Table of Active Ingredients for Skincare Formulations

Column Headers:

- **No.**
- **Properties**
- **Active Ingredient**
- **Recommended Amount**
- **Water/Oil Phase**
- **Ingredients to Avoid Mixing With**
- **Does it Affect Viscosity?**
- **Better When Used With**
- **Precautions**
- **Supplier/Data Sheet**

---

1. Hydrating

1. **Active Ingredient: Hyaluronic Acid**
    - **Recommended Amount**: 0.1-2%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - High concentrations of AHA and BHA
    - **Does it Affect Viscosity?**: Yes
    - **Better When Used With**:
        - Glycerin & Propylene Glycol
        - Vitamin B5 (Panthenol)
        - Ceramides
    - **Precautions**:
        - pH 5-7
2. **Active Ingredient: Aloe Vera Extract**
    - **Recommended Amount**: 0.5-10%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - High-concentration preservatives (Formaldehyde-releasing agents)
        - Ingredients with very low pH (high acidity)
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:

        - Allantoin
        - Panthenol (Vitamin B5)
        - Hyaluronic Acid
    - **Precautions**:
        - pH 4.5-6.5

3. **Active Ingredient: Polyglutamic Acid (PGA)**
    - **Recommended Amount**: 0.1%-2%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - High-concentration alcohol
        - Strong acids like high-concentration Glycolic Acid
    - **Does it Affect Viscosity?**: Yes
    - **Better When Used With**:
        - Hyaluronic Acid
        - Ceramides
        - Vitamin B5 (Panthenol)
    - **Precautions**:
        - pH 5-7

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2. Exfoliating

1. **Active Ingredient: Glycolic Acid (AHA)**
    - **Recommended Amount**: 1%-10%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Vitamin C (Ascorbic Acid)
        - Retinol and Retinoids
        - Benzoyl Peroxide
    - **Does it Affect Viscosity?**: Slightly
    - **Better When Used With**:
        - Ceramides
        - Aloe Vera
        - Hyaluronic Acid
    - **Precautions**:
        - pH 3.5-4.5
        - Test for allergic reactions

- **Supplier/Data Sheet**: Example of AHA

2. **Active Ingredient**: **Salicylic Acid (BHA)**
    - **Recommended Amount**: 0.5%-2%
    - **Phase**: Oil
    - **Ingredients to Avoid Mixing With**:
        - AHAs
        - Vitamin C (Ascorbic Acid)
        - Retinol and Retinoids
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Niacinamide (reduces excess oil)
        - Zinc PCA (controls oil production, reduces pore clogging)
        - Tea Tree Oil (reduces acne and has antibacterial properties)
    - **Precautions**:
        - pH 3.0-4.0
        - Test for allergic reactions
    - **Supplier/Data Sheet**: Example of BHA
3. **Active Ingredient**: **Lactic Acid (AHA)**
    - **Recommended Amount**: 5%-10%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Vitamin C (Ascorbic Acid)
        - Retinol and Retinoids
        - Benzoyl Peroxide
    - **Does it Affect Viscosity?**: Slightly
    - **Better When Used With**:
        - Ceramides
        - Aloe Vera
        - Hyaluronic Acid
    - **Precautions**:
        - pH 3.5-4.0
        - Test for allergic reactions

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3. Anti-Aging

1. **Active Ingredient**: **Retinol (Vitamin A derivative)**

- **Note**: Retinol and Retinaldehyde (Not Tretinoin (Retinoic Acid) or Isotretinoin)
- **Recommended Amount**: 0.01%-0.3%
- **Phase**: Oil
- **Ingredients to Avoid Mixing With**:
  - AHAs
  - Vitamin C (Ascorbic Acid)
  - Retinol and Retinoids
- **Does it Affect Viscosity?**: No
- **Better When Used With**:
  - Hyaluronic Acid
  - Niacinamide
  - Ceramides
- **Precautions**:
  - pH 4.5-6.0

2. **Active Ingredient**: **Palmitoyl Pentapeptide-4 (Peptides)**
   - **Recommended Amount**: 0.1%-7% (Depends on supplier)
   - **Phase**: Water
   - **Ingredients to Avoid Mixing With**:
     - AHA and BHA
     - Vitamin C (Ascorbic Acid)
   - **Does it Affect Viscosity?**: No
   - **Better When Used With**:
     - Hyaluronic Acid
     - Niacinamide
     - Ceramides
   - **Precautions**:
     - pH 3.5-6.5
3. **Active Ingredient**: **Vitamin C (Ascorbic Acid)**
   - **Recommended Amount**: 5%-20%
   - **Note**: Always add Disodium EDTA 0.2% in water
   - **Phase**: Water
   - **Ingredients to Avoid Mixing With**:
     - Niacinamide (Vitamin B3)
     - Copper Peptides

        - Retinoids
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Vitamin E (Tocopherol)
        - Ferulic Acid
        - Hyaluronic Acid
    - **Precautions**:
        - pH 3.5-4.0

---

4. Brightening / Whitening

1. **Active Ingredient**: **Niacinamide (Vitamin B3)**
    - **Recommended Amount**: 1%-10%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Ascorbic Acid (Vitamin C)
        - Copper Peptides
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Hyaluronic Acid
        - Ceramides
        - Zinc PCA
    - **Precautions**:
        - pH 4.0-7.0
2. **Active Ingredient**: **Alpha Arbutin**
    - **Recommended Amount**: 0.2%-2%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Hydroquinone
        - Ascorbic Acid (Vitamin C)
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Niacinamide (Vitamin B3)
        - Hyaluronic Acid

        - Peptides
    - **Precautions**:
        - pH 3.5-6.5
        - Do not use in formulas with pH above 8
3. **Active Ingredient**: **Licorice Root Extract**
    - **Recommended Amount**: 1%-5%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Vitamin C (Ascorbic Acid)
        - Retinoids
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Niacinamide (Vitamin B3)
        - Hyaluronic Acid
        - Alpha Arbutin
    - **Precautions**:
        - pH 3.5-6.5

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5. Soothing/Calming

1. **Active Ingredient**: **Centella Asiatica (Cica)**
    - **Recommended Amount**: 1%-10%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - AHA and BHA
        - Retinoids
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Hyaluronic Acid
        - Niacinamide (Vitamin B3)
        - Peptides
        - Ceramides
    - **Precautions**:
        - pH 5-7
2. **Active Ingredient**: **Chamomile Extract**
    - **Recommended Amount**: 1%-5%

- **Phase**: Water
- **Ingredients to Avoid Mixing With**:
  - AHA and BHA
  - Hydroquinone
- **Does it Affect Viscosity?**: No
- **Better When Used With**:
  - Aloe Vera Extract
  - Hyaluronic Acid
  - Centella Asiatica
- **Precautions**:
  - pH 6-7

3. **Active Ingredient**: **Panthenol (Provitamin B5)**
   - **Recommended Amount**: 1%-3% (Over 5% may feel sticky)
   - **Phase**: Water
   - **Ingredients to Avoid Mixing With**:
     - AHA and BHA
     - Vitamin C (Ascorbic Acid)
   - **Does it Affect Viscosity?**: No
   - **Better When Used With**:
     - Hyaluronic Acid
     - Ceramides
     - Niacinamide
   - **Precautions**:
     - pH 3.5-7.0

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6. Anti-Acne

1. **Active Ingredient**: **Tea Tree Oil**
   - **Recommended Amount**: 0.5%-5%
   - **Phase**: Oil
   - **Ingredients to Avoid Mixing With**:
     - AHA and BHA
     - Retinoids
   - **Does it Affect Viscosity?**: No
   - **Better When Used With**:
     - Salicylic Acid

        - Aloe Vera
        - Niacinamide
    - **Precautions**:
        - pH 4.0-6.5

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7. Pore-Minimizing

1. **Active Ingredient: Witch Hazel Extract**
    - **Recommended Amount**: 0.5%-5%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Alpha Hydroxy Acids (AHAs)
        - Retinoids
        - Alcohol
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Aloe Vera Extract
        - Niacinamide
        - Salicylic Acid
    - **Precautions**:
        - pH 5.5-7.5
2. **Active Ingredient: Green Tea Extract**
    - **Recommended Amount**: 1%-5%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**: (None specified)
    - **Does it Affect Viscosity?**: No
    - **Better When Used With**:
        - Niacinamide
        - Hyaluronic Acid
        - Panthenol (Provitamin B5)
    - **Precautions**:
        - pH 4.0-6.5

---

8. Barrier Repair

1. **Active Ingredient: Ceramides**
    - **Recommended Amount**: 0.01%-0.2%

- **Phase**: Oil
- **Ingredients to Avoid Mixing With**:
  - Strong acids (e.g., AHA, Retinol)
  - Alcohols (especially volatile types)
- **Does it Affect Viscosity?**: Slightly
- **Better When Used With**:
  - Fatty acids like Linoleic Acid

2. **Active Ingredient**: **Squalane**
   - **Recommended Amount**: 1%-15%
   - **Phase**: Oil
   - **Ingredients to Avoid Mixing With**:
     - Strong acids (e.g., AHA, Retinol)
     - Alcohols (especially volatile types)
   - **Does it Affect Viscosity?**: Slightly
   - **Better When Used With**:
     - Ceramides
     - Peptides
3. **Active Ingredient**: **Linoleic Acid**
   - **Recommended Amount**: 1%-10%
   - **Phase**: Oil
   - **Ingredients to Avoid Mixing With**:
     - Strong acids
     - Alkaline ingredients
   - **Does it Affect Viscosity?**: No
   - **Better When Used With**:
     - Retinol or Retinoids
     - Ceramides

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9. Anti-Pollution

1. **Active Ingredient**: **Green Tea Extract**
   - **Note**: Refer to Pore-Minimizing section
2. **Active Ingredient**: **Vitamin E (Tocopherol)**
   - **Recommended Amount**: 0.05%-0.5%
   - **Phase**: Oil
   - **Ingredients to Avoid Mixing With**:

        - Peroxides
        - Strong acids
    - **Does it Affect Viscosity?**: No

3. **Active Ingredient**: **Moringa Seed Extract**
    - **Recommended Amount**: 1%-5%
    - **Phase**: Water
    - **Ingredients to Avoid Mixing With**:
        - Ingredients with high pH
    - **Does it Affect Viscosity?**: No

Note: Some entries like "Benzoyl Peroxide" under the "Anti-Acne" category were marked as "Not to be included yet" and have been omitted.

PH Ingredient Data

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1. Triethanolamine (TEA)

- **INCI Name**: Triethanolamine (TEA)
- **Trade Name**: DOW Triethanolamine
- **CAS Number**: *Not provided*
- **Data Sheet**: Technical Data Sheet
- **Recommended Dosage**: *Not provided*
- **pH**: Alkaline
- **Soluble In**: Water
- **State**: *Not specified*
- **Other Solubility**:
  - Acetone
  - Carbon Tetrachloride
  - Methanol
- **Molecular Weight (MW)**: 149.19
- **Other**: *No additional information*

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2. Citric Acid 50% Solution

- **INCI Name**: Citric Acid 50% Solution
- **Trade Name**: *Not provided*
- **CAS Number**: *Not provided*
- **Data Sheets**:
  - Technical Data Sheet 1
  - Technical Data Sheet 2
- **Recommended Dosage**: *Not provided*
- **pH**: Acidic (Approximately 2.2)
- **Soluble In**: Water
- **State**: Liquid
- **Other Solubility**: *Not specified*
- **Molecular Weight (MW)**: *Not provided*
- **Other**: *No additional information*

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3. Lactic Acid

- **INCI Name**: Lactic Acid
- **Trade Name**: *Not provided*
- **CAS Number**: 50-21-5
- **Data Sheet**: *Not provided*
- **Recommended Dosage**: *Not provided*
- **pH**: Acidic
- **Soluble In**: Water
- **State**: *Not specified*
- **Other Solubility**: *Not specified*
- **Molecular Weight (MW)**: *Not provided*
- **Other**: *No additional information*

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4. Sodium Hydroxide

- **INCI Name**: Sodium Hydroxide
- **Trade Name**: *Not provided*
- **CAS Number**: *Not provided*
- **Data Sheet**: *Not provided*
- **Recommended Dosage**: *Not provided*
- **pH**: Alkaline
- **Soluble In**: *Not specified*
- **State**: *Not specified*
- **Other Solubility**: *Not specified*
- **Molecular Weight (MW)**: *Not provided*
- **Other**: *No additional information*

Note: This table provides essential information about various cosmetic ingredients, including their chemical properties, solubility, and usage guidelines. The data is formatted for easy copying into Microsoft Word and is structured to support Retrieval-Augmented Generation (RAG) processes.

Thickener Ingredient Data

Column Headers Explanation:

- **No.**: Serial number for reference.
- **INCI Name**: International Nomenclature of Cosmetic Ingredients; the standardized name for cosmetic ingredients.
- **Trade Name**: Commercial name under which the ingredient is sold.
- **Data Sheet**: Link to the technical or safety data sheet.
- **Viscosity (1%)**: Viscosity measurement at 1% concentration, usually in centipoise (cP).
- **Melting Point**: The temperature at which the ingredient transitions from solid to liquid.
- **Recommended %**: Suggested usage levels in formulations.
- **If Added Excessively**: Potential issues or effects if the ingredient is used above recommended levels.
- **Phase**: Whether the ingredient is added to the water phase, oil phase, or both.
- **Stable pH**: The pH range within which the ingredient remains stable.
- **Charge**: The ionic charge of the ingredient (negative, positive, non-ionic, amphoteric).
- **Required Ingredients**: Other ingredients needed to activate or enhance the function.
- **Incompatible Ingredients**: Ingredients that should not be used together due to stability or efficacy issues.
- **Electrolyte Tolerance**: Whether the ingredient is tolerant to electrolytes (salts).
- **Result Appearance**: The visual appearance of the formulation when using this ingredient.
- **Notes**: Additional relevant information.

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1. Xanthan Gum

- **INCI Name**: Xanthan Gum
- **Trade Name**: Xanthan Gum
- **Data Sheet**: Technical Data Sheet
- **Viscosity (1%)**: 1,200–1,800 cP
- **Melting Point**: Not specified
- **Recommended %**: 0.1%–1.0%
- **If Added Excessively**: Stickiness, excessive thickness, greasy feel, clumping, incompatibility with other ingredients
- **Phase**: Water phase
- **Stable pH**: 6.0–8.0 (Below pH 3.0, it will become liquid)
- **Charge**: Negative (anionic)
- **Required Ingredients**: Glycerin or Propylene Glycol (for better dispersion)
- **Incompatible Ingredients**: Cationic ingredients
- **Electrolyte Tolerance**: Not tolerant

- **Result Appearance**: Clear gel with short rheology (stringy texture)
- **Notes**: None specified

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2. Carbomer

- **INCI Name**: Carbomer
- **Trade Name**: Carbopol® Ultrez 30 Polymer
- **Data Sheet**: [Carbopol® Ultrez 30 Polymer - PDS](Carbopol® Ultrez 30 polymer - PDS)
- **Viscosity (1%)**: 90,000–130,000 cP
- **Melting Point**: Not specified
- **Recommended %**: 0.1%–0.5%
- **If Added Excessively**: Excessive thickness, pH sensitivity, poor skin feel
- **Phase**: Water phase
- **Stable pH**: 4.0–12.0 (Adjust to pH 4.0–4.5 before adding other ingredients)
- **Charge**: Negative (anionic)
- **Required Ingredients**: Neutralizing agent (e.g., Triethanolamine)
- **Incompatible Ingredients**: Cationic ingredients
- **Electrolyte Tolerance**: Tolerant
- **Result Appearance**: Clear gel or rich creamy texture
- **Notes**: None specified

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3. Ammonium Acryloyldimethyltaurate/VP Copolymer

- **INCI Name**: Ammonium Acryloyldimethyltaurate/VP Copolymer
- **Trade Name**: Aristoflex AVC
- **Data Sheet**: Technical Data Sheet
- **Viscosity (1%)**: 48,000–65,000 cP
- **Melting Point**: Not specified
- **Recommended %**: 0.1%–2.0%
- **If Added Excessively**: Excessive thickness, poor sensory feel
- **Phase**: Water phase
- **Stable pH**: 3.0–8.0 (Above pH 9, it releases ammonia)
- **Charge**: Amphoteric
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified

- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Clear to translucent gel with silky feel
- **Notes**: Acts as an emulsifier; compatible with ethanol concentrations above 50%

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4. Dibutyl Lauroyl Glutamide

- **INCI Name**: Dibutyl Lauroyl Glutamide
- **Trade Name**: DJ-LG
- **Data Sheet**: Technical Data Sheet
- **Viscosity (1%)**: 10,000 cP
- **Melting Point**: >100 °C
- **Recommended %**: 0.3%–1.0% (in liquid form)
- **If Added Excessively**: Becomes too hard
- **Phase**: Oil phase (except silicone oils)
- **Stable pH**: 2.0–12.0
- **Charge**: Non-ionic
- **Required Ingredients**:
  - Octyldodecanol
  - Ethylhexyl Methoxycinnamate (for clarity and to lower melting point)
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Result Appearance**: Hard transparent oil gel
- **Notes**: None specified

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5. PEG-240/HDI Copolymer Bis-Decyltetradeceth Ether, Butylene Glycol, Water

- **INCI Name**: PEG-240/HDI Copolymer Bis-Decyltetradeceth Ether, Butylene Glycol, Water
- **Trade Name**: ADEKA NOL GT-730
- **Data Sheet**: Technical Data Sheet
- **Viscosity (1%)**: 10,000 cP
- **Melting Point**: Not specified
- **Recommended %**: 0.5%–2.0%
- **If Added Excessively**: Becomes too thick
- **Phase**: Water phase
- **Stable pH**: 4.0–10.0

- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Result Appearance**: Clear, transparent gel
- **Notes**: None specified

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6. Caprylic/Capric Triglyceride, Sodium Acrylates Copolymer

- **INCI Name**: Caprylic/Capric Triglyceride, Sodium Acrylates Copolymer
- **Trade Name**: Luvigel® EM
- **Data Sheet**: *Not provided*
- **Viscosity (1%)**: 10,000 cP
- **Melting Point**: 25 °C
- **Recommended %**: 0.5%–2.0%
- **If Added Excessively**: Becomes too thick
- **Phase**: Water phase
- **Stable pH**: 4.0–8.0
- **Charge**: Negative (anionic)
- **Required Ingredients**:
  - Ceteareth-6 (any one type)
  - Stearyl Alcohol
  - Sorbitan Oleate
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Not tolerant
- **Result Appearance**: White-milky emulsion
- **Notes**: None specified

Note: This table provides detailed information about various thickening agents used in cosmetic formulations, including their properties, usage guidelines, compatibility, and effects on the final product appearance. The data is formatted for easy copying into Microsoft Word and is structured to support Retrieval-Augmented Generation (RAG) processes.

Additional Information:

- **Viscosity Measurements**: Viscosity values help formulators understand the thickening power of each ingredient at a given concentration.
- **Phase**: Indicates in which phase of the formulation the ingredient should be added (water or oil phase).
- **Stable pH**: Operating within the stable pH range ensures the ingredient maintains its functionality and stability.

- **Charge**: Knowing the ionic charge assists in predicting compatibility with other ingredients.
- **Electrolyte Tolerance**: Ingredients with high electrolyte tolerance can be used in formulations containing salts or other electrolytes without losing efficacy.

Emulsifiers Ingredient Data

Column Headers Explanation:

- **No.**: Serial number for reference.
- **INCI Name**: International Nomenclature of Cosmetic Ingredients; standardized names for cosmetic ingredients.
- **Trade Name**: Commercial name under which the ingredient is sold.
- **Data Sheet**: Link to the technical or safety data sheet.
- **CAS No.**: Chemical Abstracts Service registry number; unique numerical identifiers for chemical substances.
- **Increase Viscosity?**: Indicates whether the ingredient increases the viscosity of the formulation.
- **Melting Point (°C)**: The temperature at which the ingredient transitions from solid to liquid.
- **Recommended %**: Suggested usage levels in formulations.
- **Phase**: The phase (oil or water) in which the ingredient is typically used.
- **Stable pH**: The pH range within which the ingredient remains stable.
- **Charge**: The ionic charge of the ingredient (non-ionic, anionic, cationic).
- **Required Ingredients**: Other ingredients needed to activate or enhance the function.
- **Incompatible Ingredients**: Ingredients that should not be used together due to stability or efficacy issues.
- **Electrolyte Tolerance**: Whether the ingredient is tolerant to electrolytes (salts).
- **Result Appearance**: The visual appearance of the formulation when using this ingredient.
- **HLB Value**: Hydrophilic-Lipophilic Balance value; indicates the balance between the water-loving and oil-loving portions of the molecule.
- **Oil Holding Capacity**: The amount of oil the emulsifier can stabilize.
- **Notes**: Additional relevant information.

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1. Cetearyl Alcohol

- **INCI Name**: Cetearyl Alcohol
- **Trade Name**: Cetearyl Alcohol
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: 48–53
- **Recommended %**: 2–10%
- **Phase**: Oil phase
- **Stable pH**: 4–10
- **Charge**: Non-ionic

- **Required Ingredients**: Should not be used alone
- **Incompatible Ingredients**: Strong oxidizing agents and acids
- **Electrolyte Tolerance**: Tolerant
- **Result Appearance**: Creamy, smooth, rich, opaque
- **HLB Value**: 15
- **Oil Holding Capacity**: 25.0
- **Notes**: Additional data sheets available [here](Cetearyl Alcohol - 4383901 All docs.pdf)

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2. Emulsifying Wax (Vegetable Based)

- **INCI Name**: Cetearyl Alcohol, Polysorbate 60, PEG-150 Stearate, Steareth-20
- **Trade Name**: Emulsifying Wax (Vegetable Based)
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: 48–52
- **Recommended %**: 1–5%
- **Phase**: Oil phase
- **Stable pH**: 5.5–7.0
- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Result Appearance**: Creamy, smooth, rich, opaque
- **HLB Value**: *Not provided*
- **Oil Holding Capacity**: 30.0
- **Notes**: [Material Safety Data Sheet (MSDS)](Link not provided)

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3. Olivem® VS Feel

- **INCI Name**: Cetearyl Alcohol, Cetyl Palmitate, Sorbitan Palmitate, Sorbitan Oleate
- **Trade Name**: OLIVEM® VS FEEL
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes

- **Melting Point (°C)**: 70
- **Recommended %**: 0.5–5%
- **Phase**: Oil phase
- **Stable pH**: 4.0–7.0
- **Charge**: Non-ionic
- **Required Ingredients**: Should not be used alone
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Creamy, smooth, rich, opaque
- **HLB Value**: 10
- **Oil Holding Capacity**: 20.0
- **Notes**: Additional data sheets available here; [MSDS](Link not provided)

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4. Polysorbate 20

- **INCI Name**: Polysorbate 20
- **Trade Name**: Hostacerin L 20
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: No
- **Melting Point (°C)**: Not specified
- **Recommended %**: 0.5–5%
- **Phase**: Oil phase (emulsifier); Water phase (solubilizer)
- **Stable pH**: 4.0–10.0
- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Clear to milky
- **HLB Value**: 16.7
- **Oil Holding Capacity**: 10.0
- **Notes**: [MSDS](Link not provided)

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5. Emulgade® 165

- **INCI Name**: Glyceryl Stearate, PEG-100 Stearate
- **Trade Name**: Emulgade® 165
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: 50–60
- **Recommended %**: 1.0–5.0%
- **Phase**: Oil phase (preferred), can also be added to water or humectant phase
- **Stable pH**: 4.0–7.0
- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Creamy, smooth, rich, opaque
- **HLB Value**: 10–12
- **Oil Holding Capacity**: 25.0
- **Notes**: [MSDS](Link not provided)

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6. Evicare® GSC

- **INCI Name**: Glyceryl Stearate Citrate
- **Trade Name**: Evicare® GSC
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: 59–63
- **Recommended %**: 1.5–3.0%
- **Phase**: Oil phase
- **Stable pH**: *Not specified*
- **Charge**: Non-ionic
- **Required Ingredients**: Should not be used alone
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant

- **Result Appearance**: Light, rich, velvety cream
- **HLB Value**: 5–6
- **Oil Holding Capacity**: 20.0
- **Notes**: Additional data sheets available here and here; [SDS](Link not provided)

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7. MONTANOV™ 82

- **INCI Name**: Cetearyl Alcohol, Coco-Glucoside
- **Trade Name**: MONTANOV™ 82
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: 55–60
- **Recommended %**: 1–3%
- **Phase**: Oil phase
- **Stable pH**: 3–10
- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Creamy texture
- **HLB Value**: 10–12
- **Oil Holding Capacity**: 30.0
- **Notes**: Additional data sheets available here; [SDS](Link not provided)

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8. Repoly 915

- **INCI Name**: Polyquaternium-37, Mineral Oil, C11-15 Pareth
- **Trade Name**: Repoly 915
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: No
- **Melting Point (°C)**: Not specified
- **Recommended %**: 0.5–5.0%
- **Phase**: Oil phase

- **Stable pH**: 4.5–6.0
- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Creamy texture
- **HLB Value**: 5–6
- **Oil Holding Capacity**: 20.0
- **Notes**: Additional data sheets available here

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9. PLANTASENS® EMULSIFIER CCT

- **INCI Name**: Caprylic/Capric Triglyceride, Water, Glycerin, Lauryl Glucoside, Glyceryl Stearate, Sodium Lauroyl Lactylate, Cetearyl Alcohol, Sodium Stearoyl Lactylate
- **Trade Name**: PLANTASENS® EMULSIFIER CCT
- **Data Sheet**: Technical Data Sheet
- **CAS No.**: *Not provided*
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: Not specified
- **Recommended %**: 1–5%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Required Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Moderately tolerant
- **Result Appearance**: Light, pasty
- **HLB Value**: 10–12
- **Oil Holding Capacity**: 25.0
- **Notes**: Suitable for cold process formulations; [MSDS](Link not provided)

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10. Olivem® 1000

- **INCI Name**: Cetearyl Olivate, Sorbitan Olivate
- **Trade Name**: Olivem® 1000
- **Data Sheet**: Technical Data Sheet

- **CAS No.**: 85116-80-9
- **Increase Viscosity?**: Yes
- **Melting Point (°C)**: 70
- **Recommended %**: 3–5%
- **Phase**: Oil phase
- **Stable pH**: 4.5–8.0
- **Charge**: Non-ionic
- **Required Ingredients**: Xanthan gum, Carbomer (not necessary but can be used)
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Result Appearance**: Creamy texture
- **HLB Value**: 12
- **Oil Holding Capacity**: 25.0

Emollient Ingredients data

Column Headers Explanation:

- **No.**: Serial number for reference.
- **INCI Name**: International Nomenclature of Cosmetic Ingredients; standardized names for cosmetic ingredients.
- **Trade Name**: Commercial name under which the ingredient is sold.
- **CAS No.**: Chemical Abstracts Service registry number; unique numerical identifiers for chemical substances.
- **Data Sheet**: Link to the technical or safety data sheet.
- **Additional Functions**: Other beneficial properties or uses of the ingredient besides being an emollient.
- **Melting Point (°C)**: The temperature at which the ingredient transitions from solid to liquid.
- **Recommended %**: Suggested usage levels in formulations.
- **Phase**: The phase (oil or water) in which the ingredient is typically used.
- **Stable pH**: The pH range within which the ingredient remains stable.
- **Charge**: The ionic charge of the ingredient (non-ionic, anionic, cationic).
- **Optional Ingredients**: Other ingredients that can be used in combination to enhance performance.
- **Incompatible Ingredients**: Ingredients that should not be used together due to stability or efficacy issues.
- **Electrolyte Tolerance**: Whether the ingredient is tolerant to electrolytes (salts).
- **Texture**: The feel of the ingredient when applied to the skin.
- **Lightness**: A scale from 1 (heaviest) to 5 (lightest) indicating how heavy or light the ingredient feels.
- **Oil Appearance**: Description of the ingredient's physical appearance.

---

1. Isoamyl Laurate

- **INCI Name**: Isoamyl Laurate
- **Trade Name**: Evicare® emolight
- **CAS No.**: 6309-51-9
- **Data Sheet**:
  - Technical Data Sheet
  - Additional Data Sheet
  - Safety Data Sheet (SDS)
- **Additional Functions**:
  - Solubilizer for colorants and UV filters
  - Hydrating agent
- **Melting Point (°C)**: -10

- **Recommended %**:
  - 1.0–20.0% for skincare products
  - 0.5–1.5% for hair care products
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**: Caprylic/Capric Triglyceride
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Extremely light, non-greasy
- **Lightness**: 5 (Very light)
- **Oil Appearance**: Clear to yellow oil, odorless, no discoloration

---

2. Cocos Nucifera (Coconut) Oil

- **INCI Name**: Cocos Nucifera Oil
- **Trade Name**: Cold Pressed Virgin Coconut Oil
- **CAS No.**: 273-313-5
- **Data Sheet**:
  - Technical Data Sheet
  - Additional Data Sheet
  - **MSDS**: Available upon request
- **Additional Functions**:
  - Hydrating agent
  - Natural fragrance
- **Melting Point (°C)**: 24–26
- **Recommended %**: 1.0–10.0%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**:
  - C12-15 Alkyl Benzoate
  - Caprylic/Capric Triglyceride
- **Incompatible Ingredients**: None specified

- **Electrolyte Tolerance**: Tolerant
- **Texture**: Slightly greasy, rich feel
- **Lightness**: 4
- **Oil Appearance**: Clear to yellow oil, no rancidity, coconut smell

---

3. Vegeline®

- **INCI Name**: Ricinus Communis (Castor) Seed Oil, Hydrogenated Castor Oil, Copernicia Cerifera (Carnauba) Wax
- **Trade Name**: VEGELINE®
- **CAS No.**: *Not provided*
- **Data Sheet**:
  - Technical Data Sheet
  - Additional Data Sheet
- **Additional Functions**:
  - Hydrating agent
  - Anti-oxidant
  - Anti-inflammatory
- **Melting Point (°C)**: 65–75
- **Recommended %**: 0.5–50.0%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**:
  - Isoamyl Laurate
  - C12-15 Alkyl Benzoate
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Rich, occlusive feel
- **Lightness**: 1 (Heavy)
- **Oil Appearance**: Ivory semi-transparent gel

---

4. C12-15 Alkyl Benzoate

- **INCI Name**: C12-15 Alkyl Benzoate
- **Trade Name**: HALLSTAR® C1215

- **CAS No.**: 68411-27-8
- **Data Sheet**:
  - Technical Data Sheet
  - **MSDS**: Available upon request
- **Additional Functions**:
  - Wetting agent
  - Oil absorption
  - Solubilizer
- **Melting Point (°C)**: Not specified
- **Recommended %**: 1.0–30.0%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**:
  - Isoamyl Laurate
  - Caprylic/Capric Triglyceride
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Clear, thin liquid, very mild odor
- **Lightness**: 5 (Very light)
- **Oil Appearance**: Clear liquid

---

5. Caprylic/Capric Triglyceride

- **INCI Name**: Caprylic/Capric Triglyceride
- **Trade Name**: Glyzer CT100
- **CAS No.**: 73398-61-5
- **Data Sheet**:
  - Technical Data Sheet
- **Additional Functions**:
  - Solubilizer for colorants and UV filters
  - Hydrating agent
- **Melting Point (°C)**: Not specified
- **Recommended %**: 1.0–30.0%

- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**:
  - Isoamyl Laurate
  - C12-15 Alkyl Benzoate
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Clear, thin liquid, very mild odor
- **Lightness**: 5 (Very light)
- **Oil Appearance**: Clear liquid

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6. Distinctive™ Squalane Butter 4

- **INCI Name**: Squalane, Caprylic/Capric Triglyceride, Behenyl Behenate, Tribehenin
- **Trade Name**: Distinctive™ Squalane Butter 4
- **CAS No.**: *Not provided*
- **Data Sheet**:
  - Technical Data Sheet
  - Additional Data Sheet
- **Additional Functions**:
  - Hydrating agent
  - Anti-aging
  - Skin-barrier booster
- **Melting Point (°C)**: 35
- **Recommended %**: 1.0–10.0%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Rich, creamy butter with a soft, luxurious skin feel and a light protective film
- **Lightness**: 3

- **Oil Appearance**: Creamy butter

---

7. Olea Europaea (Olive) Fruit Oil

- **INCI Name**: Olea Europaea Fruit Oil
- **Trade Name**: Refined Olive Oil
- **CAS No.**: 8001-25-0
- **Data Sheet**:
  - Technical Data Sheet
  - Additional Data Sheets, Link 2
- **Additional Functions**:
  - Hydrating agent
  - Anti-oxidant
- **Melting Point (°C)**: Not specified
- **Recommended %**: 2.0–10.0%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Rich, moisturized skin feel
- **Lightness**: 2
- **Oil Appearance**: Clear to slightly yellow oil

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8. Vitis Vinifera (Grape) Seed Oil

- **INCI Name**: Vitis Vinifera Seed Oil
- **Trade Name**: Deodorized Organic Grape Seed Oil
- **CAS No.**: 8024-22-4
- **Data Sheet**:
  - Technical Data Sheet
  - Additional Data Sheet
- **Additional Functions**:
  - Hydrating agent

    - Anti-oxidant
    - Anti-microbial
    - Anti-aging
- **Melting Point (°C)**: Not specified
- **Recommended %**: 1–15%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Light, translucent, mild odor, occlusive feel
- **Lightness**: 4
- **Oil Appearance**: Clear to light greenish oil

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9. Isononyl Isononanoate

- **INCI Name**: Isononyl Isononanoate
- **Trade Name**: LANOL 99
- **CAS No.**: 42131-25-9
- **Data Sheet**:
    - Technical Data Sheet
    - **MSDS**: Available upon request
- **Additional Functions**:
    - Sensory modifier
- **Melting Point (°C)**: -40
- **Recommended %**: 1–25%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Light, non-greasy, odorless

- **Lightness**: 5 (Very light)
- **Oil Appearance**: Clear liquid

---

10. Butyrospermum Parkii (Shea) Butter

- **INCI Name**: Butyrospermum Parkii (Shea) Butter
- **Trade Name**: SpecPure® Shea Butter 100
- **CAS No.**: 91080-23-8
- **Data Sheet**: *Not provided*
- **Additional Functions**:
  - Hydrating agent
  - Sensory modifier
  - Soothing properties
  - Anti-oxidant
- **Melting Point (°C)**: 34–50
- **Recommended %**: 0.5–5%
- **Phase**: Oil phase
- **Stable pH**: 4.0–8.0
- **Charge**: Non-ionic
- **Optional Ingredients**: None specified
- **Incompatible Ingredients**: None specified
- **Electrolyte Tolerance**: Tolerant
- **Texture**: Highly moisturized, smooth, rich feel
- **Lightness**: 0 (Heavy)
- **Oil Appearance**: Pale yellow to ivory solid butter

Additional Information:

- **Lightness Scale**: A subjective scale from 1 to 5 is used to indicate how heavy or light the ingredient feels on the skin. A lower number indicates a heavier feel, while a higher number indicates a lighter feel.
- **Optional Ingredients**: These are suggested ingredients that can enhance the performance or feel of the emollient when used in combination.
- **Electrolyte Tolerance**: Ingredients with high electrolyte tolerance can be used in formulations containing salts or other electrolytes without losing efficacy.
- **Charge**: Knowing the ionic charge assists in predicting compatibility with other ingredients.

Sensory Enhancers and Film-Formers Ingredient Data

Column Headers Explanation:

- **INCI Name**: International Nomenclature of Cosmetic Ingredients; standardized names for cosmetic ingredients.
- **Trade Name**: Commercial name under which the ingredient is sold.
- **CAS Number**: Chemical Abstracts Service registry number; unique numerical identifiers for chemical substances.
- **Technical Data**: Link to the technical data sheet providing detailed information about the ingredient.
- **SDS**: Safety Data Sheet link; provides safety and handling information.
- **Recommended Dosage**: Suggested usage levels in formulations.
- **pH**: Indicates the pH level or suitable pH range for the ingredient.
- **Form**: Physical state of the ingredient (e.g., powder, liquid).
- **Soluble In**: Solvents in which the ingredient is soluble.
- **Viscosity**: Viscosity of the ingredient, usually measured in centipoise (cP) or mm^2/s.
- **Color**: Appearance or color of the ingredient.
- **Boiling Point (°C)**: The temperature at which the ingredient boils.
- **Melting Point (°C)**: The temperature at which the ingredient transitions from solid to liquid.
- **Certification**: Any certifications the ingredient holds (e.g., COSMOS, ISO).
- **Regulation**: Regulatory compliances (e.g., US, EU).
- **Size**: Particle size or molecular size, often in nanometers (nm) or millimeters (mm).
- **Rheology Effect**: The effect of the ingredient on the flow properties of the formulation.
- **Benefits**: Functional benefits provided by the ingredient.
- **Opacify**: Indicates whether the ingredient adds opacity to the formulation (True/False).

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1. Fumed Silica

- **INCI Name**: Fumed Silica
- **Trade Name**: CAB-O-SIL® TS-720 FUMED SILICA
- **CAS Number**: 112945-52-5
- **Technical Data**: Technical Data Sheet
- **SDS**: Safety Data Sheet
- **Recommended Dosage**: 1%
- **pH**: 3.0 – 5.0
- **Form**: Powder
- **Soluble In**: Oil

- **Viscosity**: *Not specified*
- **Color**: White
- **Boiling Point (°C)**: Not applicable
- **Melting Point (°C)**: *Not specified*
- **Certification**: COSMOS
- **Regulation**: *Not specified*
- **Size**: 12 nm
- **Rheology Effect**: Thickening effect – Shear thinning
- **Benefits**: Rheology stabilizer, Oil control
- **Opacify**: **True**

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2. Cyclopentasiloxane

- **INCI Name**: Cyclopentasiloxane
- **Trade Name**: XIAMETER® PMX-0245 Cyclopentasiloxane
- **CAS Number**: 541-02-6
- **Technical Data**: Technical Data Sheet
- **SDS**: *Not provided*
- **Recommended Dosage**: 1–2%
- **pH**: Neutral (0)
- **Form**: Liquid
- **Soluble In**: Oil
- **Viscosity**: 4 mm^2/s
- **Color**: Colorless
- **Boiling Point (°C)**: 205
- **Melting Point (°C)**: *Not specified*
- **Certification**: *Not specified*
- **Regulation**: *Not specified*
- **Size**: *Not specified*
- **Rheology Effect**: *Not specified*
- **Benefits**: *Not specified*
- **Opacify**: *Not specified*

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3. Hydrolyzed Corn Starch

- **INCI Name**: Hydrolyzed Corn Starch
- **Trade Name**: Zea Mays
- **CAS Number**: 8029-43-4
- **Technical Data**: Technical Data Sheet
- **SDS**: Safety Data Sheet
- **Recommended Dosage**: 0.5–2%
- **pH**: 4.0–5.5
- **Form**: Powder
- **Soluble In**: Water
- **Viscosity**: *Not specified*
- **Color**: White
- **Boiling Point (°C)**: Not applicable
- **Melting Point (°C)**: *Not specified*
- **Certification**: ISO
- **Regulation**: *Not specified*
- **Size**: *Not specified*
- **Rheology Effect**: Viscosity control – Slight increase
- **Benefits**: Oil control
- **Opacify**: **True**

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4. Nylon-12

- **INCI Name**: Nylon-12
- **Trade Name**: Nylon-12
- **CAS Number**: 25038-74-8
- **Technical Data**: Technical Data Sheet
- **SDS**: Safety Data Sheet
- **Recommended Dosage**: 1–5%
- **pH**: 6.0–9.0
- **Form**: Powder
- **Soluble In**: Oil (Dispersible)
- **Viscosity**: *Not specified*
- **Color**: White to Light Yellow

- **Boiling Point (°C)**: Not applicable
- **Melting Point (°C)**: 165–175
- **Certification**: *Not specified*
- **Regulation**: *Not specified*
- **Size**: 6–9 nm
- **Rheology Effect**: *Not specified*
- **Benefits**: Enhance pay-off
- **Opacify**: **True**

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5. Oryza Sativa (Rice) Starch

- **INCI Name**: Oryza Sativa Starch
- **Trade Name**: RiceSorb™
- **CAS Number**: 9005-25-8
- **Technical Data**: Technical Data Sheet
- **SDS**: *Not provided*
- **Recommended Dosage**: 1–2%
- **pH**: 5.5–7.5
- **Form**: Powder
- **Soluble In**: Water (Soluble in hot water)
- **Viscosity**: *Not specified*
- **Color**: White
- **Boiling Point (°C)**: Not applicable
- **Melting Point (°C)**: *Not specified*
- **Certification**: COSMOS, ISO9001, ISO22000, ISO22716, ISO1400
- **Regulation**: US, EU
- **Size**: 3.0–8.0 µm
- **Rheology Effect**: Viscosity control – Slight increase
- **Benefits**: Oil control, Matte finish
- **Opacify**: **True**

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6. Dimethicone

- **INCI Name**: Dimethicone
- **Trade Name**: Polydimethylsiloxane

- **CAS Number**: 63148-62-9
- **Technical Data**: Technical Data Sheet
- **SDS**: Safety Data Sheet
- **Recommended Dosage**: 0.5–5%
- **pH**: Neutral (0)
- **Form**: Liquid
- **Soluble In**: Oil
- **Viscosity**: 350 mm^2/s (at 25 °C)
- **Color**: Colorless
- **Boiling Point (°C)**: Not specified
- **Melting Point (°C)**: Not specified
- **Certification**: *Not specified*
- **Regulation**: *Not specified*
- **Size**: *Not specified*
- **Rheology Effect**: *Not specified*
- **Benefits**: *Not specified*
- **Opacify**: *Not specified*

Note: This table provides detailed information about various sensory enhancers and film-former ingredients used in cosmetic formulations. The data includes their properties, usage guidelines, compatibility, and effects on the final product appearance. The information is formatted for easy copying into Microsoft Word and is structured to support Retrieval-Augmented Generation (RAG) processes.

Additional Information:

- **Rheology Effect**: Understanding the rheological properties is crucial for formulators to predict how the product will behave under different conditions (e.g., shear thinning indicates viscosity decreases with increased shear rate).
- **Opacify**: Ingredients that opacify will make the formulation less transparent, which can be desirable in certain products like creams and lotions.
- **Certification and Regulation**: Certifications like COSMOS or ISO indicate compliance with certain standards, which can be important for marketing and regulatory purposes.
- **Solubility**: Knowing the solubility helps in the formulation process to ensure proper mixing and stability.
- **Particle Size**: The size of particles affects the texture and feel of the product; smaller particles can provide a smoother feel.

Preservative Ingredients data

Column Headers Explanation:

- **INCI Name**: International Nomenclature of Cosmetic Ingredients; standardized names for cosmetic ingredients.
- **Trade Name**: Commercial name under which the ingredient is sold.
- **CAS Number**: Chemical Abstracts Service registry number; unique numerical identifiers for chemical substances.
- **Data Sheet**: Link to the technical data sheet providing detailed information about the ingredient.
- **SDS**: Safety Data Sheet link; provides safety and handling information.
- **Recommended Dosage**: Suggested usage levels in formulations.
- **Soluble In**: Solvents in which the ingredient is soluble.
- **Other Solubility**: Additional solvents that can dissolve the ingredient.
- **State**: Physical state of the ingredient (e.g., powder, liquid).
- **Color**: Appearance or color of the ingredient.
- **pH**: Indicates the pH level or suitable pH range for the ingredient.
- **Stability**: Stability characteristics, including temperature range.
- **Other**: Additional relevant information.
- **Regulation (EU)**: Compliance with European Union regulations.
- **Melting Point (°C)**: The temperature at which the ingredient transitions from solid to liquid.
- **Boiling Point (°C)**: The temperature at which the ingredient boils.
- **Antimicrobial Spectrum**:
    - **Bacteria Gram Positive**: Effective against Gram-positive bacteria.
    - **Bacteria Gram Negative**: Effective against Gram-negative bacteria.
    - **Yeasts**: Effective against yeast organisms.
    - **Molds**: Effective against molds.
- **Formaldehyde Releasers**: Indicates if the preservative releases formaldehyde.
- **Parabens**: Indicates if the preservative is a paraben.
- **Incompatible Ingredients**: Ingredients that should not be used together due to stability or efficacy issues.
- **Caution**: Safety precautions or potential irritations.

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1. Phenoxyethanol

- **INCI Name**: Phenoxyethanol
- **Trade Name**: Phenoxyethanol
- **CAS Number**: 122-99-6

- **Data Sheet**: Technical Data Sheet
- **SDS**: *Not provided*
- **Recommended Dosage**: 0.5–1.0%
- **Soluble In**: Oil
- **Other Solubility**: Water (2.7 g/100 ml)
- **State**: Liquid
- **Color**: Colorless
- **pH**: 5.0–7.0
- **Stability**: Wide range of temperatures
- **Other**: Free phenol (ppm) < 20
- **Regulation (EU)**: *Not specified*
- **Melting Point (°C)**: -15 °C
- **Boiling Point (°C)**: 205 °C
- **Antimicrobial Spectrum**:
  - **Bacteria Gram Positive**: Yes
  - **Bacteria Gram Negative**: Yes
  - **Yeasts**: Yes
  - **Molds**: Yes
- **Formaldehyde Releasers**: Yes
- **Parabens**: Yes
- **Incompatible Ingredients**:
  - Parabens
  - Quaternary ammonium compounds (quats)
  - Certain types of emulsifiers
- **Caution**: Causes serious eye irritation

---

2. Benzyl Alcohol

- **INCI Name**: Benzyl Alcohol
- **Trade Name**: Benzyl Alcohol ROTI®STAR Primary Standard
- **CAS Number**: 100-51-6
- **Data Sheet**: Technical Data Sheet
- **SDS**: *Included in the data sheet*
- **Recommended Dosage**: 1.0–2.0%

- **Soluble In**: Water
- **Other Solubility**: Ethanol
- **State**: Liquid
- **Color**: Colorless
- **pH**: 7
- **Stability**: *Not specified*
- **Other**: It is slowly oxidized to benzaldehyde and benzoic acid on exposure to air
- **Regulation (EU)**: *Not specified*
- **Melting Point (°C)**: -15 °C
- **Boiling Point (°C)**: 205 °C
- **Antimicrobial Spectrum**:
  - **Bacteria Gram Positive**: Yes
  - **Bacteria Gram Negative**: Yes
  - **Yeasts**: Yes
  - **Molds**: No
- **Formaldehyde Releasers**: Yes
- **Parabens**: No
- **Incompatible Ingredients**: *Not specified*
- **Caution**: May oxidize upon exposure to air; monitor for changes

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3. Methylparaben

- **INCI Name**: Paraben (specifically Methylparaben)
- **Trade Name**: Methyl Paraben BP
- **CAS Number**: 99-76-3
- **Data Sheet**: Technical Data Sheet
- **SDS**: *Not provided*
- **Recommended Dosage**: Up to 0.5%
- **Soluble In**: Oil
- **Other Solubility**: Water (3 g/100 ml)
- **State**: Powder
- **Color**: Colorless
- **pH**: 5.8
- **Stability**: Stable in oil and fat

- **Other**: *Not specified*
- **Regulation (EU)**: *Not specified*
- **Melting Point (°C)**: 125–128 °C
- **Boiling Point (°C)**: 270–280 °C
- **Antimicrobial Spectrum**:
  - **Bacteria Gram Positive**: Yes
  - **Bacteria Gram Negative**: Yes
  - **Yeasts**: No
  - **Molds**: Yes
- **Formaldehyde Releasers**: No
- **Parabens**: Yes
- **Incompatible Ingredients**:
  - Niacinamide
  - Vitamins A and C
  - Alpha hydroxy acids
  - Beta hydroxy acids
- **Caution**: Avoid strong oxidizing agents and strong bases

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4. Sodium Benzoate

- **INCI Name**: Sodium Benzoate
- **Trade Name**: Sodium Benzoate
- **CAS Number**: 532-32-1
- **Data Sheet**: Technical Data Sheet
- **SDS**: *Not provided*
- **Recommended Dosage**: 0.05–0.1%
- **Soluble In**: Water
- **Other Solubility**: Ethanol, Glycerin, Methanol
- **State**: Powder
- **Color**: White
- **pH**: 6.5–8.0
- **Stability**: *Not specified*
- **Other**: *Not specified*
- **Regulation (EU)**: *Not specified*

- **Melting Point (°C)**: *Not specified*
- **Boiling Point (°C)**: *Not specified*
- **Antimicrobial Spectrum**:
  - **Bacteria Gram Positive**: Yes
  - **Bacteria Gram Negative**: Yes
  - **Yeasts**: Yes
  - **Molds**: Yes
- **Formaldehyde Releasers**: No
- **Parabens**: No
- **Incompatible Ingredients**:
  - Ascorbic Acid (Vitamin C)
  - Quaternary ammonium compounds (quats)
  - Certain types of emulsifiers
- **Caution**: None specified

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5. Isothiazolinones (CMIT/MIT)

- **INCI Name**: Isothiazolinones (specifically CMIT/MIT)
- **Trade Name**: CMIT/MIT
- **CAS Number**: 26172-55-4
- **Data Sheet**: Technical Data Sheet
- **SDS**: *Not provided*
- **Recommended Dosage**: 1.5–14%
- **Soluble In**: Water
- **Other Solubility**: Ethanol
- **State**: Liquid
- **Color**: Colorless to Pale Yellow
- **pH**: 2.0–4.0
- **Stability**: *Not specified*
- **Other**: *Not specified*
- **Regulation (EU)**: *Not specified*
- **Melting Point (°C)**: *Not specified*
- **Boiling Point (°C)**: 109.7 °C
- **Antimicrobial Spectrum**:

    - **Bacteria Gram Positive**: Yes
    - **Bacteria Gram Negative**: Yes
    - **Yeasts**: Yes
    - **Molds**: Yes
- **Formaldehyde Releasers**: No
- **Parabens**: No
- **Incompatible Ingredients**: Incompatible with strong oxidizing agents
- **Caution**: Use with caution due to potential skin sensitization; follow regulatory guidelines

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6. Propylene Glycol (and) Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate

- **INCI Name**: Propylene Glycol, Diazolidinyl Urea, Iodopropynyl Butylcarbamate
- **Trade Name**: Germall Plus Liquid
- **CAS Numbers**: 78491-02-8, 55406-53-6
- **Data Sheet**:
    - Technical Data Sheet
    - SDS
- **Recommended Dosage**: 0.1–0.5%
- **Soluble In**: Water
- **Other Solubility**: *Not specified*
- **State**: Liquid
- **Color**: Colorless
- **pH**: 3–8
- **Stability**: *Not specified*
- **Other**: Leave-on products maximum concentration is 0.01%
- **Regulation (EU)**: *Not specified*
- **Melting Point (°C)**: -63.89 °C
- **Boiling Point (°C)**: 192.22 °C
- **Antimicrobial Spectrum**:
    - **Bacteria Gram Positive**: Yes
    - **Bacteria Gram Negative**: Yes
    - **Yeasts**: Yes
    - **Molds**: Yes
- **Formaldehyde Releasers**: No

- **Parabens**: No
- **Incompatible Ingredients**: *Not specified*
- **Caution**: Follow recommended usage rates to avoid skin irritation