Oli'Vîne™

VOLCANIC ENERGY
When our skin is tired or put under stress, it loses its vitality and its brightness. When cutaneous cells are under pressure, they use all their forces to face the situation.

As a result, the skin becomes more fragile and irritated and ends up missing essential elements: trace elements, minerals salts, vitamins and magnesium.

Natural and innovative ingredients, the MINERAL MATTERS range from Gattefossé are enriched today by a new reference:

**Oli’Vîne™**

Rich in magnesium, Oli’Vîne™ increases the cellular energy level and helps the skin cells to fight against stress via an optimal adaptive answer.

**SOURCING THE BEST OF THE MINERAL WORLD**

Stones are compounds rich in oligoelements, essential catalysts of the principal biochemical vital cells reactions.

Gattefossé has developed a unique technology to extract directly from stones essential oligoelements and make them bioavailable for our skin cells.

These ingredients with substantiated biological properties are found in today’s exceptional cosmetics for face and body.

**OLIVINE**

The Greek gave it the name of "golden stone" because of its gold-green brightness. The association of the yellow and green color makes olivine the stone of the solar plexus and the chakra of the heart.

The rarity of this stone equals only its beauty; olivine has a reputation for stimulating love.

A dominant character stone, olivine is known for its anti-fatigue properties and for stabilizing emotions.
Olivine (or Peridot) is a major mineral constituent of the earth’s mantle. It is moreover the first compound that crystallizes following volcanic eruptions.

Olivine can be found in diverse places around the globe such as volcanic sands and has even been identified on the Moon and the planet Mars.

Gattefossé has selected two origins: South Africa and USA.

Olivine is a magnesium and iron silicate. It is for its richness in magnesium that Gattefossé selected this stone.

**MAGNESIUM**

Magnesium is a major compound found both on the surface of the earth and in the oceans.

In the nature, we find it mainly under the silicate form: olivine \((\text{Mg}, \text{Fe})_2 [\text{SiO}_4]\). Magnesium is present in all tissues and in all living species of both the vegetable and animal world.

The large number of clinical indications of magnesium is only the reflection of the numerous biological processes in which it intervenes.

Magnesium plays an essential role in the cellular metabolism by participating in all the important mechanisms of consumption or production of energy. It is indeed necessary for the synthesis of ATP (adenosine triphosphate), the main cellular fuel.

It also intervenes in mitochondria, allowing the storage of energy for the cell by complexing with ATP to form Mg-ATP, the physiological active form of ATP.

![Mg-ATP](image)

The main biological activity of magnesium is its capacity to activate and regulate the cellular metabolism.

For all ages, a deficiency in magnesium is characterized by a low resistance to disease, fatigue and premature aging.
Oli’Vîne™ – ENERGY BOOSTER

A first series of studies, made on cultures of human keratinocytes and fibroblasts, demonstrate the metabolic action of Oli’Vîne™. For that purpose, we evaluated the effect of Oli’Vîne™ on cellular respiration.

Cellular respiration is the process leading to the synthesis of cellular energy: ATP.

This biochemical reaction needs:

- Carburant: this nutrient is commonly glucose, but also amino acids and fatty acids
- Comburant: it is molecular oxygen (O₂).

An oxygraphy test, made on human fibroblasts and keratinocytes, allowed us to demonstrate that Oli’Vîne™ stimulates the basal oxygen consumption of both cellular types, with a dose response effect.

An increase of the cells’ oxygen consumption rate indicates a greater basal cellular respiration, a sign of a regain in vital energy.
Another test has been conducted to estimate the effect of Oli’Vine™ on the energetic metabolism.

Result: Oli’Vine™ increases the cytosolic ATP level (energetic molecules available in cells cytosol), both on human fibroblasts and keratinocytes.

ATP is the main energy source of our cells. Increase of the ATP level generally suggests a greater cellular activity.

In this case, as the level of cellular proteins is the same between control and test cells, the observed effect is not due to an increase of the cell population.

Indeed, this increase of cytosolic ATP is due to an increase of the energy level of each cell treated with Oli’Vine™.

This stimulation of the cellular energy metabolism presents several interests for skin care. By increasing the level of intracellular energy, Oli’Vine™ refreshes the skin and restores its tonicity.
**Oli’Vîne™, ACTIVE DEFENSE**

In the skin, cellular stress is characterized by a metabolic imbalance. As a result, the skin loses its vitality and its brightness.

To evaluate the antistress effect of Oli’Vîne™, we recreated a chronic aggression in human fibroblasts.

Cell cultures were treated with FCCP (carbonylcyanide p-trifluoromethoxyphenyldrazone), a poison acting on mitochondria, blocking the mechanisms of ATP synthesis.

The effect of this induced stress leads to:

- A decrease of cell growth
- An increase in the production of the ROS (Reactive Oxygen Species)
- The acquisition of a phenotype of premature senescence (premature aging)
- An increase of the mitochondrial membrane potential.

**Effect on cellular proliferation**

A first analysis was made on the inhibitor effect of cell growth, induced by FCCP. Cells were treated during 12 days with FCCP to induce a chronic stress.

The chronic exposure to FCCP induces a significant reduction of the cell proliferation rate, (PDL: population doublings).

The cultures treated with Oli’Vîne™ and exposed to FCCP show a cell growth rate superior to that of the control [FCCP] indicating that Oli’Vîne™ is able to partially restore the inhibitor effects of FCCP on cell proliferation.
**Effect on intracellular oxidation**

A mitochondrial chronic stress leads to an increase of the degree of intracellular oxidation. 

In the control cells treated with FCCP, the basal oxidation degree is multiplied by 1.9, indicating a net increase of the production of ROS.

The treatment of cells with Oli'Vine™ (used at 0.025%) decreases by 16% the degree of intracellular oxidation. This result shows that Oli'Vine™ helps modulate production of the ROS induced by the FCCP.

**Effect on the cellular senescence**

The effect of a metabolic disorder on cells (due to FCCP), accelerates the aging process.

Premature senescent cells are then easily recognizable thanks to the β-Galactosidase lysosomal enzymatic activity.
The chronic exposure to FCCP multiplies by 2.6 the number of β-Gal (+) cells compared to the non exposed cultures. This is a sign of a premature senescence of cells.

The use of Oli’Vîne™ at 0.025% allows to decrease by 42% the number of senescent cells.

**Oli’Vîne™ thus allows to prevent the aging process during cellular stress.**

**Adaptive cellular solution**

When our cells are subjected to stress, several adaptation mechanisms start.

One of them corresponds to a modification of the mitochondrial membrane potential which is increased to fight the stress. This increase depends on the intensity of the stress.

The addition of FCCP leads to a strong increase of the mitochondrial membrane potential of the fibroblasts, sign of high stress.

On the other hand, the use of Oli’Vîne™, regulates the cells’ adaptive answer, a sign of a diminished stress.
CONCENTRATE OF VITAL ENERGY

All these studies showed that Oli’Vine™ is able to both increase the skin cell energy level and reduce the effect of stress.

Revitalized, the skin can better fight stress and fatigue to maintain its vitality and its brightness.

The magnesium complex of Oli’Vine™ will help tired or stressed skins to regain their natural balance.

It can wake-up the skin by boosting cellular respiration.

The skin optimizes its level of fundamental energy, restores its balance and regains its dynamism.

Oli’Vine™ is recommended for facial and body skin care such as:

- Anti-fatigue day cream
- Flash radiance skin care
- Anti-stress youth masks
- Energizing body lotion.

The mineral strength makes Oli’Vine™ an ideal active for men’s products and the elegance of the precious stone will enrich women’s skin care.

The recommended use level of Oli’Vine™ is from 0.5 to 3% in formulation.
**SPECIFICATIONS**

**Organoleptic characteristics:**
Aspect .................................................................................................................. Limpid liquid  
Color .................................................................................................................. yellow-green to colorless

**Physico-chemical characteristics:**
Dry extract ........................................................................................................... 10.0 to 15.0%  
Magnesium content ............................................................................................ 2.0 to 4.5 g/l  
Solubility at 20°C .................................................................................................. soluble in water

**Transport and storage conditions:**
Liquid preserved with 1% of Phenoxyethanol and 0.2% of Sodium Metabisulphite and under nitrogen atmosphere. Prevent from exposure to light and air. Store at room temperature. We suggest to re-check the product after a 2 years storage under recommended conditions.

**Packaging:**
Industrial standard pack .............................................................................. 1 and 5 kg plastic can  
Samples ................................................................................................................ available

**Regulatory:**
INCI Name ........................................................................................................ Water (and) Olivine Extract  
CAS N° .............................................................................................................. 7732-18-5/1317-71-1 (or 1343-88-0)  
EINECS .............................................................................................................. 231-791-2/215-281-7 (or 215-681-1)  
Approved for cosmetic use ........................................................................... Australia, Canada, China, EU, Japan, USA
# Formula

## Energizing Melting Cream JB 2605/A

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<td>III SODIUM HYDROXIDE (10% SOL.)</td>
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<td>IV CYCLOPENTASILOXANE (AND) DIMETHICONOL</td>
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<td>V WATER (AND) OLIVINE EXTRACT</td>
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Sprinkle Acrylate/C10-30 Alkyl Acrylate Crosspolymer over water of phase II, leave to hydrate for 10 minutes. Under mixing, disperse Xanthan Gum into water + Acrylate/C10-30 Alkyl Acrylate Crosspolymer of phase II for about 5 minutes. Heat I and II to 75°C. Under rotor stator mixing (3000 rpm), add I to II, mix for about 5 minutes. Add III, mix with rotor stator (3000 rpm) for about 3 minutes. Cool under mixing and about 45°C, add IV. At about 35°C, add V and VI. Complete cooling.

## Anti-Stress Emulsion MM 8792/B

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<td>III SODIUM HYDROXIDE (10% SOL.)</td>
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<td>IV WATER (AND) OLIVINE EXTRACT</td>
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Sprinkle Acrylate/C10-30 Alkyl Acrylate Crosspolymer over water + glycerin. Leave to stand and disperse Xanthan Gum (10 minutes). Under stirring, add I heated to 75°C to II heated to 75°C. Maintain under rapid mixing (rotor stator 2500 rpm) for 5-10 minutes. Add III and cool under normal stirring. At about 35°C add the components of IV. Complete cooling.

This information is presented in good faith, and we believe it is correct, but no warranty as to accuracy of results, or fitness for a particular use is given, nor is freedom from patent infringement to be inferred. It is offered solely for your consideration, investigation and verification.
GATTEFOSSE is an independent, multinational company headquartered in France which creates, manufactures and distributes specialty products used as ingredients by the cosmetic and pharmaceutical industries. Present in almost 50 countries worldwide, GATTEFOSSE enjoys a strong know-how and position in lipochemistry, biology and extraction from natural sources.

GATTEFOSSE offers the cosmetic industry a variety of high performance products classified as:

- **BASES & ADDITIVES**: emulsifiers, coemulsifiers, emollients, dispersers, solubilizers, thickeners…
- **TRADITIONAL PLANT EXTRACTS**
- **SUBSTANTIATED ACTIVE INGREDIENTS** from vegetable, mineral and marine origins.