1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: SILIGEL™
Recommended uses: Raw material which could be used in cosmetic formulations
Supplier: LUCAS MEYER COSMETICS
                ZA LES BELLES FONTAINES - 99 ROUTE DE VERSAILLES
                91160 - CHAMPLAN - FRANCE
Phone number: (33) (0)1 69 10 69 69
Fax number: (33) (0)1 69 10 69 70
EMERGENCY PHONE NUMBER: ORFILA (France): (33) (0)1 45 42 59 59
Department to contact: e-mail: info@lucasmeyercosmetics.com

2. HAZARD IDENTIFICATION

Most important hazards:

Adverse human health effects: According to our knowledge, no specific risks when handled in accordance with good occupational hygiene and safety practices.

Environmental effects: Presents no particular risks to the environment, provided the disposal requirements (see section 13) and national or local regulations are complied with.

Physical and chemical hazards:
-Fire or explosion: According to our knowledge, no specific hazard under normal conditions of use.

Classification of the product: This product is not classified as a hazardous mixture according to CLP regulation (EC) n° 1272/2008.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature:
Mixture mainly composed of:

Hazardous constituents: None
4. FIRST AID MEASURES

Skin contact:    Wash with soap and plenty of water.

Eye contact:    Rinse with plenty of water immediately and extended in keeping the eyes disregard. Consult an ophthalmologist.

Ingestion:      No danger which requires special measures of first aid. This product should not be toxic.

Inhalation:     Move the affected person away from the contaminated area and into the fresh air.

5. FIRE- FIGHTING MEASURES

Flammability: The product is not flammable.

Suitable extinguishing media: Carbon dioxide (CO\textsubscript{2}), foam, powders.

Specific hazards:
- Under the action of heat or during combustion: May form toxic and irritating vapours (carbon oxides (CO and CO\textsubscript{2}) and nitrogen oxides NO\textsubscript{x}).

Specific fire fighting methods: Avoid the dumping of extinguishing water in the environment. Do not attempt to fight the fire without suitable protective equipment.

Protection of fire-fighters: Complete protective clothing. Self-contained and insulating breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with skin, eyes and clothing. Should be handle according to good industrial hygiene and safety practices.

Environmental precautions: Do not allow product to spread into the soil and to enter sewers/ surface or ground water.

Methods for cleaning up: Pick up mechanically. Store waste in suitable containers. Wash non-recoverable remainder with large amounts of water. Dispose of at a licensed waste collection point.

Further information: -

7. HANDLING AND STORAGE

Handling:
- Precautions: Avoid contact with skin and eyes. Keep away from food and drinks. Wash hands and any other zone exposed with soap and water before eating, drinking, smoking and before leaving work.

Storage:
Store the container tightly closed at temperature lower than 25°C, protected from light and humidity.

Recommended packaging materials: Original packaging.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: No specific measures are required provided the product is handled in accordance with the general rules of occupational hygiene and safety.

Exposure limit values: No data available.

Personal protective equipment:
- Respiratory protection: In case of good ventilation no personal respiratory protective equipment required. If dust occurs: anti-dust mask P1 type (EN 143)
- Hand protection: Protective rubber gloves. The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN 374. Breakthrough time: refer to the recommendations of the supplier.
- Eye protection: Safety glasses with side protections. Avoid wearing contact lenses.
- Body and skin protection: Wear a protective chemicalproof clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Aspect: Powder
Colour: Beige
Odour: Characteristic

Boiling point (°C): Not applicable
Melting point (°C): Not determined
Flash point (°C): Not determined
Auto-inflammation temperature (°C): Not determined
Partition coefficient (n-octanol/water): Not determined

10. STABILITY AND REACTIVITY

Stability: Stable at temperature lower than 25°C and under normal conditions of use. Avoid humidity.

Hazardous reactions:
- Materials to avoid: Strong oxidizing agents, strong acids and bases.

Hazardous decomposition products: During combustion or thermal decomposition (pyrolysis), it may release: toxic and irritating vapours (NOx, CO, CO₂) and various hydrocarbon fragments.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: No specific data available. According to our knowledge, no specific risk when handled in accordance with good occupational hygiene and safety practices.

- Lecithin:
LD50 (oral, rat): > 16000 mg/Kg: not toxic
Source: CIR report (IJT 20(S1): 21-45, 2001)
- Sclerotium gum:
  Short feeding studies with rats and dogs have not shown any signs of toxicity.
  Source: Scleroglucan: Fermentative Production, Downstream Processing and Applications.
  Shrikant A. Survase, Parag S. Saudagar, Ishwar B. Bajaj and Rekha S. Singhal
  Food Engineering and Technology Department, Institute of Chemical Technology, University of Mumbai, Matunga,
  Mumbai 400 019, India
  (dated 2006)

- Xanthan gum:
  LD50 (oral, rat): > 45,000 mg/Kg b.w.
  LD50 (oral, mouse): >1000 mg/Kg b.w.
  LD50 (oral, dog): > 20,000 mg/Kg b.w.
  Source: WHO report (following twenty-ninth meeting of the Joint FAO/WHO Expert Committee on Food Additives
  (Xanthan gum)

- Pullulan:
  LD50 (oral, mice) > 14 280 mg/Kg
  Reference: Toxicity test of Pullulan. Juntendo University, Japan

**Primary irritation:**

- Skin irritation:
  48-hour occlusive single patch test (SILIGEL™ tested pure): Non irritant
  Source: Study n°013PT20V16

- Eye irritation:
  HET-CAM (SILIGEL™ tested pure): Moderately irritant
  Source: Study n° B16 0625

**Chronic effects:**

<table>
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<th>Data</th>
<th>Method</th>
<th>Concentration</th>
<th>Result</th>
<th>Source</th>
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<tr>
<td>Mutagenicity</td>
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<td>KeratinoSens™</td>
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<td>Product diluted at 3%</td>
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<td>h-CLAT</td>
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<td>Sensitizing</td>
<td>Study n°DC17924/CL01</td>
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</table>

=> KeratinoSens™ and h-CLAT assays are discordant. Therefore, we are using the bibliographical skin sensitization
data we have on the different substances contained in SILIGEL™ (cf. Toxfile).

**Other data:**

- Phototoxicity: UV spectrum made on SILIGEL™, diluted at 0.20% in water; low UV absorption between 290-400 nm.
  Therefore, according to ANSM (ex AFSSAPS) recommendations, no phototoxic potential could be suspected.

- Lecithin: Lecithins family were extensively CIR reviewed. The original report on Lecithin and Hydrogenated Lecithin
  was published in 2001 with a conclusion of safe as used in rinse-off products and safe for use in leave-on products at
  concentrations of ≤15%. Lecithin and Hydrogenated Lecithin should not be used in cosmetic products in which N-
  nitroso compounds may be formed (Source: IJT 20(S1):21-45,2001).
  At the March 2015 meeting, the CIR Expert Panel voted to issue a final report that Lecithin and Hydrogenated Lecithin
  are safe in the present practices of use and concentration in cosmetics.
  Source: Safety Assessment of Lecithin and Other Phosphoglycerides as Used in Cosmetics, Tentative report for public
  comment, 134th Meeting, CIR Expert Panel, March 16-17, 2015.
12. ECOLOGICAL INFORMATION

Biodegradability:
- Lecithin:
  lecithins are Natural Complex Substances which are easily biodegradable (method: OECD 301D) - supplier's data

- Sclerotium gum: Easily biodegradable.
  98.2 % in 28 days (method: OECD 301 A)
  Source: Study made in March-April 2011

- Xanthan gum: Easily biodegradable.
  86.94% in eight days (method: OECD 301 A)
  Source: Study made in October 2010

- Pullulan: Easily biodegradable.
  94.5 % in 28 days (method: OECD 301 A)
  Source: Study made in June 2011

- SILIGEL™: meets the easy biodegradability criteria at a concentration value of 2.0 mg/L in the reaction medium. Therefore, SILIGEL™ is easily biodegradable.
  100.00% in 6 days (method: OECD 301 D).
  Source: Study made in May-June 2017

Bioaccumulation:
Partition coefficient n-octanol/water: not determined for SILIGEL™.

Ecotoxicity:
Effects on the aquatic environment

- Lecithin:
  Aquatic toxicity: no data available.

- Sclerotium gum:
  Aquatic toxicity:
  EC50 (Daphnia: Daphnia magna)/ 48 h: > 100 mg/L
  Method: OECD 202
  Source: Study made in January 2011

- Xanthan gum:
  Aquatic toxicity:
  EC50 (Daphnia: Daphnia magna)/ 48 h: > 100 mg/L
  Method: OECD 202
  Source: Study made in November 2010

- Pullulan:
  Pullulan is a natural molecule consisting of glucose (polysaccharide), produced by a yeast found commonly in the environment. Substance without significant ionic functionality is considered of low concern to the aquatic environment (NICNAS, 2007).
  Analysis made:
  EC50 (Daphnia: Daphnia magna)/ 48 h prob.: 117.5 mg/L
  Method: OECD 202
  Source: Study made in January 2011

- SILIGEL™:
  Daphnia sp. Acute Immobilisation Test:
  EC50 (Daphnia: Daphnia magna)/ 48 h: > 1 g/L
  Method: OECD 202
  Source: Study made in October-November 2016
- SILIGEL™:
Freshwater Alga and Cyanobacteria, Growth Inhibition Test (method: OECD 201):
SILIGEL™ has no toxicity to the algal growth rate (Pseudokirchnerilla subcapitata) at concentrations up to 100 mg/L. E<sub>50</sub> 72h >100 mg/L.
Source: Study made in January 2017

13. DISPOSAL CONSIDERATIONS

Appropriate disposal / Product:
Recommendation: Do not empty into drains or the aquatic environment. This material and its packaging must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC on waste and hazardous waste in their latest versions.

Contaminated packaging:
Recommendation: Empty and non-polluted packaging may be recycled.

Note: The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal.

14. TRANSPORT INFORMATION

Note: The above regulatory prescriptions are those valid on the date of publication of this document. Taking into account the possible evolution of transport regulations about hazardous materials and in case of the MSDS is dated from more than 1 year, it would be recommended to check these data with your commercial agency.

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<tr>
<td></td>
<td>Not regulated</td>
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</table>
15. REGULATORY INFORMATION

EU regulation:
Chemical Safety Assessment: chemical safety assessments of substances contained in this preparation have not been carried out yet.

Label elements according to CLP regulation n°1272/2008:
- Hazard pictograms: None
- Signal words: None
- Hazard statements: None
- Precautionary statements: None

International regulations:
PCPC: all the ingredients of this preparation are listed
European inventory CosIng: all the ingredients of this preparation are listed

Note: the regulatory information given above only mention the main regulations specifically applicable to the product described in this MSDS. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. We recommend you to refer to all international, national or local regulations or provisions.

16. OTHER INFORMATION

Restrictions on use: This product must not be used for other applications than those listed in §1.
These information are based on our current knowledge (at the updating date) and are supplied for proper and safe handling of the product. This document complete product's technical data sheet but does not replace it.
Data source used to prepare this document : bibliographical data, supplier's data toxicological and ecotoxicological studies.
Modifications compared with the previous version : sections n°12