

USP MAGNESIUM SULFATE, ANHYDROUS

Magnesium sulfate is an inorganic salt containing magnesium, sulfur and oxygen, with the chemical formula $MgSO_4$. Uniquely, this product exhibits heat generating properties and is highly soluble in water. The heat generating performance and water absorbency of $MgSO_4$ products is due to an exothermic reaction mechanism between $MgSO_4$ and water. The degree of sensation felt in formulation is dependent on the concentration of the $MgSO_4$ used and the desired effects sought by the formulator.

This product appears as an irregular shaped, white powder with an average particle size of 10.5 microns. Also, this is a USP grade material. This product can be used as a heat generating agent in a variety of anhydrous systems such as scrubs, gels, and lotions. Systems must be anhydrous since the chemical reaction is immediately initiated when the product is introduced to water.



Equation 1. The chemical reaction of magnesium sulfate and water



Figure 1. An image of USP Magnesium Sulfate, Anhydrous

Exfoliating Warming Mask

KCL-020-BR

Part 1

- Tegosoft® CT - Evonik: *Caprylic/Capric Triglyceride* 18.00%
- KF-6017 - Shin-Etsu: *PEG-10 Dimethicone* 12.00%
- SALACOS® 334 - Ikeda/Kobo Products: *Caprylic/Capric/Myristic/Stearic Triglyceride* 8.00%
- SunBoost ATB™ - Kobo Products: *Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol* 8.00%
- BLACK NF-11S2 - Kobo Products: *Iron Oxides (CI 77499) (And) Triethoxycaprylylsilane* 2.00%
- PM WAX 82 - Kobo Products: *Polyethylene (And) Microcrystalline Wax* 1.00%

Part 2

- BTS-CO1 - Kobo Products: *Talc (And) Isopropyl Titanium Triisostearate* 5.00%
- GMS-I2 - Kobo Products: *Mica (And) Isopropyl Titanium Triisostearate* 4.00%
- MSS-500/3H - Kobo Products: *Silica* 2.00%

Part 3

- **USP MAGNESIUM SULFATE, ANHYDROUS** - Kobo Products: *Magnesium Sulfate* 30.00%
- Geropon® T-77 - Solvay: *Sodium Methyl Oleoyl Taurate* 10.00%



Manufacturing Procedure

1. Heat Part 1 to 85°C and mix until complete dispersion of the pigment.
2. Add Part 2 and mix until it becomes homogeneous.
3. Cool to 60°C and add Part 3 slowly while mixing.
4. Pour into components while it is still hot.

Description

This warming mask features USP MAGNESIUM SULFATE, ANHYDROUS, an inorganic salt that exhibits heat-generating properties when water is added, due to an exothermic reaction mechanism. SALACOS® 334, a replacement for Shea Butter, acts as a moisturizing agent. BLACK NF-11S2 gives an intense black color. PM WAX 82 is a combination of waxes that helps to increase formula viscosity. BTS-CO1 and GMS-I2 act as fillers helping with creamy feel. MSS-500/3H, a silica microsphere, absorbs the excess oil, forming a gel and increasing formula viscosity. SunBoost ATB™ is a proprietary ratio of antioxidant, anti-irritant and anti-inflammatory agents.

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USP MAGNESIUM SULFATE, ANHYDROUS

Thermal Facial Cleanser with 25% USP MAGNESIUM SULFATE, ANHYDROUS

KCL-009C

Part 1

● Lipo Polyglycol® 400 - Vantage: PEG-8	61.65%
● Lipocol® S - Vantage: Stearyl Alcohol	3.00%
● Lipocol® C - Vantage: Cetyl Alcohol	2.00%
● Hostapon® CT Paste - Clariant: Sodium Methyl Cocoyl Taurate	1.50%
● Lipocol® L-23 - Vantage: Laureth-23	1.00%

Part 2

● USP MAGNESIUM SULFATE, ANHYDROUS - Tomita/Kobo Products: Magnesium Sulfate	25.00%
● Unilube 75DE-2620R - NOF Corporation: PEG/PPG-240/60 Copolymer	5.00%
● L-HPC - Shin Etsu: Hydroxypropylcellulose	0.40%
● Propyl Paraben NF - International Sourcing: Propylparaben	0.20%
● Methyl Paraben NF - International Sourcing: Methylparaben	0.10%
● SW30B1A - Kobo Products: Synthetic Wax (And) Blue 1 Lake (And) Isopropyl Titanium Triisostearate	0.15%

Manufacturing Procedure

1. Combine Part 1 and heat to 60°C while mixing.
2. Cool, then add Part 2 while mixing.
3. Add Part 3 while mixing.

Description

This is an anhydrous thermal face cleanser that warms upon contact with water due to the inclusion of 25% USP MAGNESIUM SULFATE, ANHYDROUS. SW30B1A gives a light blue color to the formula.