Search Matters 2018

Searching for blends of ingredients

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Swiss/Italian

Trained organic chemist, graduated from Geneva University and PhD at the LMU Munich

9 years experience as an examiner in cosmetics at the EPO

Technical field: Cosmetics (A61K8, A61Q)
Outline

- Introduction
- Typical problem relating to blends of ingredients
- Defining a strategy
- Search tools: classes (CPC, F-terms)
- Search tools: Mintel GNPD
- Example
- Conclusion
Introduction: Goal

What is the goal of the search?

- Fulfilment of the requirements of novelty and inventive step
- Interest of the public vs interest of the applicant
- Having claims which reflect the invention in a reasonable manner

Guidelines B-II, 2
Outline

- Introduction
- Typical problem relating to blends of ingredients
- Defining a strategy
- Search tools: classes (CPC, F-terms)
- Search tools: Mintel GNPD
- Example
- Conclusion
Typical problem relating to blends of ingredients

Composition comprising:

A. Olive oil
B. Sodium laureth sulphate and
C. Xanthan gum

Specific ingredients
Typical problem relating to blends of ingredients

Composition comprising:

A. At least an oil
B. At least a surfactant and
C. At least a thickening agent

Ingredients defined as functional features

Guidelines B-III, 3.6
Outline

- Introduction
- Typical problem relating to blends of ingredients
- Defining a strategy
- Search tools: classes (CPC, F-terms)
- Search tools: Mintel GNPD
- Example
- Conclusion
Defining a strategy: The Options

- Online patent databases: EPODOC, WPI Derwent, ...
- Online journals: Non-Patent-Literature, Google Scholar
- External databases: Mintel GNPD, Chemical Abstract, INCI
- Internet resources: Technical datasheets of suppliers, blogs (Google)
Defining a strategy: 3 steps

1. The Application  
   - claims, technical problem/examples

2. Novelty  
   - ingredients, technical features

3. Inventive step  
   - (blend of) ingredients in relation to the technical problem/effect
## Defining a strategy: 1. The Application

<table>
<thead>
<tr>
<th>Claims (N + IS)</th>
<th>Description (IS)</th>
<th>Examples (IS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- ingredients</td>
<td>- cited prior art</td>
<td>- representative examples of the invention</td>
</tr>
<tr>
<td>- functional features</td>
<td>- what is the problem to be solved</td>
<td>- comparative data?</td>
</tr>
<tr>
<td>- parameters</td>
<td>- synonyms for ingredients, trade marks, equivalents</td>
<td>- what has been shown</td>
</tr>
<tr>
<td>- field of application</td>
<td></td>
<td></td>
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</tbody>
</table>
Defining a strategy:

β Construe the claims ‡ what falls within the scope

β Search the core of the invention ‡ preferred embodiments, examples ...

β Check the difference between what you have searched and what is covered by the claims, then complete the search while assessing the possible fall back positions

Guidelines F-IV, 4.13
## Defining a strategy: 2. Novelty

<table>
<thead>
<tr>
<th>Classes</th>
<th>KW</th>
<th>External DB</th>
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</thead>
<tbody>
<tr>
<td>CPC/IC</td>
<td>full-text searching:</td>
<td>Mintel GNPD:</td>
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<td>• use</td>
<td>∟ Ingredients</td>
<td>• commercial products</td>
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<td>• ingredient</td>
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<td></td>
</tr>
<tr>
<td>• specific function</td>
<td>effect</td>
<td>Internet:</td>
</tr>
<tr>
<td>JP classification</td>
<td>• function</td>
<td>• technical sheet</td>
</tr>
<tr>
<td>• ingredient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• specific function</td>
<td></td>
<td>Chemical abstract</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• structure</td>
</tr>
</tbody>
</table>
Defining a strategy: 2. Novelty

Finding keywords and synonyms:

- Description itself

  [http://webdictionary.personalcarecouncil.org/jsp/Home.jsp](http://webdictionary.personalcarecouncil.org/jsp/Home.jsp)

- Internet: Technical data sheet of suppliers
wINCI: example for xanthan gum

**Xanthan Gum**

- **INCI Name:** Xanthan Gum
- **INCI Monograph ID:** 3365
- **CAS No:** EINECS (8) / ELINCS (E.):
  - 11138-66-2
  - 234-394-2 (I)

**Definition:** Xanthan Gum is a high molecular weight heteropolysaccharide gum produced by a pure culture fermentation of a carbohydrate with Xanthomonas campestris.


- **Chemical Class(es):** Gums, Hydrophilic Collagens and Derivatives (Including salts)
- **Reported Functions:** Binders; Emulsion Stabilizers; Skin Conditioners; Agents - Emulsifying; Agents - Viscosity Increasing; Agents - Aqueous
- **Reported Product Categories:** Emulsifiers/Emulsion Stabilizers; Baby Products; Baby Products; Cosmetics and Creams; Baby Products; Misc; Baby Shampoos; Bath Care Products: Bath Oils, Tablets, and Salts; Bat Preparations; Misc; Bath Salts and Deodorants; Blushers (All types); Body and Hand Preparations (Including Shaving Preparations); Bubble Baths; Cleansing Products (Cold Creams); Cleansing Lotion; Lotion and Pads, Colored and Toilet Waters; Deodorants; AEROSOL, Liquid Paints and Powders; Foundation (Underarm) Eye Lotion; Eye Makeup Preparations; Misc; Eye Makeup Removers; Eye Shadows; Eyelash Pencils; Eyeliner; Face Powders; Face and Neck Preparations (Including Shaving Preparations); Foot Powders; and Grooming Products; Fragrance Preparations; Misc; Hair Reaches; Hair Coloring Preparations; Misc; Hair Conditioners; Hair Dyes and Colors (All Types) Requiring Caution Statements and Patch Testing; Hair Lighteners with Color; Hair Preparations (Non-coloring); Misc; Hair Rings (Non-coloring); Hair Straighteners; Hair Wave Sets; Introl Tanning Preparations; Lac and Body Paints; Lipskicks; Makeup Bases; Make-up Fixatives; Makeup Preparations (Non-wax); Misc; Manicuring Preparations Misc; Mascara; Moisturizing Preparations; Mouthwashes and Breath Fresheners (Dental and Skin Care Products; Misc; Paste Masks; Mud Packs); Perfumes; Personal Cleanliness Products; Misc; Powders (Brushing and Talcum); Exudating After-shave Fluids; Preshave Lotions (All types); Rouges; Shampoos (Non-coloring); Shaving Cream (Aerosol, Brushless and Lather); Shaving Preparations; Misc; Skin Care Preparations; Misc; Skin Refreshers; Sun tan Gels, Creases, and Linseed; Sun tan Preparations; Misc; Tonics; Dressings; and Other Hair Grooming Ads
- **Ingredient Source(s):** Bacteria, Fungi, or other Microbial Cell Organisms
- **Technical Name(s):**
  - Corn Sugar Gum
  - gymnæ xanthium (EP)
  - Xanthan
- **Trade Name(s):** [Click here to view full list of Trade Names](#)
- **Trade Name Mixture(s):** [Click here to view full list of Trade Name Mixtures](#)
- **Translations:**
  - Chinese Translation
  - Japanese Translation
  - Korean Translation
Technical data sheet: thickening agent

**CONTEXT**

The pollutants which constitute our daily and outside environment must be rightly considered as important sources of cutaneous stress, even if they were underestimated for a long time. The evolution of our lifestyles and the increasing urbanization during these past years amplify the risks, making the pollution one of the major sources of concern for the health and beauty. Cells, their lipid and protein components but also their DNA are the targets of pollutants; generation of oxidation and inflammation. Day, night, reactivity and sensitive skin, are and more particularly premature and accelerated aging are so many consequences to bear for us!

**DEFINITION**

Created to form a film on the skin and hair surface, GLYCOFILM® POLLUSTOP® is a polysaccharide matrix of high molecular weight, obtained by biotechnology.

**MODE OF ACTION**

Thanks to its matrix-forming property, GLYCOFILM® POLLUSTOP® is an effective barrier for the protection of the skin.

- Atmosphere (carbon particles, particulate matter and heavy metals)
- UV
- Domestic (chemicals)
- To treat the acute and inflammatory induced damages: oxidative stress, inflammatory, cellular and mitochondrial toxicity.

**ADDITIONAL INFORMATION**

**INGREDIENTS**

- Glycerine 1.5F, Biosaccharide gum-4
- Pollustop®: Biosaccharide gum-4 and L2 hemisemide

**Preservative system**

- Glycolic acid 1.5F, Phenoxethanol
- POLLUSTOP®: preservative free

**Regulatory status**

- Authorized for use in EU, USA, China (KON 2015, KLOC)
- Japan, Australia and Canada subject to conditions
**PROTECTION AGAINST UV**

1. **ON SKIN**
   - **In vitro study**
     - On reconstructed epidermis, topical application of Gucam® 1.5P (or Pollow®) at 5% vs. Control / UV irradiation / Visibly evaluated by dosage of lactate dehydrogenase (enzyme testifying of membrane alteration) end of IL-1α released in culture medium (Blue kit) / Coloring, visualization on histological section and enumeration of Sun Burn Cells
     - **Results:**
       - +68% vs. Control / UV
       - +53% vs. Control / UV
       - +37% vs. Control / UV
     - **Significant increase of cell viability**
     - **Significant preservation from UV-induced inflammation**

2. **OPTIMIZATION OF SOLAR PROTECTION**
   - **In vivo study**
     - On 10 volunteers application on back of creams containing Gucam® 1.5P (or Pollow®) (3 and 5%) associated or not to matrix co-solvent (NaCl, PEG-8) vs. Placebo / UV irradiation / Evaluation and measure of Gucam® 1.5P (or Pollow®) interactivity via the SPF (Solar Protection Factor) calculation
     - **Results:**
       - Test 1: 31.31, Test 2: 23.09, Test 3: 23.64
       - Boosts SPF: +1 to 3 points
     - **Formulation:**
       - **Formulation type:**
         - *Gucam®* (or *Pollow®*) interacts positively with salicylic, glycolic, alcohol, PFS to form organized gel-like structures, thereby increasing itsmatrix effect and stabilizing properties
       - Formulation example:
         - **UNDER Cover SHIELD** - Primer
         - **INVISIGUARD**
         - **INVISIGUARD**

3. **ON HAIR**
   - **Ex vivo study**
     - On hair locks topical application of Gucam® 1.5P (or Pollow®) at 1% / incorporation of a fluorescent labelling and irradiation of hair locks (UVA-UVB) / Measure by fluorescence of the free radicals produced
     - **Results:**
       - +76% of anti-free radicals efficacy

**APPLICATIONS**
- From 2% to 5%
- Everyday protection skin and hair care
- Anti-pollution
- Anti-aging
- Sun care

**FORMULATION**
- **pH stability:** 6.0
- Thermoreactivity: Incorporation at high or low temperature
- Soluble in water, glycerin, glycol, 20% ethanolic solution

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  - Germany: +49 69 205 85-0

March 2016
- Rome, Italy
- European Patent Office
**Technical data sheet: Dow Corning**

**Dow Corning® 2-2078 Fluid**

Long lasting shine, straightening, heat and color protection

**INCI NAME**: Amino[propyl]phenyl trimethicone

**APPLICATIONS**
- Leave-in and styling hair products including shine sprays, gels, lotions, and heat protectants
- Hair conditioning products, shampoos, and conditioners
- Skin care products, lip sticks, and nail varnishes

**TYPICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear to slightly hazy</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Columbia to pale yellow</td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Viscosity @ 25°C (cP)</td>
<td>1000-2000</td>
<td></td>
</tr>
<tr>
<td>Softness index</td>
<td>1.00-1.50</td>
<td></td>
</tr>
<tr>
<td>Logarithm of (D) at 20°C</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

**DESCRIPTION**

Dow Corning® 2-2078 Fluid is a liquid amino phenyl silicone resin. It was developed to provide high gloss and smoothness in personal care applications, e.g., hair care, skin care, and color cosmetics.

**BENEFITS**

Dow Corning 2-2078 Fluid provides improved long lasting shine to hair. (Figure 1). Dow Corning 2-2078 Fluid protects hair from damage during heat treatments and protects color holding from chlorine loads. Dow Corning 2-2078 Fluid provides straightening enhancement when used in a lye relaxer (Figure 2). Hair fibers treated with Dow Corning 2-2078 Fluid exhibited hair strengthening benefits. (Figure 3). Dow Corning 2-2078 Fluid provides volumization to lip sticks and nail varnishes, as well as enhanced fragrance delivery in skin care formulations.

**HOW TO USE**

Dow Corning 2-2078 Fluid can be added into the oil phase of the formulation. Recommended use levels for hair care products are 0.1% to 2%. For skin silicones formulations a small amount of ethanol will help
Prototype Formulation: Shine and Conditioning Spray with Sunscreen (Formulation number 00564)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Wt.%</th>
<th>Trade Name Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ethyl alcohol 200 proof</td>
<td>30</td>
<td>Dow Corning 2-2078 Fluid</td>
</tr>
<tr>
<td>2. Aminopropyl phenyl trimethicone</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Phase B</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Cyclomethicone</td>
<td>52.5</td>
<td>XIAMETER® PMX-0245 Cyclopentasiloxane Fluid</td>
</tr>
<tr>
<td>4. Isododecane</td>
<td>15</td>
<td>Fancol® ID CG/Elementis Specialties, Inc.</td>
</tr>
<tr>
<td>5. Ethylhexyl methoxycinnamate</td>
<td>0.5</td>
<td>PARSOL® MCX/DSM Nutritional Products</td>
</tr>
</tbody>
</table>

**Procedure**
1. Mix ingredients of Phase A together.
2. Mix until uniform.
3. Add Phase B ingredients in order.
4. Mix until uniform after each addition.

**Variations**
Alternative Dow Corning Products have not been tested as of this printing.

**Stability**
Stable for at least 2 months at room temperature and 45°C (113°F). Passes 5 freeze/thaw cycles.

**Attributes**
Contains a sunscreen (not tested for efficacy).

**External Reference Material**
No external references identified as of this printing.

Dow Corning Application Patents
Dow Corning hopes that this suggested formulation will be of interest to you, but you should be cautioned that this is only a representative formulation and is not a commercialized product. Dow Corning believes that the information and data on which this formulation is based are reliable, but it has not been subjected to extensive testing for performance, efficacy or safety. In addition, Dow Corning has not undertaken a comprehensive patent search on the formulation. BEFORE COMMERCIALIZATION, YOU SHOULD THOROUGHLY TEST THE FORMULATION OR ANY VARIATION OF IT TO DETERMINE ITS PERFORMANCE, EFFICACY AND SAFETY. IT IS YOUR RESPONSIBILITY TO OBTAIN ANY NECESSARY GOVERNMENT CLEARANCE, LICENSE OR REGISTRATION. Suggestions of uses should not be taken as inducements to infringe any particular patent.

Fancol is a registered trademark of Elementis Specialties, Inc. PARSOL is among the registered and unregistered trademarks of DSM Nutritional Products Ltd.
Defining a strategy: 3. Inventive step

**Claims (N + IS)**
- ingredients
- functional features
- parameters
- field of application

**Description (IS)**
- cited prior art
- what is the problem to be solved
- synonyms for ingredients, trade marks, equivalents

**Examples (IS)**
- representative examples of the invention
- comparative data?
- what has been shown
Defining a strategy: 3. Inventive step

Inventive step:

§ Same application/field
  † restriction with the use of classes (e.g. A61Q), specific categories in GNPD

§ Needs to solve the same technical problem
  † keywords search / classes (e.g. A61K2800)
Defining a strategy: 3. Inventive step

Remember:

- It is important to distinguish the search for **Novelty** to the search for **Inventive Step**

- Often the best document is not an X doc

- Always search for novelty AND inventive step even if you already have an X doc
Outline

- Introduction
- Typical problem relating to blends of ingredients
- Defining a strategy
- Search tools: classes (CPC, F-terms)
- Search tools: Mintel GNPD
- Example
- Conclusion
Search Tools: Classes

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<td>• ingredient</td>
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<td>⬇ effect</td>
<td>⬇ Internet:</td>
</tr>
<tr>
<td>⬇ JP classification</td>
<td>• function</td>
<td>• technical sheet</td>
</tr>
<tr>
<td>• ingredient</td>
<td></td>
<td>⬇ Chemical abstract</td>
</tr>
<tr>
<td>• specific function</td>
<td></td>
<td>• structure</td>
</tr>
</tbody>
</table>
Search tools: CPC

pector specific ingredients or specific form e.g. A61K8
  Novelty, IS

pector specific use e.g. A61Q for cosmetics
  subset for IS search

pector properties of the composition or the active ingredient e.g. A61K2800
  specific functionality/effect, IS

https://worldwide.espacenet.com/classification
Search tools: CPC • A61K8 + A61K2800/60

- A61K8/0241 ... {Containing particulates characterized by their shape and/or structure (see also A61K8/04, A61K8/0245 ... {Specific shapes or structures not provided for by any of the groups of A61K8/0241)
  - A61K8/025 ... {Explicitly spheroidal or spherical shape}
  - A61K8/0254 ... {Platelets; Flakes}
    - A61K8/0258 ... {Layered structure}
    - A61K8/027 ... {Fibers; Fibrils}
    - A61K8/0275 ... {Containing agglomerated particulates}
    - A61K8/0279 ... {Porous; Hollow}
    - A61K8/0283 ... {Matrix particles}
      - A61K8/0287 ... {the particulate containing a solid-in-solid dispersion}

- A61K2800/60 ... Particulates further characterized by their structure or composition
  - A61K2800/61 ... Surface treated
    - A61K2800/612 ... By organic compounds
    - A61K2800/614 ... By macromolecular compounds
  - A61K2800/62 ... Coated
    - A61K2800/621 ... by inorganic compounds
    - A61K2800/622 ... by organic compounds
    - A61K2800/623 ... Coating mediated by organosilicone compounds
    - A61K2800/624 ... by macromolecular compounds
    - A61K2800/63 ... More than one coating
  - A61K2800/65 ... Characterized by the composition of the particulate/core
    - A61K2800/651 ... The particulate/core comprising inorganic material
    - A61K2800/652 ... The particulate/core comprising organic material
    - A61K2800/654 ... The particulate/core comprising macromolecular material
Search tools: CPC • A61K2800

- A61K2800/00 Properties of cosmetic compositions or active ingredients thereof or formulation aids used therein and process related as
  - A61K2800/10 General cosmetic use
  - A61K2800/20 Chemical, physico-chemical or functional or structural properties of the composition as a whole
    - A61K2800/21 Emulsions characterized by droplet sizes below 1 micron
  - A61K2800/22 Gas releasing
  - A61K2800/24 Thermal properties
  - A61K2800/26 Optical properties
    - A61K2800/262 Transparent; Translucent
  - A61K2800/28 Rubbing or scrubbing compositions; Peeling or abrasive compositions; Containing exfoliants
  - A61K2800/30 Characterized by the absence of a particular group of ingredients
  - A61K2800/40 Chemical, physico-chemical or functional or structural properties of particular ingredients
    - A61K2800/41 Particular ingredients further characterized by their size
    - A61K2800/42 Colour properties
      - A61K2800/47 Magnetic materials; Paramagnetic compounds
    - A61K2800/48 Thickener, Thickening system
    - A61K2800/49 Solubiliser, Solubilising system
  - A61K2800/51 Chelating agents
  - A61K2800/52 Stabilizers
    - A61K2800/522 Antioxidants; Radical scavengers
    - A61K2800/524 Preservatives
  - A61K2800/526 Corrosion inhibitors
  - A61K2800/54 Polymers characterized by specific structures/properties
    - A61K2800/542 Characterized by the charge
      - A61K2800/5422 Nonionic
      - A61K2800/5424 Anionic
      - A61K2800/5426 Cationic
      - A61K2800/5428 Emphoric or zwitterionic
    - A61K2800/544 Dendrimers, hyperbranched polymers
    - A61K2800/546 Solvable particulate polymers
    - A61K2800/548 Associative polymers
  - A61K2800/55 Compounds, adsorbed onto or entrapped into a solid carrier, e.g. encapsulated perfumes, inclusion compounds
  - A61K2800/57 Compounds covalently linked to an inert carrier molecule, e.g. conjugates, pro-fragrances
  - A61K2800/59 Metal complex; Coordination compounds
  - A61K2800/599 Mixtures
  - A61K2800/5999 Particulates further characterized by their structure or composition
  - A61K2800/70 Biological properties of the composition as a whole
  - A61K2800/74 Biological properties of particular ingredients
  - A61K2800/80 Process related aspects concerning the preparation of the cosmetic composition or the storage or application thereof
Search tools: Classes

Specific ingredients
e.g. A61K8

Specific use
e.g. A61Q

Additional properties
e.g. A61K2800

CPA
Search tools: Classes in Espacenet

β go to Advance search

β to cross classes use AND in CPC field

β combination with keywords in Title or abstract field
CPC-coverage of Asian patent information

Example of coverage for A61K8:
- CPC 45%
- IPC (no CPC) 55%

For documents not classified in CPC:
- JP 47%
- KR 14%
- CN 31%
- Other 8%
Evolution of the number of families in the field A61K8 over time

- the overall documentation in our field is increasing yearly
- the CPC classified documentation is decreasing compared to the non CPC classified Asian documentation
- trend among the non CPC classified documents: the number of newly published Chinese documents is largely surpassing the number of JP and KR documents
F-terms – Where to get them

JPO's J-PlatPat platform offers additional features such as more detailed "field specific descriptions" including sample figures next to the English titles of the classification codes.

To access it, go to https://www.j-platpat.inpit.go.jp/web/all/top/BTmTopEnglishPage, click on "Patent Map Guidance".
Search tools: Japanese classification

F-terms scheme is in some cases more precise than CPC scheme

Chemically: A61K8/345 Alcohols containing more than one hydroxy group

4C083/AC11 Polyhydroxylic alcohols
4C083/AC12 Glycerines, 1, 3-BG, PG
4C083/AC13 Sugar alcohols
Search tools: F-terms

**Functionally:**

**A61Q11/00** Preparations for care of the teeth/oral cavity/dentures; e.g. dentifrices, toothpastes, mouth rinses

**4C083/EE31** Effects peculiar to uses in mouth and teeth
**4C083/EE32** Tooth decay prevention
**4C083/EE35** Teeth Whitening (tar removal, polishing powers, cleaning powers)
**4C083/EE38** Hypersensitivity
Search tools: F-terms

Apply the same logic as for CPC classes:

Cross the class for **chemical ingredient** with the class for the **use**, possibly with any additional properties/function.
Outline

§ Introduction
§ Typical problem relating to blends of ingredients
§ Defining a strategy
§ Search tools: classes (CPC, F-terms)
§ Search tools: Mintel GNPD
§ Example
§ Conclusion
## Search tools: Mintel GNPD

### Classes
- CPC / IC
  - use
  - ingredient
  - specific function
- JP classification
  - ingredient
  - specific function

### KW
- full-text searching:
  - Ingredients
    - synonyms
  - effect
    - function

### External DB
- Mintel GNPD:
  - commercial products
- Google:
  - technical sheet
- Chemical abstract
  - structure
Search tools: Mintel GNPD

Features of the website:

- "Search for": free-text search
- "Date published": between two dates
- Search by Category: cosmetic, household, health & hygiene
- Ingredients: individually, chemical class, chemical functions
- Claims e.g. free from, anti-dandruff, whitening
- Packaging features e.g. aerosols, tubes
Novelty – example 1: US 2015/0038592

Claim 1:
"A cosmetic and/or dermatological preparation, wherein the preparation is flowable at room temperature and is based on a water-in-oil emulsion comprising at least two W/O emulsifiers and one or more oils having a spreadability value greater than 600 mm$^2$/10 min."

Dependent claims:
"The preparation of claim 1, wherein the at least two W/O emulsifiers comprise diisostearoyl polyglyceryl-3 dimer dilinoleate and polyglyceryl-4 diisostearate/polyhydroxystearate/sebacate."
Novelty – US 2015/0038592

The preferred range for oil is 1% to 30% by weight.

<table>
<thead>
<tr>
<th>INCI</th>
<th>Viscosity [mPas]</th>
<th>Spreadability (20 µl/red band filter) [mm²/10 min]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl Palmitate</td>
<td>6.2</td>
<td>625</td>
</tr>
<tr>
<td>Isopropyl Myristate</td>
<td>4.6</td>
<td>707</td>
</tr>
<tr>
<td>Coco-Caprylate/Caprate</td>
<td>5</td>
<td>755</td>
</tr>
<tr>
<td>Isopropyl Isostearate</td>
<td>9.5</td>
<td>790</td>
</tr>
<tr>
<td>Cyclomethicone</td>
<td>4.5</td>
<td>804-845</td>
</tr>
<tr>
<td>Butyl Glycol</td>
<td>9.6</td>
<td>813</td>
</tr>
<tr>
<td>Dicaprylate/Dicaprate</td>
<td>6.3</td>
<td>875</td>
</tr>
<tr>
<td>Dicapryl Carbonate</td>
<td>6.8</td>
<td>910</td>
</tr>
<tr>
<td>Ethylhexyl Cocoate</td>
<td>7.9</td>
<td>930</td>
</tr>
<tr>
<td>Diaryl Adipate</td>
<td>5</td>
<td>935</td>
</tr>
<tr>
<td>Isodecyl Neopentanoate</td>
<td>3.8</td>
<td>962</td>
</tr>
<tr>
<td>Isohexadecane</td>
<td>3.7</td>
<td>990</td>
</tr>
<tr>
<td>C13-16 Isoparaffin</td>
<td>2.6</td>
<td>1018</td>
</tr>
<tr>
<td>Dicapryl Ether</td>
<td>3.3</td>
<td>1020</td>
</tr>
</tbody>
</table>

[0052] Preferred oils to be used are isopropyl palmitate with a spreadability value of about 625 mm²/10 min and C13-16 isoparaffin with a spreadability value of about 1018 mm²/10 min.
Novelty – US 2015/0038592

[0014] It is therefore desirable to provide emulsion preparations without ethoxylated emulsifiers which nevertheless can be varied as widely as possible and are above all else stable emulsions.

[0015] Furthermore, cosmetic or dermatological preparations have to satisfy a number of aesthetic and sensory aspects in order to achieve adequate consumer acceptance.

[0031] It was therefore a further object of the present invention to provide preparations which, besides the criteria customary for cosmetics such as compatibility, storage stability and the like, also offer the consumer essential, hitherto unknown cosmetic, in particular sensory, benefits. In particular, it was an aim to provide a storage-stable formulation which imparts care without at the same time being slippery, oily or greasy and at the same time displaying a definite “lotion appearance”, i.e. flowable, and NOT a cream appearance.

<table>
<thead>
<tr>
<th>EXAMPLE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% Polyglyceryl-4 Distearate/Polyhydroxystearate/Schacate</td>
</tr>
<tr>
<td>1.9% Distearooyl Polyglyceryl-3 Dimer Dilinolenate</td>
</tr>
<tr>
<td>3% Cera Microcrystallina</td>
</tr>
<tr>
<td>10% Isopropyl Myristate</td>
</tr>
<tr>
<td>10% Decapryl Ether</td>
</tr>
<tr>
<td>1% Talc</td>
</tr>
<tr>
<td>12% Glycerin</td>
</tr>
<tr>
<td>0.075% Propylene glycol</td>
</tr>
<tr>
<td>0.1% Hexanediol</td>
</tr>
<tr>
<td>0.15% Potassium Sorbate</td>
</tr>
<tr>
<td>0.1% Citric Acid</td>
</tr>
<tr>
<td>0.2% Sodium Citrate</td>
</tr>
<tr>
<td>0.4% Perfume</td>
</tr>
<tr>
<td>with Aqua ad 100%</td>
</tr>
</tbody>
</table>
Zoé Cream & Oil Body Milk

Zoé Cream & Oil Body Milk contains 20% caring oils, panthenol, vitamin E and macadamia nut oil. It is claimed to provide the skin with up to 48-hour moisture, while protecting it from external aggressors. The product is suitable for normal and dry skin, has been dermatologically tested and retails in a 250ml pack.

**Ingredients:**


**Claims:**

Vitamin/Mineral Fortified, Botanical/Herbal, Dermatologically Tested, Long-Lasting, Moisturizing / Hydrating, Protects Against Elements

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**Company:** Migros-Genossenschafts-Bund  
**Country:** Switzerland  
**Date Published:** Jan 2012  
**Sub-Category:** Body Care  
**Price:** CHF13.50 / $14.79 / €11.09  
**Pack Size:** 250.000 ml / 250.000 ml
Inventive step – example 2: WO 2017/133874

A hair conditioning composition comprising:
(a) from 0.1 to 10% by weight of a silicone compound;
(b) from 0.1 to 5% by weight of a cationic surfactant;
(c) from 0.01 to 5% by weight of a zinc based anti dandruff agent;
(d) from 0 to 1% of a cyclomethicone compound; and
(e) a stabilizing polymer selected from a poloxamer."

Technical problem:
The provision of an anti-dandruff composition that does not foul
Dove Anti-Dandruff Conditioner

Dove Anti-Dandruff Conditioner nourishes hair deeply with 1/4 moisturizing cream and a ZPTO formula to treat dandruff effectively. It is available in 300ml and 700ml bottles.

**Ingredients:**
Zinc Pyrithione (c), Aqua, Dimethiconol (a), TEA-dodecylbenzenesulfonate, Cetrimonium Chloride (b), Dimethicone (a), C11-15 Pareth-3, C11-15 pareth-23, Poloxamer 407 (e), Cetearyl Alcohol, Glycerin, Cyclomethicone (d), fragrance, Behentrimonium Chloride (b), Zinc Sulfate, Stearamidopropyl Dimethylamine, Hydroxyethylcellulose, DMDM Hydantoin, Methylparaben, Citric Acid

**Claims:**
Anti-Dandruff, Skin Disorders

**Company:** Unilever  
**Country:** Taiwan  
**Date Published:** Apr 2007  
**Sub-Category:** Conditioner  
**Price:** TWD109.00 / $3.29 / €2.46  
**Pack Size:** 300.00 ml / 300.00 ml

**Database accession number:** 687845
Outline

- Introduction
- Typical problem relating to blends of ingredients
- Defining a strategy
- Search tools: classes (CPC, F-terms)
- Search tools: Mintel GNPD
- Example
- Conclusion
Example: WO 2017/071822

Claim 1:

"A composition comprising: an O-substituted ascorbic acid or derivative thereof; a matrix metalloproteinase inhibitor (MMPi); and hibiscus and/or a peptide, wherein the composition comprises an aqueous phase present at up to 95 wt %, or up to 90 wt % of the composition."
Example: WO 2017/071822

Technical problem:

"Decrease or prevent at least one of the following forming wrinkles or fine lines, skin sagging, or hyperpigmentation, or increasing skin firmness or skin laxity. In one embodiment the disclosed technology additionally provides whitening/lightening/ even tone to skin."
The O-substituted ascorbic acid or derivative thereof may be an O-alk(en)yl ascorbic acid or derivative thereof.

The term "matrix metalloproteinase inhibitor" relates to all molecule and/or plant or bacterial extracts having an inhibitory activity on at least one of the matrix metalloproteinases expressed, synthetized or activated by or in the skin.
MMPi are exclusively chosen from retinoid, N-acetyl cysteine, glutathione, 2-furildioxime, vitamin C (other than the O-substituted ascorbic acid), hydrolysed rice protein, alfalfa extract, white lupine, zizyphus jujube extract, kudzu extract, vitis vinifera extract, Oenothera biennis extract, Anogeissus leiocarpus extract and mixtures thereof.
WO 2017/071822: Examples

Example 1: o/w emulsion
65 wt % water, 10 wt % dimethicone, 0.2 wt % hibiscus extract, 0.09 wt % hydrolysed rice protein, 0.5 wt % of 3-ethyl ascorbic acid, and 0.004 wt % a mixture of peptides.

Comparative example 1:
commercially available o/w emulsion containing ascorbyl glucoside.
WO 2017/071822: Strategy

1. Retrieve classes, key words from the description/claims:

2. For novelty search in Abstract DB (Espacenet, WPI)
   Mintel GNPD
Botanicals Confinature Herbal Emollient Serum

Confinature is a herbal skincare range from Botanicals, which specializes in herbs. .... The Herbal Emollient Serum is a rich textured gel that turns into liquid upon application, absorbing smoothly into skin. It contains rosehip oil and artichoke leaf extract to provide moisture, work on dryness, dullness and open pores, and leave skin translucent and plump, delicately scented with notes of chamomile and lavender. The serum is also free from phenoxyethanol and petroleum surfactant, and was launched on 20 February, 2010.

Ingredients:
Aqua, glycerin, butylene glycol, pentylene glycol, sorbitol, ... hydrolyzed hibiscus esculentus extract, ... retinyl palmitate (= retinoid), ethyl ascorbic acid, tocopherol, sodium PCA, hydrolyzed potato protein, Neopentyl Glycol Dicaprate, PEG-60 Hydrogenated Castor Oil, ...

Claims:
No Additives/Preservatives, Aromatherapy, Botanical/Herbal, Moisturizing / Hydrating, Plumping, Alcohol Free, Paraben Free, Mineral Oil/Petroleum Free
EXC Platinum Cream

EXC Platinum Cream is described as a functional moisturising cream featuring antioxidant DDS Technology and Nano Sphere System that seals beauty ingredients into nano-sized capsules for smooth absorption and a long-lasting effect. **It is formulated with: five types of peptide to provide firmness and elasticity; and four vitamin derivatives to refine the skin texture and add radiance and translucency.** The cream is claimed to gently envelop skin with a veil of moisture and prevent dehydration for a vibrant look.

**Ingredients:**
Aqua, glycerin, ..., **potassium ascorbyl tocopheryl phosphate**, ethyl ascorbic acid, palmitoyl tripeptide-5, palmitoyl pentapeptide-4, acetyl tetrapeptide-2, acetyl tetrapeptide-9, acetyl hexapeptide-8, ... , **hydrolyzed rice protein**, superoxide dismutase, ... .

**Claims:**
No Additives/Preservatives, Vitamin/Mineral Fortified, Fragrance Free, Antioxidant, Anti-Ageing, Brightening / Illuminating, Firming, Long-Lasting, Moisturising / Hydrating, Alcohol Free, No Animal Ingredients

**Database accession number:** 2229326
WO 2017/071822: Strategy

3. Inventive step: ingredients in relation to the effect, i.e. anti-aging

A61Q19/08 (A61Q19/02)
A61K8/97 or A61K8/64

A61K8/676 (vit. C)
A61K8/645 (peptides)

Search with classes in combination with key words

§ A number of documents were cited in the description as prior art
    consult them!

§ Non-patent literature search for plant extract (hibiscus)
D10 was retrieved:

White lupine is also a MMPi according to the invention!
Outline

- Introduction
- Typical problem relating to blends of ingredients
- Defining a strategy
- Search tools: classes (CPC, F-terms)
- Search tools: Mintel GNPD
- Example
- Conclusion
Conclusion

Start from the claims and the description

Strategy: distinguish the search for novelty and inventive step

Search: focus on ingredients for novelty search

Focus on the problem to be solved and to what has been shown in the description

Ingredients \( \leftrightarrow \) technical effect

Make use of the classes CPC and F-terms
Questions?