



RESEARCHING AND

Substituting Ingredients

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**RESEARCHING INGREDIENTS/
RAW MATERIALS**

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RESEARCHING INGREDIENTS/ RAW MATERIALS

In this lesson, we will cover:

1. Reliable sources for researching ingredients and industry trends, including:
 - MSDS, CoA and technical data sheets.
 - IFRA conformity certificates.
 - Cosmetic ingredient databases.
 - Certification standard databases.
 - Scientific studies and papers.
 - Trade magazines and websites.

RELIABLE SOURCES FOR RESEARCHING INGREDIENTS AND INDUSTRY TRENDS

In addition to the information provided in our courses and classes,, it is important that you carry out your own research into different ingredients. Knowledge is power, and the more knowledgeable you are about different ingredients, the better your product formulations will be.

You may also like to stay up to date with cosmetic trends to inspire your own formulations.

It is important that you carry out your own research into different ingredients.

Here are some useful resources:

MSDS, CoA AND TECHNICAL DATA SHEETS

Professional cosmetic raw material suppliers can provide you with an MSDS (Material Safety Data Sheet) and a CoA (Certificate of Analysis) for all ingredients they sell. These are usually downloadable from the supplier's website. Keep a copy for each ingredient you use, especially if you plan to sell your products, as they form an important part of your record keeping. We recommend only buying materials from suppliers that can provide this documentation. When you take receipt of raw materials you can inspect the raw materials and cross check what you have received against these documents to make sure you have received the raw materials in good condition.

Material safety data sheet (MSDS)

The information you will see on a MSDS includes:

- Product name.
- Supplier.
- INCI name.
- CAS number.
- EINECS number.
- Certifications if applicable.
- Chemical composition.
- Hazards identification.
- First aid measures.
- Firefighting measures.
- Accidental release measures.
- Handling and storage.
- Exposure controls and personal protection.
- Physical data and chemical properties (eg form, odor, color, pH, boiling point, density, hydrosolubility, liposolubility).
- Stability and reactivity.
- Toxicological information.
- Ecological information.
- Disposal considerations.
- Transport information.
- Regulatory information.

Certificate of Analysis (CoA)

A certificate of analysis is a document issued by the manufacturer that confirms that a particular raw material meets its product specification. A CoA commonly contains results gathered from testing performed as part of quality control of a single batch of ingredient. It usually specifies different parameters, such as organoleptic properties (how the raw material looks and smells), density, pH (where applicable), molecular weight, saponification, iodine and peroxide value (for carrier oils), or microbial count results.

If you are selling your products you will need to keep a record of the CoA of all materials (batch specific) used in your product, and you will probably need to show them to your safety assessor as well.

Technical data sheets

Manufacturers of ingredients such as emulsifying wax and preservatives will also have technical data sheets available which will tell you at what percentages the ingredients should be used.

IFRA CONFORMITY CERTIFICATES

Suppliers of essential oils may be members of the International Fragrance Association (IFRA). If they are, they will be able to provide you with an IFRA conformity certificate.

The IFRA conformity certificate certifies that the fragrance or essential oil is in compliance with the IFRA standards. It will also detail which classes of product it can be used in, and the maximum concentration level it can be used at in that particular product class. It allows you to ensure you are using safe levels of that fragrance or essential oil in your product type.



COSMETIC INGREDIENT DATABASES

If you are wondering if an ingredient is safe, or want to look up an INCI name or function you are unfamiliar with, these databases are very useful:

CosIng

(European Commission Cosmetic Ingredient Database):

ec.europa.eu/growth/sectors/cosmetics/cosing_en

SpecialChem INCI Directory:

<https://cosmetics.specialchem.com>

This has a keyword search, INCI name search, MSDS, ingredient information and studies from suppliers, starting formulas and more.

Cosmetic Ingredient Review:

www.cir-safety.org

This is a good source of information on the safety of ingredients.

California Safe Cosmetics Program database:

<https://cscpsearch.cdph.ca.gov/search/publicsearch>

UL Prospector – Personal Care & Cosmetics:

www.ulprospector.com/en/eu/PersonalCare

This is a database of cosmetic ingredients (you can search using the trade name or INCI name) and their suppliers. You will need to register on the website and wait for your registration to be approved by administrators. To register, you will need to provide some information about your company.

CERTIFICATION STANDARD DATABASES

If you want to know which ingredients are permitted by different certifying bodies, you can find this information in the databases they provide.

COSMOS standard database

If you wish to follow the COSMOS standard, you can search through the database of approved ingredients on this webpage:

www.cosmos-standard-rm.org/verifmp.php

SCIENTIFIC STUDIES AND PAPERS

To gain a deeper understanding of ingredients, how they work and their benefits, you can access peer-reviewed scientific papers on the following online databases and journals:

PubMed Central (a free resource): www.ncbi.nlm.nih.gov/pmc

PubMed: www.ncbi.nlm.nih.gov/pubmed

Science Direct: www.sciencedirect.com

Google Scholar: <https://scholar.google.co.uk>

Journal of Investigative Dermatology: www.jidonline.org

Wiley online library: onlinelibrary.wiley.com

International journal of cosmetic science:
onlinelibrary.wiley.com/journal/14682494

You will also be able to access these journals through large libraries. You will need to use scientific language in your search, for example the INCI name for ingredients.

TRADE MAGAZINES AND WEBSITES

These are not always reliable regarding ingredient information but they are particularly useful for finding out about popular cosmetic products and market trends.

Cosmetics Design: www.cosmeticsdesign.com

Cosmetics and toiletries: www.cosmeticsandtoiletries.com

SPC – soap, perfumery and cosmetics:
www.cosmeticsbusiness.com/Category/SPC

Beauty independent: www.beautyindependent.com

SUMMARY

When researching online, always check the source of the information you find to help you decide how reliable it is. In this lesson you have discovered some reliable sources to help you undertake your own independent research into ingredients and industry trends, including: MSDS, CoA and technical data sheets, IFRA conformity certificates, cosmetic ingredient databases, certification standard databases, scientific studies and papers, and trade magazines and websites.



SUBSTITUTING INGREDIENTS

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SUBSTITUTING INGREDIENTS

In this lesson, we will cover:

1. Common concerns with ingredients.
2. How to substitute ingredients when making skincare products.
3. When you cannot find a substitute.

COMMON CONCERNS WITH INGREDIENTS

Has this ever happened to you?

- You find a product that you want to make but you are missing one or more of the ingredients.
- You read about something you really want to try but you cannot buy it locally.
- You live in a country where some ingredients are not readily available.
- You want to save money by using less expensive ingredients while still retaining the benefits of the product.

We often get asked, “I love your formula for X product but I do not have Y ingredient. What can I use instead?”. This is a great question. You are looking at the product formula to see how you can make adjustments. You are starting to think like a formulator.

You will want to substitute like for like. So one emulsifier for another emulsifier, or one emollient for another emollient, etc.

HOW TO SUBSTITUTE INGREDIENTS WHEN MAKING SKINCARE PRODUCTS

To help you choose a substitute ingredient, you will need to ask yourself a few questions:

1. What is the purpose of the overall product?

Every skincare product has a specific purpose, a specific issue that it will help with. When you start to think about substituting ingredients you will need to decide if you want to stay true to the original purpose of the product or if you want to change it.

If you want to stay true then you will want to replace ingredients with ones that will offer the same benefit. If you want to create a product with a slightly different purpose then you are free to select ingredients that offer something different.

2. What is the function of the ingredient in the product?

Here you will need to think about the ingredient's role, what it does. Is it an emulsifier, thickener, preservative, or emollient, for example? You will want to substitute like for like. So one emulsifier for another emulsifier, or one emollient for another emollient, etc.

For example, if a formula is using Sodium PCA as a humectant and you cannot find it, you could select an alternative humectant such as glycerin. If a product uses an essential oil that you cannot find then you can choose another.

3. What benefit does this ingredient offer?

If you want to stay true to the original purpose of the product you will want to find something else that offers the same or similar benefit.

For example, if it is an anti-aging active that needs replacing, you will want to replace it with another anti-aging active. If it is an uplifting essential oil then you will want to replace it with another uplifting essential oil. Similarly, a carrier oil that assists in skin barrier repair will need to be replaced with another that offers this, too.

If you want to alter the benefit of the product then you can do that too, by selecting an ingredient which offers a different benefit.

4. What skin feel does it give? What is its absorption rate?

These are useful questions to ask when substituting carrier oils or butters. Some carrier oils have a light feeling on the skin and others a medium or heavier feeling. Some are quickly absorbed, others take longer to be absorbed.

If you want to create something similar to the original product then you will want to substitute like for like. So one fast absorbing oil for another, for example.

If you want to adapt the product and create something a little different then you could mix it up a bit and substitute an oil for an ingredient with a different skin feel or absorption rate.

5. What alternative options are there?

The next step is to list your options for substitutions. This will take a bit of thinking and research. If you are restricted to using a particular supplier you will need to see what else they sell that is suitable.

Once you have a shortlist of ingredients, you can ask yourself:

- Can I get hold of this easily?
- Is it within my price range?

Now you can refine your list further.

6. Practice and experiment.

Rewrite the recipe or formula with your chosen substitute ingredient and consider if you need to alter the amount or percentage it is being used at. For example, if you are replacing a soft butter such as shea butter with a harder butter such as cocoa butter you may want to reduce the amount or percentage that the butter is being used at. Emulsifiers may also need to be used at a different percentage to achieve a similar result.

Try making the product with one of your substitute ingredients. Record the results. Are you happy with the result or do you want to try something different?

WHEN YOU CANNOT FIND A SUBSTITUTE

Some ingredients are very specialized and it is not easy to find a direct substitute. Examples include self-emulsifying emulsifiers, for example. In these cases we suggest looking for a supplier that ships internationally to your country. Many suppliers on our supplier list will ship overseas.

SUMMARY

If you want to substitute one ingredient for another and retain the original purpose of the product then we suggest finding a substitute ingredient with the same function so you are substituting like for like. Some ingredients are very specialized and it is not easy to find a direct substitute; in this case we suggest finding a supplier that ships internationally to your country.

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