yes, what kind of benefits are given to your company by the purchasers?

□ no incentives □ price preferences □ financial subsides
□ advantage in tendering procedures □ purchasing priority
□ other ( )

9-3) If no, does your company have a plan to consider chemical safety in your product supply in the near future?

□ yes □ no

C. Questions concerning the current product categories and substances/hazardous properties, for which chemical safety consideration is applied in private procurement decision-making

10) Does your company have product categories of concern with respect to chemical safety when purchasing and/or producing?

□ yes □ no

10-1) If yes, please provide a list of the product categories and specify the relevant substances and/or hazardous properties that are taken into account for chemical safety when purchasing and/or producing them.

No.	Product Category	Substance(s) and/or hazardous properties*
1		
2		
3		
..		
..		
n		

*Substance(s): the information provided can be general (e.g., heavy metal, VOC), or more detailed (e.g., lead) *Examples of hazardous properties are: carcinogenicity, mutagenicity, reproductive and developmental toxicity, environmental persistency/non biodegradability, bioaccumulation.

11) Does your company consider extending or modifying the list of product (or part) categories in order to enhance chemical safety of your products?

□ yes □ no

11-1) If yes, please specify the candidate product categories, and explain what kinds of substances and/or hazardous properties make you consider those as candidates.

No.	Product (or part) Category	Substance(s) and/or hazardous properties
1		
2		
3		
4		
5		
..		
..		
N		

D. Questions concerning the factors for determining product categories in green procurement programme

12) What are the most important factors when determining the product (or part) categories in green procurement in your company? Examples of factors may be international agreements, or domestic regulations, use volume of your company, possibility of exposure to users, content or properties of hazardous substances, target users (e.g. sensitive groups) and profit related to the product category. You may add other factors at your own need. Please rank the factors in the order of importance.

First: ----------
Second: ----------
Third: ----------
Fourth: ----------
Fifth: ----------

13) How easily do you get the information related to the factors in Question 12)

	easy	moderate	difficult
First:	□	□	□
Second:	□	□	□
Third:	□	□	□
Fourth:	□	□	□
Fifth:	□	□	□

E. Questions for the selection criteria for products within product categories

14) Do you use other selection criteria than requirement or guideline for the content limit of hazardous substances for the selection of product within product categories?

□ yes □ no

14-1) If yes, what are these other criteria?

14-2) Do you consider that the selection criteria are provided on a scientifically sound way and sufficient?

□ yes □ no

14-3) If no, please write down the reasons briefly.

F. Questions related to barriers to consideration of Chemical Safety in Green Procurement

15) Do you think that consideration of chemical safety in the green procurement of your company is currently sufficient?

□ yes □ no

15-1) If no, what are important barriers? Examples of barriers may be lack of motivation, awareness toward chemical safety, lack of practical tools(e.g. manuals, handbooks), lack of information, higher prices of the supplied items, lack of support from consumer, lack of economic incentives and lack of quality or product competitiveness. You may add other barriers. Please rank the barriers in the order of importance.

First: ……
Second: ……
Third: ……...
Fourth: ……..
Fifth: ……

G. Other comments

ANNEX 5

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ANNEX 6

Agenda for the OECD Workshop

Consideration of Chemical Safety in Green Procurement

Seoul (Korea), 8-10 November 2005

7 November 2005

14.00 Pre meeting for Workshop Chair and chairs and rapporteurs for the sessions

8 November 2005

8.30 – 9.00	**Registration**
9.00	**Opening of the Workshop** - Welcome note by Korean representative, MOE Korea - Introduction by Ms. Laurence Musset, OECD Secretariat - Introduction by Mr. Yong-Wha Kim, Workshop Chair
9. 30	**Presentation of existing approaches (public sector)** **-** Background Document /public sector (Mr. Sung-Yong Gong)
10.00	**Presentations of case studies on green public procurement** - representative from Japan (Mr. Gakuji Fukatsu) - representative from Korea (Mr. Yong-Seung Shin)
11.00	**Coffee break**
11.15	**Other presentations related to green public procurement** - representative from UK (Mr. Andrew McWhir) - representative from the US (Mr. Jim Darr) - representative from Sweden (Mr. Erik Noaksson)
12.45	**Lunch Break**
14.15	**Introduction to Breakout Session I** (public sector) - Presentation of summary on the commonalities and differences of the factors/criteria for the public sector (Mr. Heung-jin Choi) - General discussion
14.45	**Breakout Session I** (public sector) - Need for adding other factors for choosing product categories - Need for adding other chemical safety criteria for selecting product within

	product categories - Identification of differences and commonalities - Identification of barriers to chemical safety consideration in green public procurement
16.30	**Coffee Break**
16.45-17.30	**- Reports from Breakout Session I** (Rapporteurs) **- Preliminary conclusions** (Workshop Chair) (Plenary Session)
17.30 –19.00	Session chairs and rapporteurs prepare conclusions from Session I

19.00 –21.00 Evening event hosted by the president of the Korea Environment Institute (KEI)

9 November 2005

9.00	**Presentation of the conclusions from Breakout Session I** (Workshop Chair)
9.30	**Presentation of existing approaches (private sector)** Background document /private sector (Mr. Sung-Yong Gong)
10.00	**Presentations on the case studies on green private procurement** - representative from Samsung Electronic (Mr. Kyubaek Chung) - representative from LG Chem. (Mr. In Park) - representative from Sony (Mr. Hiroshi Ooki)
11.30	**Coffee Break**
11. 45	**Other Presentations related to green private procurement** - representative of BIAC (Steve Russel) - representative of GPN Japan (Mr. Gakuji Fukatsu)
12.45	**Lunch Break**
14.15	**ntroduction to Breakout Session II** (private sector) - Presentation of summary on the commonalities and differences of the factors/criteria for the private sector (Mr. Heungjin Choi) - General discussion
15.00	**Breakout Session II** (private sector) - Need for adding other factors for choosing product categories

	- Need for adding other chemical safety criteria for selecting product within product categories - Identification of differences and commonalities - Identification of barriers to chemical safety consideration in green private procurement
16.15	**Coffee Break**
16.30-17.30	- **Reports from Breakout Session II** (Rapporteurs) - **Preliminary conclusions** (Workshop Chair) (Plenary Session)
17.30 –19.00	Session chairs and rapporteurs prepare conclusions from Session II

10 November 2005

9.00	**Presentation of the conclusions from Breakout Session II** (Workshop Chair)
9.30	**Introduction to Breakout Session III** (Workshop Chair)
9.45	**Breakout Session III** - Feasibility of developing common guidance/criteria for choosing product categories and for selecting products within product categories for public green procurement - Further work for encouraging chemical safety consideration in green procurement for public sector and private sector respectively
11.00	**Coffee Break**
11.15	- **Reports from Breakout Session III** (Rapporteurs) - **General conclusion** (Workshop Chair) (Plenary Session)
12.30	**Coffee Break**
12. 45	**- Presentation of the Workshop Report** (Secretariat) **- Discussion and adoption of the report**
13.30	**End of Workshop**

14.30 –19.00 Tour round to "Exhibition of Eco-label Products at KINTEX"

ANNEX 7

Examples of Product Categories and Factors for Choosing Product Categories (Green Public Procurement)

Tables 3, 4 and 5 were prepared on the basis of country answers to an OECD questionnaire on consideration of chemical safety in green procurement. Austria (AUT), Japan (JPN), Korea (KOR), the Netherlands (NLD), Sweden (SWE) and the United-States (USA) provided responses to the questionnaire. Table 6 presents examples found through a Web search covering the following Websites:

- Australian Environmental Choice (Australia) www.aela.org.au
- Blue angel (Germany) www.blauer-engel.de
- Eco-Mark (Japan) www.ecomark.jp/
- Eco- Label (Korea) www.koeco.or.kr/
- Nordic Swan (Nordic Council) www.svanen.nu/Eng/default.asp
- Green Seal (USA)[3] www.greenseal.org/;
- NF Environment (France) www.marque-nf.com/accueil.asp
- Eco-flower (EU) www.eco-label.com/default.htm

[3] Green Seal is an independent, non-profit organization. It is not government-run or government authorized program.

Table 3. Examples of current product categories with chemical criteria in OECD member countries ((responses to the OECD questionnaire as of 15 August 2005)

Product Category	The existence of chemical criteria					
	AUT	JPN	KOR	NLD	SWE	USA
Papers	o	-	-	o	o	o
Toner cartridges	o	-	o	-	o	-
Office furniture	o	o	o	-	o	o
Fluorescent lamps	o	o	o	o	-	o
Paints	o	o	o	o	-	o
Wall paper	-	-	o	o	-	-
Indoor floor coverings	o	-	-	o	-	o
Adhesives	o	-	o	o	-	o
Soaps	-	-	o	o	-	-
Detergents	o	-	o	o	o	-
Cleaners	o	-	-	o	o	o
Clothing	-	-	o	o	o	-
Toilet papers	o	-	o	o	o	-
Aerosol products	o	-	-	o	-	-
Engine oils	-	-	o	-	-	-
Anti-freezing solution for automobiles	-	-	o	-	-	-
Printing inks	o	-	o	o	-	o
Batteries	-	-	o	-	o	-
Packaging materials	o	-	-	-	-	-
Deodorants	o	-	-	-	-	-
Pesticides	-	-	-	o	-	-
Bed frames and mattresses	-	o	-	-	-	-
Fermented compost using sewage sludge	-	o	-	-	-	-
Glued laminated timber, plywood, and laminated veneer lumber	-	o	-	-	-	-
Particle board, fiber board and wood-type cement board	-	o	-	-	-	-
Computer, printer, copier etc	o	-	-	-	-	-

Note: 1. “o” means existence of chemical criteria, and “-” means no chemical criteria.

Table 4. Proposal for extending the list of product categories (responses to the OECD questionnaire)

Country	Other proposed product category
AUT	-Disinfectants
JPN	-List will be modified in accordance with domestic regulations
KOR	- Writing materials - Chair and sofa - Bed - Coffee maker
NLD	- All of them especially when better and environmental friendly alternatives arise
SWE	- IT products - Medical devices - Medicals
USA	- Electronic products

Table 5 Factors for choosing product categories and availability of the information on the factors (responses to the OECD questionnaire)

Country	Factors for choosing product categories (with rank)
AUT	Procurement volume Environmental impacts/available alternatives Content/properties of substances Possibility of exposure
JPN	- Expectation of environment burden decreasing effect - Marketability - Users' safety - Sound quality control - Cost appropriateness - Governmental procurement volume
KOR	Criteria development aspect Needs of public organization & purchasing volume Avoiding of misunderstanding information to the consumer Potential of expanding market share Stakeholder's concern
NLD	Content/properties of substances Volume Possibility of exposure Target users
SWE	Volume & environmental strategic importance (connecting to national & international) Specific environmental problems relating to the product group[1]
USA[2]	-

Note: 1. Relevance is assessed according to the specific environmental problems relating to the product group and how wide they are in scope. Potential is judged by looking at the possible environmental gain within the product group. Control is a measure of how the product, activity or problem might be affected by procurement.

2. There has not been a systematic effort to identify product categories for green procurement. Product categories have been identified as issues related to one or more of the factors listed above have arisen. The relative importance of different factors has varied on a case-by-case basis, depending on the circumstances and issues pertaining to each category.

Table 6. Examples of product categories with chemical criteria in Eco-labels (Web search)

Product Category	The existence of chemical criteria							
	AUS[1]	DEU	FRA[2]	JPN	KOR	NOR[3]	USA	EU
Papers[4]	o	o	o	o	-	o	o	o
Toner cartridges	-	o	-	o	o	o	-	-
Office furniture[5]	o	-	o	-	o	o	-	-
Fluorescent lamps[6]	-	-	-	-	o	o	-	o
Paints[7]	o	o	o	o	o	-	o	o
Wall paper[8]	-	o	-	-	o	-	-	-
Indoor floor coverings[9]	o	o	-	-	o	o	-	o
Adhesives[10]	o	o	-	-	o	o	o	-
Soaps[11]	o	-	-	-	o	o	-	-
Detergents[12]	o	-	o	-	o	o	-	o
Cleaners[13]	o	-	o	-	-	o	o	o
Clothing[14]	o	-	o	-	o	-	-	o
Toilet papers[15]	o	-	o	o	o	o	-	o
Aerosol products[16]	o	-	-	-	o	-	-	-
Engine oils[17]	-	-	-	-	o	-	-	-
Anti-freezing solution for automobiles	-	-	-	-	o	-	-	-
Printing inks	o	-	-	o	o	-	-	-
Batteries[18]	-	o	-	-	o	o	-	-
Packaging materials[19]	o	o	-	o	o	o	-	-
Deodorants	-	-	-	-	o	-	-	-
Pesticides	-	-	-	-	-	-	-	-
Electronics (computer/fax/copiers) [20]	o	o	o	o	o	o	-	o

Note: 1. Australia
2. France
3. Norway
4. publishing paper & office paper (AUS), newsprint & copying paper (DEU), office equipment paper (FRA), paper for communication & printing (JPN), paper envelopes (NOR), paper products used in the preparation of food (USA), and copying and printing paper (EU).
5. furniture & fittings (AUS), professional/school furniture & accessories (FRA), office partition (KOR),and furniture & fitments (NOR).

6. fluorescent lamps (KOR), light sources; (NOR), and light bulbs (EU).
7. architectural & protective coatings (AUS), wall paint (DEU), construction material (FRA), paints (JPN, KOR, USA), indoor paints & Varnishes (EU).
8. wall papers & woodchip wall coverings, wall papers containing other material (DEU), and wall paper (KOR).
9. floor coverings (AUS), floor-coverings made of wood (DEU), indoor floor coverings (KOR), 62 floorings (NOR), hard floor coverings (EU).
10. adhesives (AUS, KOR, NOR), Bitumen & floor-covering adhesive (DEU), and commercial adhesives (USA).
11. shampoos & soaps (AUS), soaps (KOR), and shampoo/conditioner/soap (NOR).
12. hand washing/machine dishwashing/laundry detergents (AUS, KOR, EU), cleaning of clothes & diverse textiles (FRA), hand dish wash/dishwasher/laundry detergents, dishwasher detergents for professional use & stain remover (NOR).
13. general purpose cleaners (AUS), cleaning agents & maintenance of premises (FRA), cleaning products (NOR), household cleaners (USA), all purpose cleaners & cleaners for sanitary facilities (EU).
14. textile products (AUS, EU), cleaning of clothes and diverse textiles (FRA), and clothing (KOR).
15. sanitary paper products (AUS), urban sanitary facilities (FRA), sanitary paper (JPN, KOR), and tissue paper (NOR, EU).
16. personal products (AUS), and sprays (KOR).
17. engine oil for gasoline/diesel car (KOR).
18. batteries (DEU), industrial batteries (KOR), & primary batteries (NOR).
19. printers & printed matter (AUS), transportation packaging (DEU), packaging materials (JPN, KOR), and packaging paper (NOR).
20. computers, printers/faxes/multifunction devices, Photocopiers (AUS), copiers, desktop computers, etc. (DEU); electric & electronic materials (FRA), copier/personal computer/digital duplicator (JPN), notebook/personal computers, etc. (KOR); copying machines/printers/fax (NOR), and personal/portable computer (EU).

ANNEX 8

Examples of Chemical Criteria for Selecting Products within Product Categories (Green Public Procurement)

Tables 7-1 to 7-26 and Table 8 were prepared on the basis of country answers to an OECD questionnaire on consideration of chemical safety in green procurement. Austria (AU), Japan (JPN), Korea (KOR), the Netherlands (NLD), Sweden (SWE) and the United-States (USA) provided responses to the questionnaire. Countries were not requested to provide detailed criteria; Therefore, except in some cases, the criteria are general (e.g., indication of chemicals of concern without respective concentration limits). Detailed criteria are included in Tables 9-1 to 9-5, which were prepared on the basis of a Web search on Eco-labels; examples of criteria were found at the following Websites:

- Australian Environmental Choice (Australia) www.aela.org.au
- Eco-flower (EU) www.eco-label.com/default.htm
- Blue angel (Germany) www.blauer-engel.de
- Eco-Mark (Japan) www.ecomark.jp/
- Eco- Label (Korea) www.koeco.or.kr/
- Nordic Swan (Nordic Council) www.svanen.nu/Eng/default.asp
- Green Seal (USA) [Green Seal is an independent, non-profit organization. It is not government-run or government authorized program.] www.greenseal.org/;
- NF Environment (France) www.marque-nf.com/accueil.asp

Many other examples were found on the above mentioned websites and included in the Workshop background document; however, they were not included in this report to avoid overloading it. They are related to office furniture, fluorescent lamps, paints, wall paper, floor coverings, soaps, clothing, toilet paper, aerosol products, engine oil, etc.

Information on criteria can also be found at the following websites:

www.umweltzeichen.at (Austria)
www.environmentalchoice.com (Canada Environmental Choice)
www.mst.dk/homepage/ (Denmark)
www.gen.gr.jp/ (Global Ecolabelling Network and web-based database:
www.global-ecolabelling.net/01.html

Table 7-1. Chemical criteria for papers (responses to the OECD questionnaire)

Country	Chemical Criteria for Papers
AUT	- Bleach: totally chlorine free or AOX emissions below 0.25 kg/air dried ton, free of optical brighteners.
NLD	- Criteria that are used by Milieukeur, Nordic Swan, Ecolabel and FSC or PEFC, no chlorine etc.
SWE	- Chlorine gas bleaching is forbidden but papers are allowed to be bleached either by TCF or ECF method.
USA	- Chlorine

Note: "-" means no chemical criteria.

Table 7-2. Chemical criteria for toner cartridges (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT*	- Substances that are classified according to the hazard classifications listed below (according to EU Directive 67/548/EEC, Annex VI), must not be used • "very toxic" (T+ with R26, R27, R28 or R39) • "toxic" (T with R23, R24, R25, R39 or R48) • "harmful" (with R42) • "irritant" (with R43) • "carcinogenic" (according to EU category 1 or 2: T with R45 or R49; according to EU category 3: Xn with R40) • "toxic to reproduction" (according to EU category 1 or 2: T with R60 or R61; according to EU category 3: Xn with R62 or R63) • "mutagenic" (according to EU category 1 or 2: T with R46; according to EU category 3: Xn with R40) • "dangerous to the environment" (N with R50, R50/53, R51/53 or R59). - No heavy metals: As, Cd, Cr6+, Hg, Pb. - No substances that are classified under "harmful to water" category 2 or 3 according to the list or self-classification of the German Administrative Act on water harming substances must exceed a maximum of 1% by mass (as component of preparations or in pure form).
KOR	- Lead, mercury, cadmium, PBBs (polybrominated biphenyls), PBDEs (polybromodiphenyl ethers), short-chain chlorinated paraffins, C=10~13, PVC, CFCs.
SWE*	- Substances classified as harmful to the environment in accordance with regulations in force in Denmark, Finland, Iceland, Norway or Sweden or in accordance with EU Directive 67/548/EEC and adaptations thereof, must not be present in new toner powder in quantities in excess of 2% by weight. - Toner powder classified in current regulations in Finland, Iceland, Denmark, Norway or Sweden as carcinogenic, harmful to the reproductive system, genetically harmful, toxic, very toxic or allergenics must not be present in the product.

*See Annex 12 for EU R-phrases

Table 7-3. Chemical criteria for office furniture (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Wood Boards: equilibrium concentration max. 0,05 ppm formaldehyde in the test room or mean value of 2.0 mg formaldehyde/m^2h. - Wooden boards with solvents based on polymer MDI (PMDI) must not emit any traceable monomer MDI (methylene bis(4-phenylene isocyanate), detection limit: 0.1 µg/m³). - Wooden boards with phenol-containing binders must not exceed a concentration of 14µg/m^3 of phenols in the test room.
JPN	- Formaldehyde
KOR	- Lead, Arsenic, Cadmium, Antimony, Barium, Chromium, Mercury, Selenium.
SWE	- BFR (PBB, PBDE and chlorinated paraffins), lead in plastics.
USA	- VOC, alhehydes.

Table 7-4. Chemical criteria for fluorescent lamps (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Single ended light bulbs: Mercury content below 6 mg/lamp or 4 mg/lamp. - Double ended light bulbs: • Life time > 10.000 mercury content < 7.5 mg or life time >12.500 mercury < 5 mg • Life time > 20.000 mercury content < 10 mg or < 8 mg
JPN	- Mercury
KOR	- Mercury
NLD	- Minimum of mercury and fluorescent powder.
USA	- Mercury

Table 7-5. Chemical criteria for paints (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT*	- Paints and varnishes: • Substances that are classified according to the hazard classifications (according to EU Directive 67/548/EEC, Annex VI2) must not be used in excess of 0.1 % by mass for R45, R46, R49, R60 or R61 or 1% by mass for R40, R62, R63 or R68. • The product must not be classified with R42, R43 - VOC in varnishes • Max. 10% in general • Max. 5% in case of white covering wood varnishes • Max. 0.4% aromatic solvents.

	- VOC in wall paints: • Max. 0.1% in case of synthetic resin dispersion • Max. 1% in case of natural resin dispersion • Max. 5% other organic ingredients in case of silicate dispersions. - Preservatives paints and varnishes: • Max. 0.05 mass % preservatives in varnishes and dispersions • Max. 0.005 mass % preservatives in other wall paints • Max. 0.002 mass % free formaldehyde – except for O-Formale and N-Formale if within 24h below 0.05 ppm in the test room.
JPN	- Lead, chrome, VOCs
KOR	- VOCs, volatile aromatic hydrocarbons, Lead, cadmium, mercury, arsenic, antimony, hexavalent chromium and their compounds, Triphenyl tins (TPT) and Tributyl tins (TBT), Halogenated hydrocarbons, Ammonia and its compounds.
NLD	- No volatiles or at least less than 100g/l.
SWE	-
USA	- VOC, lead, hexavalent chromates, benzene, halogenated solvents, mercury.

*See Annex 12 for EU R-Phrases

Table 7-6. Chemical criteria for wall paper (responses to the OECD questionnaire

Country	Chemical Criteria
KOR	- PVC, PBBs (polybrominated biphenyls), PBDEs (polybromodiphenyl ethers), short-chain chlorinated paraffins, C=10~13, VOCs, formaldehyde, Lead, Arsenic, Cadmium, Antimony, Barium, Chromium, Mercury, Selenium.
NLD	- No PVC, avoid vinyl.

Table 7-7. Chemical criteria for indoor floor coverings (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Wood: • Formaldehyde, elastic floor coverings: limiting values for Pb, Hg, Cd, CrVI. • Textile floor coverings: no pigments based on Hg, Pb, Cd or CrVI compounds, no pigments that are able to set free carcinogenic amines (20 substances listed).
NLD	- No polyurethane, environmental friendly painting.
USA	- VOC, formaldehyde, styrene, 4-phenylcyclohexene, PVC, SBR latex, 2-ethyl-1-hexanol, BHT, flammability.

Table 7-8. Chemical criteria for adhesives (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	According to Emicode ECI.
JPN	-
KOR	- PVC, Triphenyl tins (TPT) and Tributyl tins (TBT), Lead, Cadmium, Mercury, DEHP.(di-(2-ethylhexyl) phthalate), PBBs (polybrominated biphenyls), PBDEs (polybromodiphenyl ethers), short-chain chlorinated paraffins, C=10~13.
NLD	- No volatiles or PVA adhesive.
USA	- VOC, ozone-depleting substances, carcinogenicity, reproductive toxicity, acute toxicity, persistence, bioaccumulation.

Table 7-9. Chemical criteria for soaps (responses to the OECD questionnaire)

Country	Chemical Criteria
KOR	- Phosphate (P_2O_5)
NLD	- Specification on "cleaning": • Nonionic tensides of the type APEO's, EO/PO block polymers, AEO's with PO and many EO- groups. • Quaternary ammonium compounds. • High concentrations of acids such as hydrochloric acid, sulphuric acid and nitric acid. • High concentrations of alkali's such as lye and ammonia. • Chlorinated substances. • Chlorinated, aromatic and aliphatic organic solvents (with the exception of isopropyl and ethyl alcohol). • Phosphates, sodium phosphate. • Phenols. • Phosphate substitutes like EDTA and phosphonates. • Preservatives, in particular formaldehyde. • Fillers such as sulphates. • Aromatic substances. • Nitro musks

Table 7-10. Chemical criteria for detergents (responses to the OECD questionnaire)

Country	Chemical Criteria
KOR	- Anionic surfactants, nonionic surfactants, amphoteric surfactants, sud controllers, fabric softening, builders, bleaching, solvents.
NLD	- Specification on "cleaning": • Nonionic tensides of the type APEO's, EO/PO block polymers, AEO's with PO and many EO- groups. • Quaternary ammonium compounds. • High concentrations of acids such as hydrochloric acid, sulphuric acid and nitric acid. • High concentrations of alkali's such as lye and ammonia. • Chlorinated substances. • Chlorinated, aromatic and aliphatic organic solvents (with the exception of isopropyl and ethyl alcohol). • Phosphates, sodium phosphate. • Phenols. • Phosphate substitutes like EDTA and phosphonates. • Preservatives, in particular formaldehyde. • Fillers such as sulphates. • Aromatic substances. • Nitro musks
SWE (See Annex 13 for EU R-Phrases)	- Surfactants are readily biodegradable according to OECD guidelines 301 A-F, *i.e.* biodegradable more than 60% (measured as CO2/BOD) or 70% (measured as DOC). - Added substances and known impurities and metabolites are not classified as very toxic, toxic, carcinogenic, mutagenic or toxic for reproduction with the indication of danger toxic (risk phrases R23, R24, R25, R26, R27, R28, R39, R45, R46, R48, R49, R60, R61) according to the Swedish National Chemicals Inspectorate regulations KIFS 1994:12 with amendments or the EC Directive 67/548/EEG with amendments. - The product is not classified as dangerous to the environment according to the Swedish National Chemicals Inspectorate regulations KIFS 1994:12 with amendments and the EC Directive 1999/45/EC with amendments. - The product is not classified as sensitizing in accordance with the rules and criteria's in the Swedish National Chemicals Inspectorate regulations, KIFS 1994:12 with amendments, and the EC Directive 1999/45/EC with amendments. - Compounds with active chlorine, EDTA above 0.1% by weight., aromatic solvents and perborates are not a part of the product formulation.

Table 7-11. Chemical criteria for cleaners (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Especially for all-purpose and sanitary cleaners according to the Austrian Eco-label (UZ 30), which are harmonized with the European Eco-label for all-purpose and sanitary cleaners. - Or list of ingredients (see criteria of criteria catalogue "Check it!").
KOR	- Alkyl phenol ethoxylates (APEOs), ammonia and quaternary ammonium salts, formaldehyde, ethylene glycol, nitromusks and polycyclic musks.
NLD	- Specification on “cleaning”: • Nonionic tensides of the type APEO’s, EO/PO block polymers, AEO’s with PO and many EO- groups. • Quaternary ammonium compounds. • High concentrations of acids like hydrochloric acid, sulphuric acid and nitric acid. • High concentrations of alkali's such as lye and ammonia. • Chlorous substances. • Chlorinated, aromatic and aliphatic organic solvents (with the exception of isopropyl and ethyl alcohol). • Phosphates, sodium phosphate. • Phenols. • Phosphate substitutes like EDTA and phosphonates. • Preservatives, in particular formaldehyde. • Fillers such as sulphates. • Aromatic substances. • Nitro musks
SWE*	- Surfactants are readily biodegradable according to OECD guidelines 301 A-F, *i.e.* biodegradable more than 60%(measured as CO2/BOD)or 70%(measured as DOC) - Added substances and known impurities and metabolites are not classified as very toxic, toxic, carcinogenic, mutagenic or toxic for reproduction with the indication of danger toxic (risk phrases R23, R24, R25, R26, R27, R28, R39, R45, R46, R48, R49, R60, R61) according to the Swedish National Chemicals Inspectorate regulations KIFS 1994:12 with amendments or the EC Directive 67/548/EEG with amendments. - The product is not classified as dangerous to the environment according to the Swedish National Chemicals Inspectorate regulations KIFS 1994:12 with amendments and the EC Directive 1999/45/EC with amendments. - The product is not classified as sensitizing in accordance with the rules and criteria’s in the Swedish National Chemicals Inspectorate regulations, KIFS 1994:12 with amendments, and the EC Directive 1999/45/EC with amendments. - Compounds with active chlorine are not a part of the product formulation. - EDTA above 0.1% by weight is not a part of the product formulation. - Aromatic solvents are not a part of the product formulation. - Perborates are not a part of the product formulation.

USA	- Butoxyethanol, chlorinated solvents, dibutyl phthalate, nitrilotriacetic acid, phosphates and phosphonates, hypochlorite, phenolic compounds, VOC, ozone-depleting substances, persistence (biodegradability), bioaccumulation, acute toxicity, skin and eye irritancy, sensitization potential, carcinogenicity, mutagenicity, teratogenicity, aquatic toxicity, flammability.

*See Annex 12 for EU R-Phrases

Table 7-12. Chemical criteria for clothing (responses to the OECD questionnaire)

Country	Chemical Criteria
KOR	- Azo dyestuffs, formaldehyde, chlorophenols, arsenic, lead, cadmium, mercury, copper, total chromium, cobalt, nickel, antimony, enriched pesticide residue, organic tin compounds (TBT).
NLD	- No following chemicals (in Dutch); nicotine, naphthalene, o-chlorophenol, diethylhexyl phthalate (DEHP), nonyphenol ethoxylaten NPEO), C3-alkylbenzenen, C4-alkylbenzenen, tetrachloroethylene (PER- chloorethyleen), p-Chloroaniline, p-Nitroaniline, 2,6-dichloro-4-nitroaniline, 2-chloro-4-nitroaniline, 6-methyl-3-nitroaniline, diphenylamine, toluene di-isocyanate, acridine, nitrobenzeen, goed oplosbare bariumdeeltjes, cobalt, chrome, lead, tin, zinc, nickel.
SWE*	- Chlorophenols 0.5 ppm, Ni 0.5µg/cm^2/week, free from R45, R46, R50, R51, R52, R53, R60, R61, formaldehyde, Azo dyes, TBT, Chromium VI, R43, DEHP, DBP and BBP.

*See Annex 12 for EU R-Phrases

Table 7-13. Chemical criteria for toilet papers (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Unbleached or totally chlorine-free bleached, no EDTA, no optical brighteners, no colorants with Pb, Cd, Hg, CrVI.
KOR	- Chlorine bleaching agent (hypochlorite, chlorine dioxide).
NLD	- No (chlorine) bleaching.
SWE	- Chlorine gas bleaching is forbidden but papers are allowed to be bleached either by TCF or ECF method.

Table 7-14. Chemical criteria for aerosol products (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Fully and partly halogenated chlorofluorocarbons and fluorocarbons are forbidden by national regulations for the use in aerosol products.
NLD	- No propellant/CFCs.

Table 7-15. Chemical criteria for engine oils (responses to the OECD questionnaire)

Country	Chemical Criteria
KOR	- Phosphorous
NLD	- Use of bio-based engine oils.

Table 7-16. Chemical criteria for anti-freezing solution for automobiles (responses to the OECD questionnaire)

Country	Chemical Criteria
KOR	- Amine compounds, nitrites, borates, chromate compounds.

Table 7-17. Chemical criteria for printing inks (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT*	- Substances that are classified according to the hazard classifications listed below (according to EU Directive 67/548/EEC, Annex VI), must not be used in excess of 0.1 % by mass or 1% by mass for Xn with R40, R42, R43, R62 or R63. • "very toxic" (T+ with R26, R27, R28 or R39) • "toxic" (T with R23, R24, R25, R39 or R48) • "carcinogenic" (according to EU category 1 or 2: T with R45 or R49; according to EU category 3: Xn with R40) • "mutagenic" (according to EU category 1 or 2: T with R46; according to EU category 3: Xn with R40) • "toxic to reproduction" (according to EU category 1 or 2: T with R60 or R61; according to EU category 3: Xn with R62 or R63) • "dangerous to the environment" (N with R50, R50/53, R51/53 or R59) - No pigments based on Hg, Pb, Cd or CrVI compounds. - No pigments that are able to set free carcinogenic amines (20 substances listed).
KOR	- VOCs, volatile aromatic hydrocarbons, Lead, cadmium, mercury, selenium, arsenic, copper, antimony, hexavalent chromium, manganese, zinc, and barium and triphenyl tins (TPT) and tributyl tins (TBT).
NLD	- No lead, chrome or cadmium; no substances that are forbidden by EU-directive 67/548/EEC; no use of carcinogenic pigments.
USA	- Federal law: use of vegetable-based inks. - State regulation: limited petroleum based products, heavy metals barium, copper, zinc.

*See Annex 12 for EU R-Phrases

Table 7-18. Chemical criteria for batteries (responses to the OECD questionnaire)

Country	Chemical Criteria
KOR	- Mercury, cadmium, hexavalent chromium, electrolyte of lead-acid.
SWE	- Mercury, cadmium, lead

Table 7-19. Chemical criteria for packing materials (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Free of PVC.

Table 7-20. Chemical criteria for deodorants (responses to the OECD questionnaire)

Country	Chemical Criteria
AUT	- Renouncement of deodorants is recommended, in some cases allergenic fragrances according to Directive 2003/15/EC to include the allergenic perfume ingredients from the list first established by the Scientific Committee on Cosmetics and Non Food Products (SCCNFP) in its opinion SCCNFP/0017/98 are sometimes renounced or weighted with minus points.

Table 7-21. Chemical criteria for computer, printer, copiers, etc. (responses to the OECD questionnaire)

Country	Chemical criteria
AUT	- Depending on product type: • Exclusion of several flame retardants; Hg, Pb, Cd. • Limiting values for emissions: ozone, styrene, benzene, particulate matter.

Table 7-22. Chemical criteria for bed frames, mattresses (responses to the OECD questionnaire)

Country	Chemical criteria
JPN	Formaldehyde

Table 7-23. Fermented compost using sewage sludge (responses to the OECD questionnaire)

Country	Chemical criteria
JPN	Arsenic, cadmium, mercury, nickel, chrome, lead

Table 7-24. Chemical criteria for glued laminated timber, plywood, laminated veneer lumber (responses to the OECD questionnaire)

Country	Chemical criteria
JPN	Formaldehyde

Table 7-25. Chemical criteria for particle board, fiber board, and wood-type cement board (responses to the OECD questionnaire)

Country	Chemical criteria
JPN	Formaldehyde

Table 7-26. Chemical criteria for new proposed product categories (responses to the OECD questionnaire)

Country	Candidate product category	Chemical criteria
AUT	-Disinfectants	-
JPN	-List will be modified in accordance with domestic regulations	- in accordance with domestic regulations
KOR	- Writing materials - Chair and sofa - Bed - Coffee maker	- VOCs, volatile aromatic hydrocarbons, heavy metals - PVC, VOCs, formaldehyde - PVC, VOCs, formaldehyde, PBBs (polybrom -inated biphenyls), PBDEs (polybromodiphe - nyl ethers) - Lead, Cadmium, Mercury, short-chain chlorinated paraffins(C=10~13), PBBs (polyb -rominated biphenyls), PBDEs (polybromodi - phenyl ethers)
NLD	- All of them especially when better and environmental friendly alternatives arise	- e.g. bromide that can be replaced by better alternatives for flame retardant purposes
SWE	- IT products - Medical devices - Medicals	- BFR[1], heavy metals - BFR, heavy metals, softeners in plastics - Degradability, Eco toxicity, accumulation
USA	- Electronic products	- Lead, mercury, cadmium, chromium; hazardous wastes, hazardous air and water emissions

Note 1. PBB, PBDE and Chlorinated Paraffins.

Table 8. Other selection criteria for products within product categories than requirement or guideline for the content limit of hazardous substance (responses to the OECD questionnaire)

Country	Selection criteria for products within product categories
AUT	-Biodegradability in case of cleaning agents -Ames test in case of toner cartridge -Not only the content of hazardous substances is of importance, but also especially in the case of building products the measurement of emissions, because these values represent the exposure of users to hazardous substances
JPN	No use
KOR*	- Environmental aspect: life cycle considering at the stage of manufacturing, use and disposal such as recycled material, energy saving, water saving, noise, biodegradability, repairable - Product quality - Information for consumer - Test and verification methods
NLD*	- Requirements related to the production process; environmental management systems (ISO 14001)
USA*	- Effects on other considerations of concern, for instance, some chemicals may allow better recyclability so to enhance that aspect of a product, certain chemicals may be limited. Guidelines and regulations are often based on hazard and exposure characteristics, so considerations such as chemical toxicity, bioaccumulation, degradation, and exposure characteristics are often used. Other impacts throughout the product life cycle, such as energy use, air and water emissions, and waste quantities are also considered at times.

* Not only chemical criteria were mentioned

Table 9-1. Current chemical criteria for printing paper (Web search on Eco-labels)

Substances/properties	Criteria			
	AUS	JPN	USA	EU
Papers	Publishing paper & office paper	Paper for communication & printing	Paper products used in the preparation of food	Copying & printing paper
Acryl amide	No use	-	-	Not contain
4-aminoazobenzene	No use	-	-	-
2-amino-4-nitrotoluene	No use	-	-	-
4-chloroaniline	No use	-	-	-
p-cresidine	No use	-	-	-
2,4 – diaminioanisole	No use	-		-
4,4 – diaminodiphenyl-methane	No use	-	-	-
2,4-diaminotoluene	No use	-	-	-
3,3'-dimethyl-4,4'-diaminodiphenylmethane	No use	-	-	-
EDTA(ethylene diamine-tetra-acetic acid or its salts)	≤ 2.5kg of EDTA / DTPA per ton of pulp	-	-	-
2-naphtylamine	No use	-	-	-
2,4-toluylenediamine	No use	-	-	-
2,4,5 –trimethylaniline	No use	-	-	-
Carcinogenic substances[1]	No use (categories 1, 2A and 2B, in dyestuff)	-	-	-
Heavy metals	O	-	o	o
Chlorine	No use	No use	-	No use
Alkyl phenol ethoxylates (APEOs)	-	-	-	No use
Dangerous, hazardous or toxic substances or preparations[2]	-	-	-	Total ≤ 100ppm
Surfactants	-	-	-	Bio degradable
Azo based dye[3]	-	No use	-	No use
Fluorescent whitening agents	-	Minimum use	-	-
Formaldehyde	-	-	No use	-

Notes 1. Carcinogenic substances in categories 1, 2A and 2B as classed by the International Agency for Research on Cancer (www.iarc.fr)

2. Directive 67/548/EEC

3. 4-Aminobiphenyl, Benzidine, 4-Chloro-o-toluidine, 2-Naphthylamine, o-Aminoazotoluene, 5-Nitro-o-toluidine, p-Chloroaniline, 4-Methoxy-m-phenylenediamine, 4,4.-Methylenedianiline, 3,3.-Dichlorobenzidine, 3,3.-Dimethoxybenzidine, 3,3.-Dimethylbenzidine, 4,4.-Methylenedi-o-toluidine, 6-Methoxy-m-toluidine, 4,4.-Methylenebis(2-chloroaniline), 4,4.-Oxydianiline, 4,4.-Thiodianiline, o-Toluidine, 4-Methyl-m-phenylenediamine, 2,4,5-Trimethylaniline, O-anisidine

Table 9-2. Current chemical criteria for toner cartridges (Web search on Eco-labels)

Substances/properties	Criteria		
	JPN	KOR	NOR
Ozone depletion substance	No use	No use	-
Styrene	≤ 0.07mg/m3(emission)	-	-
Cr	Not contain	Not contain	-
Pb	Not contain	Not contain	-
Hg	Not contain	Not contain	-
Se	Not contain	Not contain	-
Cd		Not contain)	-
flame retardant[1]	Not contain	No use	-
Carcinogenic substances[2]	No contain(Groups 1, 2A and 2B)	not contain(Groups 1, 2A and 2B)	Not contain
Halogenated compounds		Not contain(plastic)	
Dangerous, hazardous or toxic substances or preparations[3]	not contain: R26~R27, 40, R42, R45~ R46, R49, R60~R64, AMES test(negative)	not contain: R26~R27, 40, R42, R45~ R46 R49, R60~R64,	≤ 2% (wt, toner powder)
Mutagenic substances	-	-	Not contain
Allergenic	-	-	Not contain
Toxic to reproduction	-	-	Not contain

Note: 1. PBBs (polybrominated biphenyls), PBDEs (polybromodiphenylethers), short-chain chlorinated paraffins(C=10~13).

2. Carcinogenic substances in categories 1, 2A and 2B as classed by the International Agency for Research on Cancer (www.iarc.fr).

3. Directive 67/548/EEC (See Annex 12 for R-Phrases)

Table 9-3. Current chemical criteria for adhesives (Web search on Eco-labels)

Substances/properties	criteria			
	AUS	KOR	NOR	USA
Adhesives	Adhesives	Adhesives	Adhesives	Commercial adhesives
APEO(Alkylphenol ethoxylates)	No use	-	-	-
Phthalates/phthalates with alkyl	No use	No use	No use	-
Solvent	-	-	-	LC50 < 2,000 ppm of vapour
VOCs	< 5%(wt)	< 0.1%(wt) < 1%(wt) (outdoor) ≤ 0.2mg/㎥·h (emission, after 28days)	< 1%(wt) < 0.2 g/m^{2}h (TVOC, emission)	≤ 130~660 g/L ≤ 55~70% (wt) (aerosol type)
Bioaccumulative preservative	No use	-	-	≤ 0.1%(wt)
Carcinogenic substances[1]	No use(1,2A,2B)	-	≤0.1%(wt,)	≤ 0.1%(wt)
Reproduction toxics	-	-	-	≤ 0.1%(wt)
Cd	-	≤ 0.5mg/kg	-	-
Pb	-	≤ 50mg/kg	-	-
Hg	-	≤ 0.5mg/kg	-	-
Cr	-	≤ 0.5mg/kg	-	-
Flame retardant[2]	-	No use	-	-
Formaldehyde	-	≤ 0.5mg/L (emission, indoor)	--	-
Dangerous, hazardous or toxic substances or preparations[3]	-	-	≤ 1%(wt, individual substances) ≤ 2%(wt, total)	-
Allergenic substances	-	-	≤0.1%(wt)	-
Mutagenic substances	-	-	≤0.1%(wt)	-
Toxic to the reproductive system	-	-	≤0.1%(wt)	-
Alkylphenol ethoxylates	-	-	No use	-
Halogenated solvents	-	-	No use	-
Ethylene glycol ethers	-	-	No use	-
Preservatives	-	-	non-bioaccum.	-

Note: 1. Carcinogenic substances in categories 1, 2A and 2B as classed by the International Agency for Research on Cancer (www.iarc.fr).
2. PBBs (polybrominated biphenyls), PBDEs (polybromodiphenylethers), short-chain chlorinated paraffins(C=10~13).
3. Directive 67/548/EEC.

Table 9-4. Current chemical criteria for detergents (Web search on Eco-labels)

Substances/properties	Criteria			
	AUS	KOR[1]	NOR	EU
Detergents	Laundry	Laundry	Laundry & stain remover	Laundry
EDTA(ethylene diamine-tetra-acetic acid or its salts)	No use	-	No use	-
mitromusk compounds	No use	-	-	-
NTA(nitrilotriacetic acid or any of its salts)	No use	Total: ≤ 0.5g/wash	-	-
Phosphates	≤ 25 mg/L	-	-	≤ 25g/wash
Trichloroethane	No use	-	-	-
xylene sulfonate	No use	-	-	-
Carcinogenic substances	No use	-	No use	-
Contact sensitizer	≤ 1% of ingredients	-	-	-
Tetragenic substances	≤ 1% of ingredients	-	-	-
Total chemicals	-	-	-	≤ 100g/wash
Insoluble inorganic ingredients	-	-	-	≤ 30g/wash
Toxicity to aquatic organisms(CDVtox)	-	-	-	≤ 4500/wash
Nitromusk compounds	-	-	-	Not contain
Formaldehyde	≤ 0.1%	-		-
Not readily biodegradable quaternary ammonium salts	-	-	-	No use
Dangerous, hazardous or toxic substances or preparations[2]	-	-	≤ 0.050 g/wash (R50/53 + R51/53) ≤ 0.12 g/wash (. R52/53) ≤ 7.5 g/wash (. R50)	No use: R40, R45~R46, R49, R50-53, R60~, R64, R68
Alkylphenol ethoxylates(APEOs)	-	No use	No use	Not contain
Mutagenic substances	≤ 0.1% of ingredients	-	No use	-
Surfactants	-	-	readily biodegradable	-
Toxic to reproduction	-	-	No use	-
Reactive chlorine compounds	-	-	No use	-

Note: 1. Korea uses a scoring system.
2. Directive 67/548/EEC (See Annex 12 for R-Phrases)

Table 9-5. Current chemical criteria for cleaners (Web search on Eco-labels)

Substances/properties	Criteria			
	AUS	NOR	USA	EU
Cleaners	General	General	Household	General
APEO (Alkylphenolethoxylates)	No use	-	-	No use
Butoxy ethanol	No use	-	-	-
Fragrance (nitromusk compounds)	No use	No use	-	No use
NTA(nitrilotriacetic acid or any of its salts)	No use	No use	-	No use
VOCs	< 10%(wt)	-	<10%(wt)	<10%(wt)
Halogenated solvent	No use	-	-	-
Carcinogenic substances	No use	-	-	-
Contact sensitizer	≤ 1%	--	-	<= 0.1%
Mutagenic Substances	≤ 0.1%	-	-	-
Ozone depletion substance	-	-	-	-
Phosphorous compound	-	No use	<0.5%(wt, total)	0~ 1.0 g/100 g of product.
Reproduction toxics	-	-	No use	-
Cd	-	-	≤ 0.1mg/l	-
Pb	-		≤ 0.5mg/l	-
Hg	-		≤ 0.02mg/l	-
Cr	-		≤ 0.5mg/l	-
As	-		≤ 0.5mg/l	-
Ni	-	-	≤ 0.5mg/l	-
Se	-	-	≤ 0.5mg/l	-
Surfactants	-	Biodegradable	-	Biodegradable
EDTA(ethylene diamine-tetra-acetic acid or its salts)	-	No use	-	No use
. Dangerous, hazardous or toxic substances or preparations[1]	-	Total of R 50/53 + R 51/53 + R 52/53 ≤ 0,020 gram / litre in-use solution	-	No use: R31, R40, R45~46, R49, R68, R50~R533, R59~R64
Chlorine compound	-	No use	-	-
Preservatives	-	Not classified as bio accumulative	-	-

Note: 1. Directive 67/548/EEC (See Annex 12 for R-Phrases)

ANNEX 9

Examples of Product Categories and Factors for Choosing Product Categories (Green Private Procurement)

Tables 10, 11 and 12 were prepared on the basis of companies answers to an OECD questionnaire on consideration of chemical safety in green procurement.

Table 10. Examples of current product categories with chemical criteria (responses to OECD questionnaire as of 15 August 20005)

Company	Product category	Chemical criteria
Bayer MeterialScience AG[1] (DEU)	- e.g. medical applications, food contact, optical data storage	- National and international legislative requirements/regulations, company guidelines, and customer demands
C&A Floorcoverings (USA)	- Carpet components/formula ingredients	- Desire low VOC - Avoid pesticides/antimicrobials - Avoid carcinogens (Prop 65 list) - Avoid reproductive toxins (Prop 65 list) - Avoid heavy metals (lead) - Avoid less desirable flame retardants (i.e. Antimony, PBDEs) - Avoid dyes with hexavalent chromium - Avoid odorous substances
	- Carpet Adhesives/sealers	- Desire low VOC - Low or no formaldehyde - Desire water-based formula (avoid solvents) - Low odour
	- Cleaning and Maintenance chemicals for facility	- Desire low VOC - Non toxic - Non hazardous (i.e. non carcinogenic) - No reproductive toxins), etc.
KAO Corporation (JPN)	- Prohibited substances - Limited use substances - Substances requiring careful handling	- PCBs, asbestos, - Ozone layer-depleting substances, certain heavy metals - Substances covered by the PRTR Law, the Poisons and Deleterious Substances Control Law, etc
LG Chem (KOR)	- Secondary batteries - Display & optical materials - Printed circuit materials	- MEK, toluene, chlorinated paraffin, Pb, Hg, Cd, Cr^{6+}, PBB, PBDE, asbestos, CFC, methyl bromide, etc.
Samsung Electronics (KOR)	- All products	- Chlorinated paraffin, Pb, Hg, Cd, Cr^{6+}, Ni, Sn, As, PBB, PBDE, PCB, PCT, PCNs (with three or more chlorine substituents), ozone layer-depleting substances, asbestos, formaldehyde, Azo colorant.

Note: 1. The company produces, purchases and sells products according to national and international legislative requirement/regulations, company guidelines, and regulations/requirements and according to customer demands. Consequently, it produces, purchases and sells products in a very large number of very specific categories, e.g. medical applications, food contact, optical data storage, etc.

Table 11. Proposals for other product categories (responses to OECD questionnaire as of 15 August 20005)

Company	Product category	Chemical criteria
Bayer MeterialScience AG[1] (DEU)	- Accordingly for new applications of products[1]	-
C&A Floorcoverings (USA)	-[2]	-
LG Chem (KOR)	- Building materials (flooring, window frame, etc.)	- MEK, toluene, chlorinated paraffin, Pb, Hg, Cd, Cr^{6+}, PBB, PBDE, asbestos, CFC, methyl bromide, etc.
Samsung Electronics (KOR)	- All products	- Phthalates, PVC, Be, other chlorinated flame retardants, brominated flame retardants (TBBP-A).

Note: 1. Extension will be made accordingly for new final applications of their performance materials when they have differing requirements compared with current product categories.

2. The company would consider extending their list of product categories in the future, however, all current purchases made by the company take chemical safety into account.

Table 12. Factors for choosing product categories (responses to the OECD questionnaire)

Company	Factors for the choosing product categories (with rank)
Bayer MeterialScience AG (DEU)	Human safety and environmental protection[1]
C&A Floorcoverings (USA)	Possibility of exposure to employees and users
KAO Corporation (JPN)	Content/properties of hazardous substances Possibility of exposure to users Target users (*e.g.* sensitive groups) and profit related to the product category Use volume of company Domestic regulations
LG Chem (KOR)	Possibility of exposure to users Content/properties of hazardous substances Purchaser's Demand Domestic regulations International agreements
Samsung Electronics (KOR)	International regulation Buyer requirement Properties of hazardous substances

Note: 1. There is no specific ranking, but with priority for human safety and environmental protection in general.

ANNEX 10

Examples of Criteria for Selecting Products within Product Categories (Green Private Procurement)

Tables 14-1 and 14-2 present some examples found in a wide Web search covering the companies Websites listed under Table 13; all these Websites provide examples of criteria for specific product categories.

Table 13. General Information on the private companies found from Web search

Company	Main product/purchasing items	ISIC*
ABB Group (CHE)[1]	- Control systems, high & low voltage products, industrial solutions, electronics, etc.	D31
Canon (JPN) [2]	- Cameras, printers, semiconductor production equipment, computer peripherals, etc.	D30, D32
Daikin Industries (JPN) [3]	- Air conditioners, air cleaners, refrigerators, oil hydraulic products for industrial machinery, fluoropolymers, etc.	D24, D29
D&M Holdings (JPN) [4]	- Recording & broadcast equipments, audio & video, TV, etc.	D32
Electrolux (SWE) [5]	- Appliances & equipment for kitchen, cleaning and outdoor use	D29
IKEA (SWE) [6]	- Furniture	D36
Nike (USA) [7]	- Sports wear, etc.	D18, D19
Nokia (FIN) [8]	- Mobile phones, multimedia, enterprise solutions, etc..	D32
Agere Systems[9]	- Hard disk drives, mobile phones, wireless infrastructure, wireless networks, modems, integrated circuits (ICs), IC design & manufacturing, communication software	D30, D32
Sony (JP)[10]	- Audio, video, televisions, information & communications, semiconductors, electronic components	D 32

Note: 1. www.abb.com/global/abbzh
2. www.canon.com/procurement/index-e.html
3. www.daikin.com/environment/index.html
4. www.dm-holdings.com/eng/green
5. www.electrolux.com/Files/RML/Electrolux_Group_RML_2005_A4.pdf
6. www.ikea-group.ikea.com/PDF/IKEA_SaER.pdf
7. http://eco.fiti.re.kr/pds/5-1.pdf
8. www.nokia.com/BaseProject/Sites/NOKIA_MAIN_18022/CDA/Categories/AboutNokia/Environment/ProgramsandPractices/DesignforEnvironment/NokiaSubstanceList/Content /StaticFiles/nokiasubstancelistversion6-0.xls
9. www.agere.com/ehs
10. www.sony.net/SonyInfo/procurementinfo/ss00259/qfhh7c000000bbv6-att/ss259_excerpts_j.pdf

International Standard Industrial Classification of all Economic Activities, Rev. 3.1 (UN): ISIC

D18: Manufacture of wearing apparel, dressing and dyeing of fur.
D19: Tanning and dressing of leather, manufacture of luggage, handbags, saddlery, harness and footwear.
D24: Manufacture of chemicals and chemical products.
D29: Manufacture of machinery and equipment.

D30: Manufacture of office, accounting and communication equipment and apparatus.
D31: Manufacture of electrical machinery and apparatus.
D32: Manufacture of medical, precision and optical instruments, watches and clocks.
D36: Manufacture of furniture.

Table 14-1. Chemical Criteria for manufacturers of radio, TV and communication equipment and apparatus (D32) – Web search

Substances/properties	Chemical criteria		
	Canon (JPN)	D&M Holdings (JPN)	Nokia (FIN)
CFCs (chlorofluorocarbons)	No use	No use	No use
1,1,1-Trichloroethane			
HCFCs (hydrochlorofluorocarbons)			
PFCs (perfluorocarbons)			
HFCs (hydrofluorocarbons)			
Trichloroethylene			
Tetrachloro ethylene			
Dichloro methane (for cleaning)			
Dichloro methane			
Cadmium and cadmium compounds		No use	No use/ ≤ 0.1% wt
Hexavalent chromium compounds			
Lead and lead compounds			
Mercury and mercury compounds			No use/ ≤ 0.005~2.0% wt
Polybrominated biphenyls (PBBs)			No use/ ≤ 0.1% wt
Polybrominated diphenyl ethers (PBDEs)			
Polychlorinated biphenyls (PCBs)			No use/ ≤ 0.005% wt
Polychlorinated naphtahalenes (3 ≤)			
Asbestos			No use
Radioactive substances			
Azo colorant		Use/content is prohibited according to use	≤ 0.1% wt
Arsenic and arsenic compounds			≤ 0.1% wt (plastic)
Beryllium and beryllium compounds			No use
Phthalates			
Formaldehyde			
Bis (tri-n-butyltin) oxide (TBTO)		Controlled chemical substance	
Antimony and antimony compounds			≤ 0.1% wt in plastic (Sb_2O_3)
Bismuth and bismuth compounds			
Nickel and nickel compounds			No use
Selenium and selenium compounds			
Brominated flame retardants			
Vinyl chloride polymer (PVC)			phased out by 31.12.2005
Aliphatic CHCs			≤ 0.1% wt
Benzene			≤ 0.1% wt
Short Chained Chlorinated Paraffins			No use/ ≤ 0.1% wt
Substances that may cause skin sensitization			No use

Table 14-2. Chemical criteria for manufacturers of machinery and equipment (D29)

Substances/properties	Chemical criteria	
	Daikin Industries (JPN)	Electrolux (SWE)
CFCs (chlorofluorocarbons) 15 types	No use	No use
1,1,1-Trichloroethane		
HCFCs (hydrochlorofluorocarbons) 34 types		restricted
1,2-dibromo-3-chloropropane		No use
TBannedBis(chloromethyl) ether		
Monochlorodimethylether		
Halogenated organic phosphorus		Substance of concern
PAHs (Polycyclic Aromatic Hydrocarbons)		No use
PCDEs (polychlorinated diphenylethers)		
CMR substances		
Bisphenol A		Substance of concern
Biocide		No use
Halogenated org. phosphorus flame retardants		restricted
HFCs (hydrofluorocarbons)		No use
HBFCs (HydroBromoFluoroCarbons		
Tetrachloro ethylene		
Dichloro methane		
Cadmium and cadmium compounds	Phased out in march 2006	restricted
Hexavalent chromium compounds		
Lead and lead compounds		
Mercury and mercury compounds		
Polybrominated biphenyls (PBBs)		
Polybrominated diphenyl ethers (PBDEs)		restricted
Polychlorinated biphenyls (PCBs)	No use	No use
Polychlorinated naphtahalenes (3 ≤)		
Asbestos		No use
Radioactive substances	Must be grasped, reduction be advanced	
Azo colorant	Phased out in march 2006	
Arsenic and arsenic compounds	Must be grasped, reduction be advanced	restricted
Beryllium and beryllium compounds		Substance of concern
Phthalates		
All chlorinated solvents		No use
Bis (tri-n-butyltin) oxide (TBTO)	No use	
Antimony and antimony compounds	Must be grasped, reduction be advanced	
Bismuth and bismuth compounds		
Nickel and nickel compounds		Substance of concern
Selenium and selenium compounds		
Brominated flame retardants		
Vinyl chloride polymer (PVC)	Phased out in march 2006	Substance of concern
Benzene		No use
Short Chained Chlorinated Paraffins	No use	Substance of concern
Magnesium	Must be grasped, reduction be advanced	
Tributyl tins & triphenyl tins		

ANNEX 11

Sectorial Approach: Example of the Building Sector (including furniture)

This annex includes information specifically related to consideration of chemical safety in green procurement in the building sector. While the workshop focuses on product categories related approaches, it should also consider an example of sector-based approach. The building sector was suggested. Consideration of chemical safety in the building sector is important due to increasing concern with health effects related to indoor pollution and potential long term exposure to dangerous chemicals. The building sector covers specific product categories such as building materials and building components (*i.e*. finishes, paints, backing materials, biocides); furthermore, it highlights sector-specific considerations such as an increase of indoor pollution due to an increase of thermal insulation. Efforts to increase energy efficiency and reduce greenhouse gas emissions, coupled with the lack of adequate ventilation, have sometimes exacerbated the indoor air problem by making buildings more air-tight (Environmental Sustainable Buildings – Challenges and Policies, OECD, 2003, page 28).

Due to buildings long life and potential long term exposure of people living in buildings, product categories with potential indoor emission of dangerous chemicals during service-life deserve particular attention.

Typical examples of dangerous chemical that should be considered in a building sector approach for green procurement are the following: Formaldehyde, asbestos, heavy metals (in particular lead), VOCs and any chemical with long term effects (carcinogenicity, reproductive toxicity, mutagenicity, and bioaccumulation) or with sensitizing effects.

Information source: Environmental Sustainable Buildings- Challenges and Policies, OECD, 2003

The OECD book *Environmentally Sustainable Buildings – Challenges and Policies, 2003,* presents an analysis of the environmental impacts of the building sector and of current policies to mitigate these impacts. The following paragraphs are extracted from this book, which mentions public green procurement and environmental labelling amongst a wide range of policy instruments for environmental sustainable buildings. With regard to consideration of chemical safety, the document covers labelling schemes rather than public green procurement as such.

Labelling schemes

"Six countries have implemented environmental labelling schemes for buildings that have assessment criteria related to indoor air pollution. In seven countries, environmental labelling schemes for building materials and products are reported to have criteria on the quantity of pollutant sources contained in building materials and products (page 42)."

"Many of the existing environmental labelling schemes for building materials and products, *i.e.* the Blue Angel in Germany, already cover the impact of building materials on indoor air quality (page 124).

Relationship between building sector and building materials

"It is assumed that environmental labelling for buildings and building materials are interrelated. For instance, under the Housing Performance Indication Scheme in Japan, "Protection from indoor air pollution" is evaluated according to the rating on building materials and products used for interiors. Japan categorizes particle boards according to their formaldehyde content (page 124)."

"In order for labelling schemes for building to work, designers need to be able to understand which materials contain which (and how much) pollutant. Therefore, it is important to co-ordinate two information tools: one for communication between designers and their clients (labelling for buildings) and the other for communication between building materials manufacturers and designers (labelling for building materials) (page 162)."

Information source: Ecologically Sustainable Development (ESD) Design Guide for Australia Government Buildings

This guide includes recommendations for material selection such as: ensure asbestos and other mineral fibers are eliminated from the occupied spaces; minimize materials that emit volatile organic compounds (VOCs) and have formaldehyde emissions; ensure that the plant refrigerant has zero Ozone Depleting Potential (ODP) and a Global Warming Potential (GWP) of below 10. The guide also generally recommends choosing materials with low toxic emissions.

In order to minimize the impact on the environment from the production of particular materials, the guide suggests specifying that materials do not have any of the National Pollutant Inventory (NPI) materials in them or used in their production.

Information source: Danish EPA Guideline for Public Purchasers: Desks and Tables

This guideline could be part of a building sector based approach. It takes into account the life cycle of furniture. It provides detailed recommendations related to chemical safety for producing, purchasing, using, cleaning and disposal of desks and tables. Degassing is mentioned as a factor that can have significant negative health effect during use of furniture. One of the most important environmental considerations with respect to chemical safety in the working environment is as follows:

"Paint, varnish, glue and other forms of surface protection should as far as possible be free of organic solvents and heavy metals. Surface protection of metal should consist of *e.g.* water-based paint or powder paints. Metal parts should be degreased without the use of organic solvents, *e.g.* using an alkaline dip."

"In the case of wood, water-based varnishes can be used. UV-hardened varnishes can also be used." (Worker protection is needed due to the risk of allergy).

The guidelines also recommends, when purchasing desks and tables, to select items labeled with the Nordic Swan Eco-label to ensure that many important environmental factors have been taken into account.

Information source: European Federation of Allergy and Airway Disease Patients Association

"The indoor environment in any kind of building, including dwellings, is a result of the interaction between building system (original design and later modifications in the structure and mechanical systems), construction techniques, contaminant sources (building materials and furnishings, moisture, processes and activities within the building), building occupants and outdoor sources"(EFA, Towards Healthy Air in Dwelling in Europe: Indoor Air Quality (www.efanet.org)). Among the various sources, the indoor sources related to hazardous chemicals are:

- Textured surfaces such as carpeting, curtains, and other textiles
- Materials containing asbestos
- Paint, caulk, adhesives
- Furnishings emitting volatile organic compounds
- Office equipment (volatile organic compounds, ozone)
- Supplies (solvents, toners, ammonia)
- Cosmetics
- Cleaning materials
- Deodorisers and fragrances
- Pesticides from pest control activities

These sources include product categories that have been discussed at the workshop. Many product categories are related to indoor pollution; some product categories such as office furniture, paints, wall paper, indoor floor coverings, adhesives, cleaners, detergents, clothing, and pesticides are directly related to building sector. A few examples of the corresponding chemical criteria are shown in Annex 8.

Information source: responses to the OECD questionnaires and Web search

Among 21 product categories included in the OECD questionnaire for governments, 19 product categories relate to indoor air pollution, half of which can be considered as specifically referring to building sector (Office furniture, fluorescent lamps, paints, wall paper, indoor floor coverings, adhesives, cleaners, pesticides). Criteria for these product categories can be found in Annex 8.

It was also noted in the responses to the questionnaire that not only the content of hazardous substances is of importance, but also especially in the case of building products the measurement of emissions, because these values represent the exposure of users to hazardous substances.

Production items of two companies, which responded the OECD questionnaire for the private sector, relate to building sector (floor covering, home appliances). General criteria for these product categories can be found in Annex 8. Furthermore, examples of criteria for room air conditioners, room air cleaners and refrigerators can be found on Daikin Industries, Ltd. Website, and examples of criteria for furniture, accessories, bathrooms and kitchens can be found on IKEA Website.

Information source: presentation made at the workshop

In his presentation on green purchasing activities in Japan, Mr. Fukatsu mentioned the criteria for VOC reduction in building materials and furniture. The criteria result from a revision of the School Hygiene Standard (air quality standards for formaldehyde, toluene, xylene and

paradichlorobenzene) and from a revision of the Building Standards Law (ban of chlorpyrifos use in building materials, regulation concerning formaldehyde for materials and ventilating equipment, ranking of adhesives and wood building materials with respect to formaldehyde concentration).

The guidelines for purchasing office furniture (Green Purchasing Network) include low release levels of formaldehyde, toluene, xylene and p-dichlorobenzene; information is required on the use of lead, cadmium compound, plumbic compound, and air/or mercuric compound.

ANNEX 12

EU R-Phrases

R23	Toxic by inhalation
R24	Toxic in contact with skin
R25	Toxic if swallowed
R26	Very toxic by inhalation
R27	Very toxic in contact with skin
R28	Very toxic if swallowed
R31	Contact with acids liberates toxic gas
R39	Danger of very serious irreversible effects
R40	Limited evidence of a carcinogenic effect (carcinogenic cat. 3; mutagenic cat. 3)
R42	May cause sensitization by inhalation
R43	May cause sensitization by skin contact
R45	May cause cancer (carcinogenic cat. 1 or 2)
R46	May cause heritable genetic damage (mutagenic cat. 1 or 2)
R48	Danger of serious damage to health by prolonged exposure
R49	May cause cancer by inhalation (carcinogenic cat. 1 or 2)
R50/53	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
R50	Very toxic to aquatic organisms
R51/53	Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment
R59	Dangerous for the ozone layer
R60	May impair fertility (toxic to reproduction cat. 1 or 2)
R61	May cause harm to the unborn child (toxic top reproduction cat. 1 or 2)
R62	Possible risk of impaired fertility (toxic to reproduction cat. 3)
R63	Possible risk of harm to the unborn child (toxic to reproduction cat. 3)
R64	May cause harm to breastfed babies
R68	Possible risk of irreversible effects