Commercial advertisements have today increasingly started using scientific terminologies to impart authenticity to their products. Some advertisements use scientific facts to make consumers aware of the ingredients or strong points of their products. For instance, there are several categories of cement products on the basis of OPC grade (compressive strength of cement is shown in Ordinary Portland Cement grade like 43, 44, 54 etc.). This information may be relevant for application of such products for different purposes.

However, there are several other advertisements that use scientific terms without any relevance and often end up misleading consumers. Sometimes the scientific terms used have no relevance to the product. For instance, a famous mobile brand named on luminous, which does not have any relationship with the term being used. Kinetic is another well-known brand based on scientific terminology.

Advertisers are frequently applying terminologies from the physical sciences to market their products, like digital (in advertisements of lighting equipment, gadgets, electronic appliances like ovens, washing machines, air-conditioners, etc.) or luminous (for lighting products), where most customers are kept in the dark regarding the exact output of luminosity in different places and situations. Another term used is RPM being used in advertisements of automobile engines, electrical fans, farm equipment, etc. most advertisers are not talking about the impact of RPM on the output of the products or machine efficiency.

Terminologies from the field of electrical engineering have become common in advertisements of electrical and electronic products. The term wattage helps consumers pick up lighting equipment based on their requirement and also know about energy saving in halogen-based lighting equipment. Degree Celsius (°C) is used in advertisements for air conditioners (ACs), room heater, and engine lubricants. However, it is more important to discuss the exact difference being made by ACs in balancing temperature and humidity rather than talking only about temperature.

Mileage refers to fuel efficiency in automobile industry. Since the average buyer of a motor vehicle looks for mileage, in India the entire competition in the market is today based on efficiency of fuel consumption being offered by companies. Before the 80s in India, fuel efficiency was secondary, but with the entry of Japanese automobile companies, the word “mileage” gained currency. Speed, acceleration, torque, strength, elasticity, aerodynamics, combustion in engine, gross weight, and net weight are again some common scientific terminologies from physics communicated to consumers via commercial advertisements.

Terminologies from the world of chemical science are also being increasingly used in commercial advertisements. For instance, advertisements of skin care and toilet material talk of glyceride and boric acid as antiseptic. Boric acid is a mild antiseptic as well as a mild acid that inhibits the growth of microorganisms on the external surfaces of the body but at the same time it may cause irritation and have poisonous characteristics if taken internally in large amounts, which advertisers are not communicating.

Many cosmetic creams contain petroleum jelly as the main constituent. Petroleum jelly is a by-product of petroleum refineries. It is insoluble in water and does not get oxidized when exposed to air. It also has healing and moisturizing properties. However, it restricts the pores of the skin from letting toxins and moisture out, which also needs to be communicated. This would make consumers aware about its side effects on prolonged usage.

Advertisers are also creating awareness about thickening and darkening of skin by the effects of UV radiation and suggest application of sunscreens with sun protection factor (SPF) as remedies. Sunscreens act by absorbing, scattering or reflecting UV. The sun protection factor (SPF) gives an indication of the effectiveness of the sunscreens.

Detergent cake and powder ads also use scientific terms like hard water, soft water, lime, and aqua shine formula. Menthol is often mentioned in pain relievers – menthol (methyl salicylate) suddenly cools the skin and distracts from the feeling of ache or pain.

Water purification gadgets also display terms like reverse osmosis, ultraviolet, ultrafiltration, etc. Ultraviolet filtration is a disinfection process and a non-chemical method for destroying microorganisms by changing their genetic material, and making them unable to reproduce. Many scientists often wonder that if mutation occurs in the microbes at the time of treatment, these may become more hazardous.

Advertisements for toothpaste and oral care products use chemical terms like salt, calcium, rinsing, and fluorides. The use of scientific information has made it easier for advertisers to make customers aware about the efficiency of the products being offered.
The amount of fluoride contained in fluoride toothpaste should be indicated on the toothpaste tube. Many scientists have investigated that the use of fluoride toothpaste containing 1,000-1,500 ppm fluoride could lead to enamel fluorosis of the front permanent incisors. It is a condition which can vary from minor white spots to slightly yellow or brown discoloration of the enamel due to excessive intake of fluoride.

Hair care and hair colour ads also try to entice customers by talking about ammonia and ammonia-free hair colors, gel, and aqua. Earlier ammonia was largely used in hair colour due to its ability to open up hair cuticles and increase the penetration of hair colour molecules but due to increasing environmental and health concerns ammonia has been replaced by MEA (monoethanolamine), which provides similar functions. But again being a chemical its side-effects cannot be ignored.

The construction and allied industry also depends on terms from chemical science to promote its products – for instance, rust and iron oxide formation in steel bars, harmfulness of sulphur and phosphorus in steel rods and bars. Similarly cement ads are included with information on fly-ash, slag based blending, sulphate resisting Portland cement, rapid hardening of cements. Fly ash is one of the residues generated in combustion. It is a waste material produced by thermal power plants. Due to its chemical composition, disposing off the fly-ash in the soil can be hazardous. These days, many cement-manufacturing companies are using it as an ingredient which has proven better results in strength and water-absorbing capacity. This fact is often being advertised.

Fashion and footwear commercials give out chemical information like PU (Polyurethane), Nylon, polyesters and acrylic in synthetic comfort wears, mattresses and cushions. Polyurethanes are used in the manufacturing of flexible, high-resilience foam seating, rigid foam insulation panels, microcellular foam seals and gaskets, and durable elastomeric wheels and tires. Isocyanate is a key ingredient of PU and is considered to cause asthma, lung damage, and other respiratory and breathing problems, and skin and eye irritations. Similarly nylon again has been reported to cause a number of skin-related problems which are never mentioned by companies. A number of synthetic clothes have different toxic chemicals which are being absorbed while in use and cause many diseases. But advertisers only talk about their advantages like wrinkle free, shrinkage-free and water-repellant garments.

Biological information is often conveyed through advertisements to create awareness and promote products. Food and beverage products are giving information about preservatives, nutritional values, vitamin and mineral content. Food preservatives are used for extending the shelf-life of foods but some preservatives like nitrates and nitrates are known to be linked to an increased risk of cancer, brain tumor, diabetes and diarrhea.

Edible oil advertisements are giving out information about fat content, heart safety, cholesterol management, etc. Ads of health foods give information about the role of dietary fibers and enzymes in digestion, vitamin and nutritional values in their products. Health supplements often talk about minerals, vitamins, calcium and their role in growth of body and mind. Similarly biscuits and bakery ads convey informations on nutritional value of glucose and minerals, lactose, pepsin etc.

Environmental awareness is one area through which companies are gaining popularity in the sense of corporate social responsibility. Information on biodegradable packaging, lead-free petrol, recycling of lead acid batteries, plantations of trees, rain water harvesting, CFC-free appliances, and efficient lighting appliances is being fed to consumers to make intelligent choices.

In recent years, terminologies from the field of computer science and information technology, such as megapixel, gigabytes, high definition display, and aspect ratio have become handy to market computers, memory drives, disk drives, digital cameras, and mobile phones.

Commercial advertising helps in offering and making choices of products. The use of scientific information has made it easier for advertisers to make customers aware about the efficiency of the products being offered. However, consumers also need to be aware and not be attracted or misled by the mere use of scientific terms in advertisements.

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