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PERFUME THAT YOU THINK MAKES YOU SMELL ATTRACTIVE IS MORE LIKELY DAMAGING ENVIRONMENT AND YOUR HEALTH

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ABSTRACT

Since the beginning of recorded history, humans have attempted to mask or enhance their own odour by using perfume, which emulates nature's pleasant smells. A perfume is designed to blend with natural body odours to create a unique subtle scent that is one's signature. Perfumes have changed from a luxury product to a commodity product. They have become an essential part of people's lives by representing people's characters and sending certain messages. Smell bypasses logic and goes straight to the emotion and memory centre of the brain. The sense of smell is considered a right brain activity which rules emotions, memory and creativity. A Perfume is an alcoholic solution of aromatic compounds i.e. blends of fragrant materials. They are designed to add a pleasant smell to the air, cover up poor air quality and insufficient fresh air ventilation. Some of the most common chemicals in perfumes are ethanol, benzaldehyde, benzyl acetate, a-pinene, acetone, benzyl alcohol, ethyl acetate, linalool, a-terpinene, methylene chloride, a-terpineol, camphor, and limonene. In addition to the product base mixture, a single fragrance in a product may contain up to several hundred substances. Exposure to scented products can cause exhaustion, weakness, hay fever symptoms, dizziness, difficulty concentrating, headaches, rashes, swollen lymph glands, muscle aches and spasms, heart palpitations, nausea, stomach cramps, vomiting, asthma attacks (inability to breathe), neuro-motor dysfunction, seizures, loss of consciousness, multiple chemical sensitivities. Perfume ingredients, regardless of natural or synthetic origins, may all cause health or environmental problems when used. Fragrance contact allergy has become a major global health problem. Many of the scent chemicals used in fragrance formulations are unstable and tend to oxidize and break down when exposed to sunlight and air, during storage or when applied to human skin. It is not acute poisoning, but it is chronic; it stays in the system and accumulates in the fatty tissues of living organisms.

KEYWORDS: Environmental Awareness, Information, Knowledge, Pollution, Fragrance, Perfume, Flavour, VOCs, Alcohol, Chemistry, Hidden.

1. INTRODUCTION

To maintain a luxurious and comfortable life a blend of technology with nature, integrating with imagination is required and that can be achieved by strengthening the science of chemistry through research and development. For several centuries however progress was slow because science and technology remained somewhat apart. The seventeenth-eighteenth century spanned the period into Scientific Revolution. Knowledge of the crafts, mechanics, inventions, and the properties of matter created a storehouse of information. Tunneling into the earth for coal and metals, building forges for refining ores and hammering metals, constructing mills, wind and water power and erecting machines for lifting and boring provided humanity with a new sense of power over nature. Technologies and attitudes of domination stemmed the scientific revolution into egoist and turned tables, enabling humans to threaten nature with chemical industry, chemical pollution, deforestation and desertification, destruction of habitats and species, nuclear fallout, and ozone depletion. A wide range of chemicals can contaminate our water, land or air, impacting the environment and our health. Contamination means that chemical elements or compounds which harm human health are present in the atmosphere, water, food chain. Environmental issues such as climate change, water pollution and renewable

energy make the news headlines and have become increasingly important in everyday life. Many people perceive chemistry, research in chemistry and the chemical industry as harmful to the environment. Every man-made chemical does not automatically make it bad and everything natural cannot be considered as good. The whole life cycle of a product (from its creation to its disposal) needs to be taken into account while considering its impact. The environment has a remarkable ability to sustain itself. However, human behaviors disrupt the natural environment and threaten environmental sustainability. When understanding environmental health, it's important to determine which substances and activities are most dangerous and which are safe.

2. FRAGRANCE AND FLAVOUR

Being an expensive product, until the 19th century they were used mostly by the wealthiest groups of society. After 1960 the economies of US, Western Europe, and Japan experienced upward development. Consequently, perfumes became a personal care product and a common present for families. A perfume is designed to blend with natural body odours to create a unique subtle scent that is one's signature. In India, perfume and perfumery existed in the Indus civilization (3300 BC - 1300 BC). One of the earliest distillations of Ittar was mentioned in the Hindu Ayurvedic text Charaka Samhita and Sushruta Samhita (Sharma, Wahad and Srivastava 2010).

Esters have small molecular weight and very nice odour. They are responsible for the pleasant odor of jasmine, roses, etc. and for the odours of apples, bananas, strawberries, etc. Esters are used in the fragrance and flavoring industries. Benzyl Acetate is one of thousands of esters that can be used for perfume ingredients. It is an extremely significant compound because it provides a basic odour that can be found in many of the perfumes and other cosmetic products. Perfumes have changed from a luxury product to a commodity product. They have become an essential part of people's lives by representing people's characters and sending certain messages.

3. CHEMISTRY OF BIOLOGY

Smell bypasses logic and goes straight to the emotion and memory centre of the brain. The sense of smell is considered a right brain activity which rules emotions, memory and creativity. Molecules of the fragrance attack the olfactory system, located in the area above the human nose. They attack receptors which transmit the signal to the brain via neurons. Using perfume to heal, make people feel good and improve relationships between the sexes, are the new frontiers being explored by the industry.

4. WHAT IS A PERFUME?

A Perfume is an alcoholic solution of aromatic compounds i.e. blends of fragrant materials. Fragrances are volatile compounds and are constantly released into the air. They are designed to add a pleasant smell to the air, cover up poor air quality and insufficient fresh air ventilation. Natural ingredients—flowers, grasses, spices, fruit, wood, roots, resins, balsams, leaves, gums, and animal secretions—as well as resources like alcohol, petrochemicals, coal, and coal tars are used in the manufacture of perfumes. More than five thousand chemicals are used as fragrances. Only about 2,000 of the 250,000 known flowering plant species contain odoriferous oils. Therefore, synthetic chemicals are used to re-create the smells of non-oily substances. A typical perfume contains Alcohol (79.6%), Fragrance (20%) and Benzophenone-2 (0.4%) and a solubilizer. The fragrance material may react with alcohol to form new compounds. Cologne is a dilute solution of perfume.

5. WHERE IS A PERFUME?

The poor air quality smells foul. It further contributes to several health problems including headache, dizziness, fatigue and forgetfulness. To freshen up this stale air, freshening of the air is done using freshening agents like perfumes, scent, etc. Chemical fragrances are present in most laundry detergents, fabric softeners, anti-cling products, dish-washing liquids, disinfectants, soaps, shampoos and other hair products, deodorants, cosmetics, suntan/sunscreen lotions, aftershaves, colognes, incense, analgesic creams, and lip balms. Even products marked "unscented" often are falsely labeled and actually contain toxic fragrances. What these freshening agents do? Whether these purify the air or pollute it?

6. COMPONENTS OF PERFUME

Plants extracts like terpenes, aldehydes, ketones, alcohol, ethers, etc. have a characteristic pleasant smell. To produce odorous compounds with smells not found in nature, are synthesized from compounds obtained from petroleum distillates, pine resins or cheap organic feedstock. Then fixative is added, which sustain equal evaporation rate for all components. Fixatives include animal substances, coal tar, mosses, resins or synthetic chemicals. We perceive the smell of perfumes because of volatile odoriferous components (VOCs) present in them.

Some of the most common chemicals in perfumes are ethanol, benzaldehyde, benzyl acetate, a-pinene, acetone, benzyl alcohol, ethyl acetate, linalool, a-terpinene, methylene chloride, a-terpineol, camphor, and limonene. In addition to the product base mixture, a single fragrance in a product may contain up to several hundred substances (Bickers et al. 2003**.** Jo et al. (2008) analyzed 26 gel-type air fresheners sold in Korea

and identified more than 84 compounds**.** Steinemann et al. (2011) investigated volatile organic compounds (VOCs) emitted from 25 common fragranced consumer products, laundry products, personal care products, cleaning supplies and air fresheners using headspace analysis with gas chromatography/mass spectrometry and analysis found 133 different VOCs emitted from the 25 products, with an average of 17 VOCs per product. Of these 133 VOCs, 24 are classified as toxic or hazardous under U.S. federal laws and each product emitted at least one of these compounds.

7. IMPACT OF VOLATILE ODORIFEROUS COMPONENTS

VOCs persists in the air much beyond our imagination. This overexposure finds path to skin, upper airways and lungs and from the olfactory pathways to the brain. Once VOCs enter the body, they affect the organ or system. Phthalate is also used in perfumes, hair sprays, deodorants, nail polishes etc, which damages the lungs, liver, kidneys and harms the developing testes of offerings. Limonene on oxidation, forms products, that sensitizes both lungs, can damage bone marrow, causing low blood cell count and damage to liver and kidneys. Use of large number of fragrances may lead to a higher degree of indoor and outdoor air pollution. It creates a smoke of VOCs in the air. Once in the air, VOCs can mix with other pollutants and may form substances that are even more irritating or more toxic than the original substance. Some of the chemicals used in fragrances may react with oxygen in air to form peroxides, which may generate harmful free radicals.

Exposure to scented products can cause exhaustion, weakness, hay fever symptoms, dizziness, difficulty concentrating, headaches, rashes, swollen lymph glands, muscle aches and spasms, heart palpitations, nausea, stomach cramps, vomiting, asthma attacks (inability to breathe), neuro-motor dysfunction, seizures, loss of consciousness, multiple chemical sensitivities. New research on some chemicals that have been in use for years is showing that they can actually be more harmful at smaller doses. For many years scientists believed the dose made the poison, meaning that small doses may not be harmful. But, due to research on numerous chemicals' ability to mimic hormones or cross through the blood-brain barrier, this belief is not always correct. The chemical terpene, found in some pine- and citrus-scented air fresheners, can react with ozone in the air to spawn formaldehyde and the probable carcinogen 1,4-dioxane is a common contaminant that is produced by the manufacturing process. Some fragrance chemicals can alter the skin's surface tension, which greatly facilitates the absorption of other chemicals into the skin. Fragrances can modify brain blood flow, alter blood pressure, pulse, and mood and trigger migraine headaches. Fragrances are specially formulated and used for public behaviour control.

8. HEALTH AND ENVIRONMENTAL ISSUES

Perfume ingredients, regardless of natural or synthetic origins, may all cause health or environmental problems when used. While some of these chemicals are harmless, most can cause irritability, mental vagueness, muscle pain, asthma, bloating, joint aches, sinus pain, fatigue, sore throat, eye irritation, gastrointestinal problems, laryngitis, headaches, dizziness, swollen lymph nodes, spikes in blood pressure, coughing, and burning or itching skin irritations. Although the areas are under active research, much remains to be learned about the effects of fragrance on human health and the environment.

1. Fragrance ingredients can cause headaches, allergic skin reactions or nausea and increase sensitivity to ultraviolet radiation (Frosch et al. 2005, Apostolidis et al. 2002, Schmeiser et al. 2001).

2. Due to their large-scale use, several types of synthetic musks have been found in human fat and milk (Duedahl-Olesen et al. 2005) as well as in the sediments and waters of the Great Lakes (Peck et al. 2006).

3. Phthalate metabolites are also associated with obesity and insulin resistance in men (Stahlhut et al. 2007).

4. Perfume exposure often leads to asthma and other respiratory problems (Eberling 2009). Significant number of industrial chemicals, including some in fragrances, can act as hormone disruptors by interfering with the production, release, transport, metabolism and binding of hormones to their targets in the body (Gray 2009; Rudel 2007).

5. The potential repercussions of hormone disruption range from birth defects to impaired fertility (Diamani-Kandarakis 2009).

9. DISCUSSION

Fragrance contact allergy has become a major global health problem (Scheinman 2002). It is now considered among the top five allergens in North America and European countries (de Groot 1997; Jansson 2001) and is associated with a wide range of skin, eye and respiratory reactions. The greatest concern is that these chemicals, through their ability to mimic or disrupt natural estrogen, testosterone and thyroid pathways, may impair basic body functions like tissue growth and repair that is normally regulated by natural hormone signaling (Soto 2009). Many of the scent chemicals used in fragrance formulations are unstable and tend to oxidize and break down when exposed to sunlight and air, during storage or when applied to human skin (Shibamoto 1983). Recent in-vitro studies have suggested that exposure of common fragrance

compounds to UV light can cause direct cell damage and cell death (Placzek 2007; Dijoux 2006). One study found that 82 percent of perfumes based on natural ingredients contained synthetic fragrances (Rastogi 1996). Moreover, just because a fragrance ingredient is derived from a plant or an animal source does not mean it is safe for everyone, since many all-natural and herbal products contain fragrance allergens (Scheinman 2001).

The listing of ingredients varies among products and by the regulation governing the products, but no product of this nature clearly mentions on the label its components and ingredients. No product mentions the hidden substances. How the product will behave when in contact with air or a human body. How the moisture will react. What will be the products and byproducts if it decomposes? Perfume has become pure business and nowhere exist any chemistry?

10. CONCLUSION

Advertising creates the illusion that fragranced products will make consumers happy, sexually attractive, popular, fashionable, clean fresh smelling, good moms and dads, and great housekeepers. It is not acute poisoning, but it is chronic; it stays in the system and accumulates in the fatty tissues of living organisms. We are all also regularly exposed to various toxic chemicals from our air, water, food and household products. People can also be exposed to the same chemical from multiple sources. Due to gaping holes in law, it may be perfectly legal for perfumes, colognes, body lotions, shampoos and other cosmetics and personal care products to contain sensitizers, hormone disruptors, reproductive toxicants, carcinogens and other chemicals. One-time or controlled use of fragrances may not cause harm. But cosmetics and personal care products are used repeatedly and in combination with other consumer products that can also contain hazardous chemicals. Reducing the volume of fragranced products in daily use could make a significant difference to pollution in people and the environment (Roosens 2007).

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