

Organic Cosmetics for Natural Beauty!

How do we know what we are buying is really natural?

As the number of people who are concerned about toxins in our environment grows, more and more skin care companies are jumping on the *natural* and *organic* bandwagon. But what does *natural* and *organic* mean when we see them on a product label?

How do we know what we are buying is really *natural* and *organic*? What are the natural alternatives to chemicals? And is *natural* really better for us?

Our skin is the largest eliminatory organ in the body. It is a two-way membrane. Toxins are eliminated through the skin via perspiration and absorbed through the skin into the body's circulation system, through hair follicles and sebaceous glands, but not through the sweat glands. One square inch of skin contains approximately 65 hairs, 100 sebaceous glands and 650 sweat glands.

Skin care manufacturers are not supposed to claim that their products penetrate the skin. If they did, the products would then be labelled as "drugs" and would be governed by much stricter regulations. However, it is now recognised that the skin does absorb many ingredients in skin care preparations. This is both good and bad. Good, because it means our skin can be nourished from the outside with some wonderful ingredients. Bad, because some skin care manufacturers can use harmful ingredients that would never be allowed to be taken orally, but are still absorbed into our system, through our skin.

WHAT DOES "NATURAL" AND "ORGANIC" MEAN ON PRODUCT LABELS?

Nowhere does the idea of "natural" or "organic" take a more gratuitous bruising than in the skin care industry.

If we look at the term "natural" we would probably define it as "existing in, or formed by nature; not artificial". Many labels have long lists of chemical names, some followed by the phrase "derived from ..." (some natural substance). This is misleading for consumers.

When chemicals such as Cocamide DEA or Sodium Hydroxysultaine are followed by the words "derived from coconut oil" the consumer is led to believe that these synthetic chemicals must be natural. While this may be true in some cases, it is ultimately irrelevant because what you end up with after the chemical processing is usually anything but natural or pure.

To create Cocamide DEA, a foaming agent found in some shampoos, requires the addition of a synthetic chemical and known carcinogen, Diethanolamine – DEA, to the coconut oil. It is therefore no longer natural, or safe!

If we look at the term "organic" on a label, we usually think it means "grown and cultivated without the use of chemicals". That is the conclusion most skin care companies would like us to come to.

Some companies are cynically using the chemistry definition of "organic" – meaning a



Narelle Chenery
Director of Research and Development,
Miessence™. email: narelle@onegrp.com

compound that contains a carbon atom. Carbon is found in anything that has ever lived. By using this definition of organic, they are saying that a toxic petrochemical preservative called Methyl Paraben is "organic" because it was formed from leaves that rotted over thousands of years to become crude oil, which was then used to make this preservative.

An increasing number of companies are now claiming to use "organic" herbs in their products. But, what about the rest of the ingredients? Are they safe? Isn't there an authority that governs the use of the term "organic" on labels? The simple answer is NO.

However, the term "certified organic" IS governed by a number of internationally recognised bodies. In Australia, the Biological Farmers of Australia (BFA) is the largest. Searching for products with the logo of a certifying body on the label is the only way you can guarantee the organic authenticity and integrity of every ingredient in the product. Without this, the organic claim means nothing, as it cannot be verified.

Here are some examples of internationally recognised certifying bodies:



HOW DO WE KNOW WHAT WE ARE BUYING IS REALLY "NATURAL" AND "ORGANIC"?

Fortunately, there is a very simple way to differentiate between the hype and truth in skin care and that is to read the ingredient list on the label. It is a legal requirement that all skin care products must be labelled with the ingredients in descending order of their quantity in the product. A good rule of thumb is to divide the ingredient list into thirds: the top third usually contains 90-95% of the product, the middle third usually contains 5-8% and the bottom third, 1-3%.

Here is the ingredient list of a so-called "natural" and "organic" body moisturiser from a well-known "natural" skin care company.

APRICOT CREAM

Natural or Organic ingredients include:

1. Water (Deionised),
 2. Isopropyl Palmitate (Palm Oil Derivative),
 3. Apricot Kernel Oil,
 4. Bis-Diglyceryl Caprylate/Caprates/Isostearate/Stearate/Hydroxystearate Adipate (Vegetable Triglyceride),
 5. Glyceryl Stearate SE (Vegetable Derived),
 6. Caprylic/Capric Triglyceride (Glycerin-derived emollient),
 7. Cetareth - 12 (Organic Emulsifier),
 8. Tocopherol Oil (Vitamin E),
 9. Chamomile Extract,
 10. Sage Extract,
 11. Linden Extract (Lime Blossom Extract),
 12. Balm Mint Extract,
 13. Shea Butter (From Karite),
 14. Wheat Germ Oil,
 15. Carrot Oil,
 16. Cetyl Alcohol (Organic Co-emulsifier),
 17. Sodium Hydroxide (pH Adjuster),
 18. Sorbic Acid (Organic Compound),
 19. Tocopherol Acetate (Vitamin E Derivative),
 20. Methylparaben (Organic Compound),
 21. Propylparaben (Organic Compound),
 22. Imidazolidinyl Urea (Organic Compound),
 23. Fragrance,
 24. FD&C Yellow No. 5, D&C Red No. 33.
- Content: Apricot Oil (2.5%)

Take note of the last point that says "Content: Apricot Oil (2.5%)". Notice that Apricot Oil is number 3 on the list. Because skin care manufacturers are required to list the ingredients in descending order this means everything AFTER Apricot oil makes up LESS than 2.5% by volume.

This means that about 90% of that product is water and Isopropyl Palmitate. Isopropyl Palmitate, is derived from Isopropyl Alcohol, synthetic alcohol, and Palmitic Acid, a fatty acid from palm oil. It is known to cause skin irritations and dermatitis in rabbits and has been shown to have comedogenic (acne promoting) properties. Nos 4, 5 and 6 are all produced by chemical reactions between various fatty acids and glycerol (synthetic glycerine). They are largely synthetic and have been shown to cause allergies and dermatitis.

No. 7 is a synthetic emulsifier that may contain dangerous levels of ethylene oxide and dioxane, both known carcinogens.

Nos 8-15 are natural ingredients used in very small amounts that may have been grown using pesticides and herbicides.

No. 16 may be natural or synthetic and has been shown to cause contact eczema.

No. 17 is otherwise known as Caustic Soda and is extremely alkaline and corrosive.

No. 18. Sorbic acid was once isolated from the mountain ash berry, but is now chemically synthesised and is a toxic preservative.

No. 19 is synthetic Vitamin E.

Nos 20-22 are toxic and allergenic preservatives.
 No. 23. Probably synthetic, may contain phthalates that have been linked to birth defects.
 No. 24. Synthetic colours that could be potentially carcinogenic.
 Now let's look at an ingredient list of a certified organic body moisturiser. This ingredient list says:

CERTIFIED ORGANIC BODY INTENSIVE

1. Proprietary blend of organic native Australian distilled herbal extracts,
2. Organic Safflower oil,
3. Purified Water,
4. Organic Avocado oil,
5. Organic Cocoa butter,
6. Non-GMO Lecithin,
7. Organic Sugar-Cane Ethanol,
8. Organic Unrefined Beeswax,
9. Lime,
10. D-Panthenol (pro-vit b5),
11. Olive extract,
12. Grapefruit extract,
13. Sclerotium gum,
14. Organic orange,
15. Vanilla extract.

No. 1. The basis of this product is a proprietary blend of organic native Australian distilled herbal extracts.
 No. 2 is cold-pressed from organic safflower seeds.
 No. 3. Purified Water.
 No. 4 is cold-pressed from organic avocado fruit.
 No. 5 is from organic cocoa beans.
 No. 6 is from non-genetically modified soybean oil.
 No. 7 is from organic sugar.
 No. 8 is from organic beehives!
 No. 9 is cold pressed from the skin of organic limes.
 No. 10 is a precursor to vitamin B5.
 No. 11 is from olive leaves.
 No. 12 is from grapefruit seeds.
 No. 13 is a natural gum.
 No. 14 is cold-pressed from organic orange peel.
 No. 15 is from natural vanilla beans.

WHAT ARE THE NATURAL ALTERNATIVES TO CHEMICALS?

All skin care products, both synthetic and natural, contain items from the following categories in some combination or other:

EMOLLIENTS

Emollients serve two functions; they prevent dryness and protect the skin, acting as a barrier and healing agent. Water is the best emollient, but because it evaporates quickly it is ineffective. It needs to be held on the skin by emollient oils in what is called an *emulsion*. Synthetic emollients are occlusive i.e. they coat the skin and do not allow it to respire (much like plastic wrap), which can cause skin irritation. Some synthetic emollients can accumulate in the liver and lymph nodes. They are also non-biodegradable, causing a negative environmental impact. Natural emollients actually nourish the skin. They are metabolised by the skin's own enzymes and absorbed into it. They are readily biodegradable and are of edible quality.



Some Synthetic Emollients

PEG compounds (eg PEG- 45 Almond Glyceride) may contain the toxic by-product dioxane
 Synthetic alcohols (anything that contains the phrase benzyl -, butyl-, cetearyl-, cetyl -, glyceryl-, isopropyl-, myristyl propyl-, propylene-, or stearyl-) eg Isopropyl Palmitate, Diglyceryl Caprylate) have been shown to cause allergies and dermatitis.
 Hydrocarbons (eg mineral oil, petrolatum, paraffin) contain carcinogenic and mutagenic Polycyclic Aromatic Hydrocarbons (PAHs) and can cause chemically induced acne.
 Silicone Oils (eg dimethicone, cyclomethicone, copolyol) can clog the skin like plastic wrap and cause tumours when painted on lab animals (according to the Material Safety Data Sheet supplied by the manufacturer).

Some Natural Emollients

Plant Oils (eg. Jojoba, Avocado, Rosehip) Shea, Cocoa and Jojoba Butters

HUMECTANTS

The main purpose of any cream is to keep the skin moist. Many conventional creams form a suffocating film on the skin to prevent moisture loss.
 Even a natural humectant, glycerin, actually attracts water from the air and surrounding tissue. It keeps the skin moist as long as there is sufficient moisture in the air. In a dry climate it actually draws moisture from the skin.
 Collagen, elastin and keratin enjoy some popularity as humectants. Whilst they are compatible with the skin and deposit a protective film, they are usually sourced from animals and therefore cannot be termed "cruelty free". Some skin care companies would like you to believe that your skin can use special animal proteins to rejuvenate and replace aging cells. This is nonsense! The size of the molecules, even when broken down (hydrolysed), are far too large to penetrate the skin. Even if they could get in, they would be immediately rejected as foreign matter and attacked by the immune system.

Natural phospholipids, from lecithin, are fantastic humectants. An important benefit of phospholipids is that they are hygroscopic (attract water from the surrounding air) and hold water where an increased level of hydration is needed. Therefore, phospholipids increase the hydration levels of the skin without being occlusive (forming a film to prevent water loss, and preventing normal cellular function).

A recent study proved the value of topically applied phospholipids in skin care. It found that environmental factors (sun, wind, pollution) and the detergents and solvents, found in most skin cleansers, actually stripped the natural phospholipid content from the top layer of skin. This loss resulted in a rough feel and a pitted appearance under a microscope. Importantly, the phospholipids in the uppermost skin layers cannot be replaced by natural cell function, as the top layer of cells no longer metabolise; they serve only as a protective barrier.

Remarkably, the study showed that topically applied plant phospholipids restore the barrier function of the skin, protecting it from substances such as bacteria and harmful chemicals.

Some Synthetic Humectants

Propylene Glycol – causes irritation and contact dermatitis
 Ethylene/Diethylene Glycol – causes irritation and contact dermatitis
 PEG compounds (eg Polyethylene Glycol) – may contain the toxic by-product dioxane

Ethoxylated surfactants (eg “- laureth-”) – may contain the toxic by-product – dioxane
 Synthetic alcohols (eg Glyceryl Coconate, Hydroxystearate, Myristate, Oleate) have been shown to cause allergies and dermatitis.

Some Natural Humectants

Lecithin
 Panthenol (pro-vitamin B5)
 Glycerin

EMULSIFIERS

Emulsifiers hold two ingredients together that normally don't mix. This can either be a physical substance (like a wax) or a physical action (shake well before use!). Synthetic emulsifiers are usually petroleum/hydrocarbon derivatives and can be allergens. Natural emulsifiers are obtained from various nuts, berries and leaves.

Some Synthetic Emulsifiers

Alkoxykated Amides (eg TEA, DEA, MEA, MIPA compounds) can undergo nitrosation to form nitrosamines, which are known carcinogens
 PEG compounds – may contain the toxic by-product dioxane
 Sorbitan Stearate, Laurate, Palmitate, Oleate etc
 Ozokerite, Ceresin, Silicone and Montan Waxes
 Isopropyl Stearate, Laurate, Palmitate, Oleate etc

Some Natural Emulsifiers

Plant Waxes (eg. Candelilla, Carnauba, Jojoba, Rice Bran)
 Xanthan Gum
 Quince Seed

SURFACTANTS

Surface-active-agents are substances capable of dissolving oils and holding dirt in suspension so it can be rinsed away with water. They are used in skin cleansers and shampoos.

A serious problem with ethoxylated surfactants (those that utilise ethylene or propylene oxide in the chemical reaction) is that they can be contaminated with dioxane, a potent carcinogen. These surfactants are listed on labels as ingredients ending with -eth, (like laureth) or containing the phrase PEG (PolyEthylene Glycol), or PPG (PolyPropylene Glycol).

Another dangerous class of surfactants are amides. These are listed on labels containing the term TEA – TriEthanolAmine, DEA – DiEthanolAmine and MEA, MonoEthanolAmine. All compounds containing TEA, DEA and MEA can undergo nitrosation with other chemicals to form nitrosamines, which are carcinogenic. One study has found that over 40% of products containing triethanolamine (TEA) were contaminated with these potent carcinogens.

Natural saponins (foaming agents) are a much better choice for shampoos. They gently cleanse the hair and scalp without stripping the natural oils.

Some Synthetic Surfactants

Sodium or Ammonium Lauryl or Laureth Sulphate
 Sodium Methyl Cocoyl Taurate
 Sodium Lauroyl or Cocoyl Sarcosinate
 Cocamidopropyl Betaine
 TEA (Triethanolamine) compounds
 DEA (Diethanolamine) compounds
 MEA (Monethanolamine) compounds
 PEG (Polyethylene Glycol) compounds
 Quaternium -7, 15, 31, 60 etc
 Lauryl or Cocoyl Sarcosine
 Disodium Oleamide or Dioctyl Sulfosuccinate etc.

Organic Cosmetics for Natural Beauty (continued)**Some Natural Surfactants**

Castile Soap
 Yucca Extract
 Soapwort
 Quillaja Bark Extract

PRESERVATIVES

The decaying process is natural and happens with or without preservatives. Skin care products do not (and should not) last for ever. Just like food, all natural skin care products will eventually deteriorate and go rancid. The effectiveness, not safety, of synthetic chemical preservatives has only been “proven” by animal testing. Chemical preservatives are generally used because they are much cheaper than, and extend the shelf life of the product more than natural alternatives. Storing natural products in the fridge will help extend their life.

Some Synthetic Preservatives

Imidiazolidinyl Urea (Germall 115) and Diazolidinyl Urea (Germall II) Causes contact dermatitis. Germall 115 releases formaldehyde over 10°C.

DMDM Hydantoin Highly toxic, causes contact dermatitis, contains formaldehyde. Used in shampoos and deodorants.

Methyl, Propyl, Butyl and Ethyl Paraben Toxic, Causes allergic reactions and skin rashes. Used in almost everything!

2-Bromo-2-Nitro-Propane-1, 3-diol. (Bronopol) Toxic, causes allergic contact dermatitis.

Used in face creams, shampoos, mascaras and bath oils.

Benzalkonium Chloride Highly toxic, primary skin irritant. Used in shampoos, conditioner and deodorants.

Quarternium-15 Toxic, causes skin rashes and allergic reactions

Chloromethylisothiazolinone and

Isothiazolinone Causes contact dermatitis.

Methylisothiazolinone and

Methylchlorisothiazolinone

Both cause allergies.

Butylated Hydroxytoluene (BHT) and Butylated hydroxyanisole (BHA) Both cause allergic contact dermatitis.

BHT is carcinogenic.

Some Natural Preservatives

Tea Tree essential oil
 Thyme essential oil
 Grapefruit Seed Extract
 D-Alpha Tocopherol Acetate (Vitamin E)

IS “NATURAL” REALLY BETTER?

There are some people who believe that there really are “safe” synthetic chemicals.

If we look at chemical use historically, we see a pattern of fantastic chemical breakthroughs that are sold to us as the “new” answer to our problems, which are then subsequently banned (or withdrawn) after the damage has been done. Remember the “miracle” of DDT for getting rid of pests on crops?

I believe that the search for newer, better and safer chemicals is foolish. Mother Nature always has, and always will, provide us with everything we need.

We should avoid all synthetic chemicals. By seeking out truly natural and organic products we are making a positive difference to our own health as well as supporting ecologically sound business ideals.