

Cosmetic ingredients: fake news, real impacts?

7 disinformation methods and analysis outlines to help form a true opinion.

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In the era of social network invasion and excessive information, fake news can also impact cosmetic brands and companies.

For about 15 years, customers have tended to boycott certain categories of cosmetic ingredients. Can this phenomenon be explained merely by the clients' wish to use more natural products? Or is it the consequence of disinformation skilfully distilled through media campaigns?

To get an accurate picture, consumers should filter all the product information they receive through the 7 common disinformation analysis methods outlined below. The example of communication analysis concerning purified products of mineral origin produced from petroleum, one of the media's main targets, is very revealing.

Method N°1: Identifying the enemy. Creating problems to offer solutions.

This consists in simply identifying an ingredient or a group of ingredients as "enemies to avoid at all costs" (1). Irrational fear is generated with alarmist statements so that reassuring products can then be proposed-

« We hear about toxic ingredients, but which ones are they?» (2) "Would you be able to recognise the 3 offenders by reading the INCI list of ingredients?" (3). "They are mentioned in lower-case letters on the back of the product label and their names are anything but natural: Paraffinum Liquidum, Petrolatum, Cera Microcristallina, Ozokerite, Ceresin, Mineral oil, Synthetic Wax... You'll never be taken in again!" (4).

A frightened public is passively receptive and accepts more readily the notions you want to implant:

« Fortunately, your skin does not have to endure mineral oils" (5). "What if we limited the damages by turning to healthier cosmetics?" (7). "At X, mineral oils are totally banned! GET OUT!!!" (5). "Rely on quality skin care products conceived with natural ingredients and no harmful chemical additives. That is why brands with the organic label are your best allies." (1).

The facts: Purified hydrocarbons of mineral origin such as white oils or paraffins have been used in cosmetics and pharmaceuticals for more than a hundred years without ever having been associated with intolerance issues. A 2018 survey by BfR (German federal institute for risk evaluation) has confirmed the absence of risk for consumers. Regarding oral exposure, the conclusion of the survey was that microcrystalline waxes and average and high viscosity mineral oils can be used without risk.

Method N° 2: Twisting the truth

Il s'agit de rapporter des faits en les minimisant ou en les exagérant. Objectif : lancer une critique allant dans le sens de la désinformation.

This consists in reporting the facts minimising or exaggerating them. The objective: to launch a criticism supporting disinformation.

In an article from *60 million consumers* (9), the potential presence of polycyclic aromatic hydrocarbons (PAHs) in mineral oils and waxes is presented as a major risk.

« Harmless when correctly purified, they present the risk of containing carcinogenic impurities, polycyclic aromatic hydrocarbons (PAH)... Tracing these impurities in a finished product is complex and costly: the results do not always confirm the absence – or the presence - of impurities; an uncomfortable situation.” (9)

Further on, the same article briefly mentions the potential presence of PAH in vegetable oils, but without going into details. “Vegetable oils and butters present no known health risk. However, they should be checked as they may have been contaminated by impurities (pesticides, heavy metals, PAHs...) if they are not correctly refined.” (9)

The facts: This lack of intellectual honesty is surprising. The presence of strictly checked substances in mineral oils is clamoured, whilst no mention is made of their presence (with absolutely no control) in vegetable oils. As a matter of fact, some crude vegetable oils may contain up to 2000 ppm of PAH (e.g. Coconut oil). Strict control of impurities has to be made in **all** cosmetic ingredients. The purity of the mineral hydrocarbons used in cosmetics meets the requirements of pharmacopoeias, the strictest of which is the French Codex Pharmacopoeia.

Method N° 3: Scapegoat or Distraction

By anathematizing an ingredient or a group of ingredients, wrongly accused of being responsible for a real (or alleged) problem, it is possible to avoid talking about what is actually responsible.

« To top it all, mineral oils generate an unwanted comedogenic effect, clogging pores and causing spots” (4). They “also irritate the skin... they cause rashes, epidermal reactions” (8). and “an allergic reaction leading to skin inflammation.” (10)

So, it is better to use vegetable oils... “Vegetable oils are perfectly tolerated by the skin and there is no risk of allergies and skin reactions.” (6)

The facts: comedogenic (11) or allergenic (12) effects have been found in some vegetable oils. On the other hand, highly refined hydrocarbons of mineral origin are not comedogenic. Quite the reverse. (11) A clinical study on Aiglon’s white codex petroleum jelly has demonstrated the absence of provoking comedones and, in the case of most volunteers observed, that the number of comedones diminished. Thanks to an excellent skin tolerance, even on sensitive skin, petroleum jelly serves as a neutral vehicle when testing for potential allergens of other lipophilic substances.

Method N° 4: Retrieving myths

In the film Goldfinger, the assistant is covered in golden paint and dies. James Bond claims that she has died from “skin suffocation”. The indestructible myth of mineral hydrocarbons « preventing the skin from breathing” (2) and “toxins from being correctly released” (2) is recurrent.

The facts: Unlike frogs, human beings do not breathe through the skin: it is the lungs that collect oxygen, and the elimination of toxins is achieved not through the skin but through the liver and the kidneys. Petroleum jelly based medical ointments are the most effective for treating eczema and atopic dermatitis on large skin surfaces. Petroleum jelly is also used in the paraffin tulle bandages for burns.

Method N° 5: Exaggerated simplification

Ces sont les généralités employées pour fournir des réponses, qui sont simples, à des problèmes complexes. Les aspects importants d’une question difficile sont cachés.

These are generalities used to supply (simple) solutions to complex problems. The important aspects of a difficult issue are concealed.

“Mineral oil = Petroleum derived. Vegetable oil = plant extract. Have you made your choice?” (13)

“Mineral oils are not eco-friendly.” (8) “The fight against petroleum is the number 1 battle of organic cosmetics!” (4) “Vegetable oils and butters (...) are not harmful for the environment” (9). Long live green chemistry, the “protector of health and the planet”.(4)

The facts: According to the French Ecologic Transition Agency *“Organic does not necessarily mean that the product has no impact on the environment” (14). Moreover, fuels and lubricants are essential for agricultural holding. Purified mineral oils are authorized in organic culture as adjuvants for fungicides, acaricides and insecticides. Experts agree that if the cosmetic sector (for which 97% of the plastic packaging comes from petrol) looks to use only vegetable materials, there would be no more space for agricultural production for food.*

Simply put, as far as ecology is concerned, there is no miracle solution so far.

Method N° 6: Stigmatizing vocabulary

This method consists in choosing either demeaning or valorising words to short-circuit rational analysis, and consequently the critical sense of the target audience.

“Vegetable oils, precious beauty allies... are ideal for moisturising”, whereas “petroleum jelly and paraffin, these disliked mineral oils” (9), “imprison humidity” (15) by creating a “greasy occlusive layer on the skin” (5) “giving a false impression of moisturisation... Useless! they tell you” (4).

“Because, of course, it’s better to use the moisturising powers of vegetable oils rather than a petroleum by-product. Don’t you agree?” (8)

The facts: The moisturising power of vegetable oils, also due to the same occlusive mechanism, is considerably inferior to that of petroleum jelly. Used as a reference product to test the moisturising properties of other lipophilic ingredients and finished products, petroleum jelly is “the golden standard” for treating dry skin in the pharmaceutical industry.

Method N° 7: Hidden or subliminal messages. “free” allegations

A hidden message acts implicitly on the consumers’ perception. The popularity of « -free » allegations dates from about 15 years ago. In 2005, a television programme “Envoyé Spécial” (special reporter) demonised the industrial use of parabens citing a study associating parabens with breast cancer. Although this study was subsequently repudiated and contested, the message had already gotten through. After “paraben-free” (although a study deprecating paraben has since been disclaimed), “silicone-free, artificial colouring-free, mineral oil-free...” followed. In sum, the molecules which make the difference between “organic” and “conventional” cosmetics.

Without explicitly blaming these ingredients, these allegations gave a negative impression of their security. They have considerably influenced consumers’ choices and contributed to a significant increase of organic cosmetics (a 35% increase per year since 2005).

The facts: Sometimes the remedy is worse than the disease. To cite methylisothiazolinone, this is one of the preservatives that have replaced parabens and which is three times more irritating according to the French Society of Dermatology. Since July 2019, due to their “discrediting” nature, the “-free” allegations concerning authorised cosmetic ingredients have been banned in Europe. In the case of purified hydrocarbons of mineral origin, the “-free” does not represent an uncertain “Plus”, but a real “Minus”. In cosmetics, no substitute can match the physico-chemical, technological and functional characteristics of purified hydrocarbons of mineral origin.

How to respond when faced with fake news: that is the question

Should one submit to the pressure of false information which incites to systematically replace safe ingredients that wrongly suffer from a negative image?

Or, on the contrary, should one be transparent and find ways to inform consumers on the flaws of the manipulated information, debunking it with facts.

In the example used here, there is no need for mineral bashing to promote natural products. The opposition between the two is not justified. Products of mineral origin such as oils, paraffins and petroleum jellies, and products of vegetable origin both have their qualities and their usefulness. The quality and transparency of information could be increased if it were diffused in this non-vindictive spirit.

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