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ENVIS Centre on:

Eco-labelling and Eco-friendly Products

Foreword

Cosmetics are a huge industry and in today's bustling cosmetic market, cosmetic companies not only target working class but all class at large whether a man or woman. Even those who never "make up" usually keep a variety of beauty products in their bathroom, including anti-perspirants, hand lotions, shampoos, and shaving kits.

The cosmetic industry uses hundreds of synthetic chemicals in its products, from lipsticks and lotion to shaving cream to shampoo. The effects of ingredients beauty products contain can be more than just skin deep.

The major loopholes in regulation allow the cosmetics industry to use synthetic chemicals into personal care products, even if they are linked to cancer, infertility, or birth defects. At the same time as untested chemicals have been steadily introduced into our environment, breast cancer incidence has risen dramatically. Despite the lack of external regulation of the cosmetic industry, many manufacturers make substantial efforts to self-regulate their own performance. Although these efforts at self-regulation are creditable, but the consumer has no easy way to determine which companies have been stringent about self-regulation and which products have been test most exhaustively for safety.

The market for green products in cosmetic industry is expanding worldwide. There are hundreds of companies claim their products as "Green" or "Organic" better for consumers and better for the environment. They claim natural cosmetics made without parabens, petro chemicals, or other toxic chemicals. Most of them are using natural ingredients but generally it is not defined or labeled. The cosmetic industry is now using eco-labels as a means to reposition itself within the market and substantiate green claims for products.

Eco-labels are used to identify products, raw materials, or companies that meet a particular organization or government agency's standards in terms of organic content, or minimizing risks to humans, animals, or the environment. Applying an eco-label to a product or raw material is an excellent way to inform consumers and add a point of market differentiation.

The inadequacies of the various laws regulating cosmetics suggest that the consumer must be vigilant. It really pays to take note of the chemicals used in your cosmetics and researching the effect of those chemicals. Whenever possible, make the switch to eco-friendly brands.

Look gorgeous, stay healthy, and help save the planet simultaneously.

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Cosmetics



***"A woman without paint is like food without salt."
- Roman philosopher, Plautus***

Cosmetics by definition are a preparation designed to beautify the body by direct application. It beautifies or improves the beauty especially of the face. As long as there are people on the earth, cosmetics will be in use.

The word cosmetics derives from the Greek κοσμητική τέχνη (kosmetikē tekhnē), meaning "technique of dress and ornament", from κοσμητικός (kosmētikos), "skilled in ordering or arranging" and that from κόσμος (kosmos), meaning amongst others "order" and "ornament". The word "cosmetae" was first used to describe Roman slaves whose function was to bathe men and women in perfume. Around 3500 BC evidence of cosmetics usage was found. As recorded in Old Testament Greeks, Romans, and Egyptians used cosmetics. The Biblical book of Esther also describes various beauty treatments.

Civilizations have used forms of cosmetics -- though not always recognizable to cosmetics users today -- for centuries in religious rituals, to enhance beauty, and to promote good health. Cosmetic usage throughout history can be indicative of a civilization's practical concerns, such as protection from the sun; class system; or of its conventions of beauty.

Cosmetics are in use starting from ancient Egyptian in 10,000 BC till today – 21st century. Scented oils and

ointments to clean and soften skin and mask body odor were very common during ancient Egyptian period. To adorn their eyes, they were using products made of copper and lead ore. During 100 AD- 400 AD Romans used barley flour and butter on their face and in India henna was used as a hair dye. Henna was also used in North African countries. During 1400 AD - 1500 AD only aristocrats of Europe, Italy and France used cosmetics and these countries emerged as hub of manufacturing industries. They used arsenic in face powder. Initially fragrances were amalgams of naturally occurring ingredients but later chemicals replaced them. In 19th and early 20th century use of chemicals in cosmetics caused health problems. One such mixture, Ceruse, made from lead turned out to be toxic and was the cause for physical ailments like facial tremors, muscle paralysis, and even death.

The environmental health movement brings challenges to the personal care products and cosmetics industry. In 1999 a meeting of Cosmetics Harmonization and International Cooperation (CHIC) was held in Brussels, Belgium to discuss broad cosmetics aspects: safety verification, an international alert system and memorandum of cooperation. US FDA, Japanese Ministry of Health, Health Canada and the European Union attended the conference. The Cosmetic, Toiletry and Fragrance Association (CTFA) now known as the Personal Care Products Council (the "Council") supports numerous legislative initiatives and launched

<http://cosmeticsinfo.org> to assist consumers in understanding the products they use and the industry record of safety in the formulation of those products.

Regulations

For ages chemicals are used in cosmetics and some ingredients in cosmetics and personal care products are hazardous for health. The manufacturing and sale of cosmetics are regulated by government entities across the world. There are specific regulatory systems in each country but they have a common goal to ensure that cosmetic products are safe and properly labeled. The European Union and USA are the largest market of cosmetic products. Now the Indian market for cosmetic products is growing exponentially. As per the US Food and Drug Authority cosmetics and their ingredients are not subject to its pre-market approval authority. Only exceptions are colour additives. FDA may pursue enforcement action against violating products, or against industries or individuals who violate the law. It is the responsibility of cosmetic companies to substantiate the safety aspect of their products and ingredients before launching. If it fails to substantiate the safety of its product it will be considered as misbranded unless a warning statement is displayed on the label:

Warning--The safety of this product has not been determined." (21 CFR 740.10)

FDA may take regulatory action if it has information to support that a cosmetic is adulterated or misbranded.

The European Union cosmetic legislations are based on Council Directive 76/768/EEC of 27 July 1976, and provide a general guideline of the laws for Member States relating to cosmetic products (Cosmetics Directive). It holds the manufacturer or importer of cosmetics responsible for demonstrating product safety and the intended use. Regulations are enforced at national level, and each country in the EU has an authoritative body that is responsible for upholding compliance. In India the Drugs and Cosmetic Act (1940) regulates cosmetics.

Product: Cosmetic or Drug

Whether a product is a cosmetic or drug under the law is determined by the intended use of the product. For each type of product different laws and regulations

are applied. Sometimes industries violate the laws by promoting a cosmetic with a drug claim or promoting a drug as cosmetics.

The Federal, Food, Drug and Cosmetics Act (FD&C Act) of US defines cosmetics by their intended use, as "articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body... for cleansing, beautifying, promoting attractiveness, or altering the appearance." Products included in this definition are skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup preparations, cleansing shampoos, permanent waves, hair colours and deodorants, as well as any substance intended for use as a component of a cosmetic product.

The Act defines drugs, in part, by their intended use, as "articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease" and "articles (other than food) intended to affect the structure or any function of the body of man or other animals".

There are some products that meet the definitions of both cosmetics and drugs. It only happens when a product has two intended uses. For example, a shampoo is a cosmetic because its intended use is to cleanse the hair. An anti-dandruff treatment product is a drug because its intended use is to treat dandruff. Consequently, an anti-dandruff shampoo is both a cosmetic and a drug. Among other cosmetic/drug combinations are toothpastes that contain fluoride, deodorants that are also antiperspirants, and moisturizers and makeup marketed with sun-protection claims. Such products must comply with the requirements for both cosmetics and drugs.

The Drug and Cosmetics Act of India defines cosmetics as defined by US FD&C Act but drug includes "all medicines for internal or external use of human beings or animals and all substances intended to be used for or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in human beings or animals, including preparations applied on human body".

Source: <http://www.fda.gov/cosmetics/guidancecompliance/regulatoryinformation/ucm074201.htm>
<http://www.fda.gov/Cosmetics/GuidanceComplianceRegulatoryInformation/ucm074162.htm>
<http://safecosmetics.org/article.php?list=type&type=30>
<http://www.cosmeticsinfo.org/history2.php>



Many ingredients used in cosmetics are toxic chemicals. These substances are used in products without violating the laws. The quantities used are very low. But the application of cosmetics day after day can be a threat to health and cause irritations. The skin absorbs nearly 60% of what is applied on the face and body. When it comes to beauty products, the effects of the ingredients they contain can be more than just skin deep.

Over 10,000 ingredients are used in personal care products. Some of these chemicals are risky for health. They are linked to cancer, birth defects, developmental and reproductive harm, and other health problems that are on the rise. The US FDA has banned 9 ingredients from cosmetics and the EU has banned over 1,000 due to health concerns.



The table below shows a sample of ingredients contained in cosmetics and associated health impacts.

Chemical	Products	Health Impacts
Butyl Acetate and Ethyl Acetate	Used in the formulation of nail polish, nail polish removers, basecoats, and other manicuring products.	The continuous use of which can lead to cracked or dry skin. Moreover, too much inhalation of butyl acetate vapors can result in dizziness or drowsiness.
Coal Tar Colours	Make-up and hair-dye	Some FD&C colors are carcinogenic or contain impurities that have been shown to cause cancer when applied to the skin. Allergens and irritant
Diethanolamine (DEA)	Widely used in shampoo	A suspected carcinogen, its compounds and derivatives include triethanolamine (TEA), which can be contaminated with nitrosamines shown to cause cancer in laboratory animals. [Suggestive animal evidence]
Formaldehyde and its releasers	Eye shadow, mascara, nail polish, shampoo, blush, etc.	Carcinogen, reproductive toxin, shown to cause or exacerbate asthma and other respiratory ailments. [Strong animal and human evidence]
Glycol Ethers	Nail polish, deodorant, perfume	Hazardous to the reproductive system. Other effects include anemia and irritation of the skin, eyes, nose and throat. EGPE, EGME, EGEE, DEGBE, PGME, DPGME and others with "methyl" in their names. [Strong animal and human evidence]
Lead	Hair dyes (e.g., Grecian formula), Lipsticks, and in eye makeup (as a preservative)	Lead damages the nervous system, leading to decreased learning ability and behavioral deficits. Reproductive toxin. Carcinogen. [Strong animal, human and children evidence]
Mercury	Skin-lightening cream and in eye makeup (as a preservative).	Toxic to development, as well as to the nervous system and is suspected to have harmful effects on the respiratory system, the kidneys and gastrointestinal and reproductive systems. [Strong animal, human and children evidence]
Parabens	Deodorant, shampoo, cream, baby product, shaving cream, make-up, etc.	Methyl-, ethyl-, propyl-, butyl-, isobutyl- and other parabens, have shown hormonal activity. The most common preservatives used in cosmetics. Recently found in tissue samples from human breast tumors. Propylparaben affects sperm production in juvenile rats. [Suggestive animal and human evidence]
Petroleum Distillates	Used in makeup, hair, nail, and skin care products.	Moderate skin irritation and mild, transient eye irritation.

Chemical	Products	Health Impacts
Phenylenediamine (PPD)	Hair dyes (oxidation dyes, amino dyes para dyes, or peroxide dyes)	PPD is mutagenic and reasonably anticipated to be a human carcinogen. It has been banned in Europe. It is also linked with skin irritations, and respiratory disorders. [Compelling animal evidence]
Phthalates	Most used in cosmetics DBP, DMP, and DEP. Fragrance, perfume, deodorant, nail polishes, various hair products, cream and lotion, etc.	Liver and kidney lesions; reproductive abnormalities, including testicular atrophy, altered development of reproductive tissues and subtle effects on sperm production (maybe through endocrine disruption); cell line anformations; and cancers, including those of the liver, kidney, and mononuclear cell leukemia. These effects are generally quantitatively though not qualitatively different between phthalates. The developing male reproductive system appears to be the sensitive organs. [Strong animal evidence; suggestive human evidence; some children evidence through exposure via medical devices]
Triclosan	Artificial antimicrobial chemical used in a variety of cosmetics and everyday products like soaps, deodorants, and toothpastes.	May disrupt thyroid function and can form toxic byproducts in tap water and in the environment.
Triethanolamine	Used in makeup products such as eyeliners, mascara, eye shadows, blushers, make-up bases and foundations, as well as in fragrances, hair care products, hair dyes, wave sets, shaving products, sunscreens, and skin care and skin cleansing products.	Mild skin and eye irritants and that irritation increased with increasing concentration.

Although these chemicals in cosmetics make us look, feel, and smell better but scientific studies suggest that some of these may be carcinogenic at a certain exposure level. These products contain a varied combination of chemicals, so it is not possible to show a definite cause and effect of any particular chemical on its own.

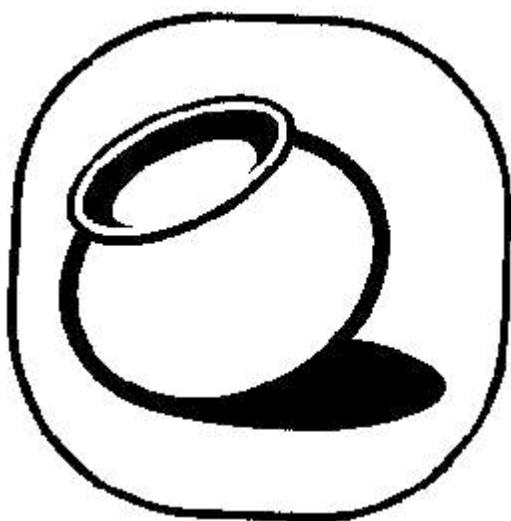
Impact on environment


Chemicals found in cosmetics of daily use also threaten environment. The daily use items like shampoos, shower gels, moisturisers, and perfume/deodorant are complex mixtures of synthetic chemicals that pose a range of risks. Figures released by the U.S. Environment Protection Agency and the U.S. Census Bureau show that each year more than three million tons of personal care chemicals are dumped into streams. Various studies have been done over the years to determine the effect that these substances have on the environment. There is, however, clear evidence that ecosystems are being adversely affected,

sometimes catastrophically, and irreversibly. As per study “Environmental reporting protocols for the cosmetics industry: a comparative analysis of Japanese and UK on-line publications” done by Salman Hussain and Madoka Yamaguchi, it is found that one of the main impacts is packaging waste generation. Other issues are Volatile Organic Compounds (VOCs) content in cosmetics and the existence of environmental hormones in cosmetic products. Environmental hormones, also known as endocrine disrupter chemicals, are chemicals that interfere with the normal hormonal system in the body by blocking, stopping, or mimicking hormonal activity. The final major issue is an ethical – animal testing.

Source: <http://pure-green-living.com/is-makeup-harmful-for-us-and-the-environment/>
<http://www.buzzle.com/articles/chemicals-in-cosmetics.html>
<http://www.koraorganics.com/blog/live-in-my-skin/all-things-organic/why-organic/the-environmental-impact-of-chemicals-used-in-cosmetics/>
<http://cosmeticsinfo.org/>
<http://www.crrconference.org/downloads/2006hussainandyamaguchi.pdf>

Eco Mark for Cosmetics- An Indian Scheme



Ministry of Environment & Forest has notified criteria for labeling cosmetics as environment friendly products. Bureau of Indian Standards (BIS) formulates/incorporates optional standards for environment friendly characteristics. The criteria follow a cradle-to-grave approach, i.e. from raw material extraction, to manufacturing, and to disposal. The 'Ecomark' label is awarded to consumer goods, which meet the specified environmental criteria and the quality requirements of Indian Standards. A product which is eligible for marking with ECO logo, it shall also carry the Standard Mark of BIS besides meeting additional environment friendly requirements. For this purpose, the Standard mark of BIS would be single mark being a combination of the BIS monogram  and the Ecologo. Requirement for ECO friendliness is an additional; manufacturing unit is free to opt for Standard Mark alone also. The Scheme is voluntary. Any product with the Ecomark will be the right environmental choice.

General Criteria:

- All cosmetic products shall meet the requirements of Indian Standards of BIS and should comply with safety, quality, and performance.

- All the ingredients that go into formulation of cosmetics shall comply with the provisions prescribed in IS 4707 (Part-I, II, and III) as well as the product specific requirements. IS 4707 is for the "Classification of cosmetics raw materials and adjuncts".
- A list of critical ingredients should be displayed in descending order of quantity present on package of the product. BIS shall identify the list of such ingredients.
- The product shall not be manufactured from any carcinogenic ingredients.
- Central Drug Research Institute/Industrial Toxicological Research Institute provides a list of carcinogenic ingredients to BIS and also keeps BIS informed about the changes therein.
- The product manufacturer must produce the consent clearance as per the provisions of Water (Prevention and Control of Pollution) Act 1974, Water (Prevention and Control of Pollution) Cess Act 1977, and Air (Pollution and Control of Pollution) Act 1981 along with the authorisation if required under Environment (Protection) Act 1986 and rules made thereunder to Bureau of Indian Standards while applying for the ECOMARK. Additionally, provisions of the Drugs and Cosmetics Act, 1940 and rules made thereunder shall also be complied with.
- The product package shall be suitably marked that ECOMARK label is applicable only to the content, if the product package is not separately covered under the ECOMARK Scheme.
- The material used for product packaging shall be recyclable, reusable, or biodegradable.
- The product packaging may display in brief the criteria based on which the product has been labelled Environment Friendly.

Product Specific Requirements

All the cosmetics formulations should comply with the following requirements:

- Cosmetic product should be dermatologically safe when tested by the method prescribed by IS 4011:1982.
- Biodegradable surfactant agents wherever used in cosmetics formulation shall be as per their limit finalized for ECOMARK on synthetic detergents.
- Heavy metals calculated as Lead (Pb) and Arsenic (As₂O₃) shall not exceed 20 and 2 ppm, respectively when tested by the respective methods as per Indian Standards.

Further in addition to compliance with the requirements as given above, the respective

cosmetics i.e. Tooth Paste/Tooth Powder, Hair Dyes, and Nail Polish should comply with the following requirements:

- For the formulation of **Tooth Paste/Tooth Powder**, the ingredients listed in IS 6356:1993 and IS 5383:1978 shall be used. However, toothpaste shall not be fluoridated and presence of fluoride (F) as impurity shall not exceed the limit of 25 ppm when tested by the method prescribed in Indian Standards.
- Lead based colours should not be used in **Hair Dyes**.
- Halogenated organic solvents should not be used in **Nail Polish**.

Eco Mark Criteria is incorporated in the BIS Standards of the following cosmetic products.

The incorporation of the Ecomark requirements, in the following cosmetic products, is under process:

Sr No.	Item	IS code Number	Sr. No.	Item	IS Code No.
1	Tooth Powder	IS 5383:1978	1	Skin Powder	IS 3959: 1978
2	Tooth Paste	IS 6356:1993	2	Skin powder for Infant	IS 5339: 1978
3	Hair Oil	IS 7123:1993	3	Skin Cream	IS 6608: 1978
4	Shampoo Soap based	IS 7669:1990	4	Nail Polish (Nail Enamel)	IS 9245: 1993
5	Shampoo Synthetic Detergent based	IS 7884:1992	5	Cosmetic Pencil	IS 9832: 1981
6	Cream Hair	IS 7679:1978	6	Powder Hair Dye	IS 10350: 1993
7	Oxidation Hair dye liquid	IS 8481:1993	7	Bindi Liquid	IS 10998: 1984
8	Cologne	IS 8482:1977	8	Kumkum Powder	IS 10999: 1984
9	After Shave Lotion	IS 9255:1979	9	Heena Powder	IS 11142: 1984
10	Pomades and Brilliantines	IS 9339:1988	10	Liquid Foundation Makeup	IS 14318: 1995
11	Depilatories Chemical	IS 9636:1988			
12	Shaving Cream	IS 9740:1981			
13	Lipstick	IS 9875:1990			
14	Lipsalve	IS 10284:1982			

Source: <http://cpcb.nic.in/EnvironmentalPlanning/Eco-label/cosmetics.pdf>
<http://envfor.nic.in/legis/others/gsr768.pdf>

ECO NEWS

World Health Organization (WHO) warns against skin lightening products



Fairness creams, skin lightening soaps, cleansing products, and eye cosmetics contain mercury and WHO has issued a warning against these products. This warning is serious especially for Indians. 61% of dermatological market in India is filled with skin lightening products.

Mercury a common ingredient found in these products and was in commercial use since early 1900s. Commercial bleaching creams were normally using ammoniated mercury to give a fairer effect on the skin before 1970. EU had banned use of mercury in cosmetic products in 1976, whereas US banned in skin bleaching creams much later in 1990.

Mercury is extremely effective in lightening dark spots and pigmentation but it has serious adverse effects on health. It reduces the resistance of skin towards bacterial and fungal infection and causes anxiety, depression, or psychosis. The symptoms of poisoning include unsteadiness, inflammation of the mouth and gums, general fatigue, memory loss, forgetfulness, and headaches. It may also lead to kidney damage. It causes irritation, patches of inflammation, and blisters on the skin.

WHO has also emphasized that mercury in soaps and creams is discharged in to waste water and through this it enters in to the environment. It becomes methylated here and enters the food chain as highly toxic methyl mercury in fish. When pregnant women take these fishes, mercury is transferred to their foetuses. It results in neurological deficits in children later.

"Most jurisdictions still allow the sale of makeup products containing mercury compounds. The soaps contain approximately 1-3% mercury iodide, and the creams are composed of 1-10% mercury ammonium," WHO said. It said, "The amount of mercury in a product may be labelled on the packaging or in the ingredient list. Names to look for include mercury, Hg, mercuric iodide, mercurous chloride, ammoniated mercury, amide chloride of mercury, quicksilver, cinnabaris (mercury sulfide)."

Source: <http://www.whiterskin.info/mercury-is-a-dangerous-skin-lightening-ingredient/>
<http://ways2health.blogspot.in/2012/06/dark-secret-mercury-in-that-fairness.html>

ECO NEWS

Study Finds Major Toxins in Many Cosmetics

Canada based an environmental group – Environmental Defence conducted a study on 49 face makeup items. These were 5 foundations, 4 concealers, 4 powders, 5 blushes or bronzers, 7 mascaras, 2 eyeliners, 14 eye shadows, and eight lipsticks. It selected the items, which were of daily use. According to the study it was found that all popular cosmetic products contain heavy metals like lead, arsenic, and cadmium. All tested products were contaminated with heavy metals and some products contained levels of arsenic and lead that far exceed the limits of Health Department of Canada. Their testing revealed serious heavy metal contamination in virtually all of the products. Not a single product had listed the metals on label ingredient lists.

The study also found that an average of 2 of the 4 metals of main concern (arsenic, lead, mercury, and cadmium) are present in each product. Most of the products also contained an average of 4 of the 8 metals tested (arsenic, cadmium, lead, mercury, nickel, beryllium, thallium, selenium). These are designated as toxic and are harmful for the health.

These heavy metals are considered as impurities unintentional contaminants in these cosmetic products. So it is not required to disclose these in ingredient lists in Canada or the USA. Health Canada has developed draft guidelines for impurity levels of some metals it believes are “technically avoidable” by manufacturers. The USA does not have

standards or even draft guidelines for these metals in cosmetics.

Exposure to these metals in small amount generally does not harm but over the time these can build up in the body and may increase the risk of creating health problem. Lead is linked with neurological problems and exposure at any level is not safe as stated by Centers for Disease Control and Prevention. The US Environment Protection Agency identifies arsenic as being linked to stomach pain, nausea, vomiting, diarrhea, and cancer of the bladder, lungs, skin, kidney, nasal passages, liver and prostate. Both heavy metals are found in lip-gloss, which is generally ingested by consumers.

The report is available online at <http://environmentaldefence.ca/reports/healthy-metal-hazard-health-risks-hidden-heavy-metals-in-face-makeup>.

Safe Cosmetics Act of 2011, a new bill in the House of Representative of US will give the US Food and Drug Administration (FDA) to regulate personal care products including cosmetics to ensure that the cosmetic products are devoid of harmful ingredients before hitting the shelves of markets.

Source:

<http://safecosmetics.org/article.php?id=831>

<http://www.treehugger.com/style/safe-cosmetics-act-of-2011-could-clean-up-chemical-laden-beauty-industry.html>

Environmental Labels World - Wide

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