Pieridae Beauty - Anti-Itch Scalp Mist (with Piroctone Olamine)

Product Type: Scalp Refresh Mist

Target: 4C Hair | Anti-Itch | Anti-Fungal | Hydrating

Batch Size: 100g

pH Range: 5.0–6.0

Preservation: Optiphen Plus (1%)

Packaging: Amber or frosted fine mist spray bottle (100 mL)

# Ingredient Breakdown

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| INCI Name | Function | % |
| Aqua (Distilled Water) | Base | 53.25% |
| Aloe Barbadensis Leaf Juice | Hydrating & Soothing | 25.00% |
| Glycerin | Humectant | 3.00% |
| Panthenol | Scalp Barrier Support | 2.00% |
| Piroctone Olamine | Anti-Fungal, Anti-Itch | 0.50% |
| Propanediol | Solvent for Actives | 2.00% |
| Niacinamide | Sebum Control, Barrier Support | 2.00% |
| Allantoin | Soothing, Anti-Itch | 0.25% |
| Mentha Piperita (Peppermint) Hydrosol | Cooling | 5.00% |
| Melaleuca Alternifolia (Tea Tree) Hydrosol | Anti-Microbial | 5.00% |
| Avena Sativa (Oat) Kernel Flour | Soothing | 1.00% |
| Bisabolol | Anti-Inflammatory | 0.30% |
| Rosmarinus Officinalis (Rosemary) Oil | Growth Support | 0.30% |
| Polysorbate 20 or Olivem 300 | Solubilizer | 2.00% |
| Optiphen Plus | Preservative | 1.00% |

# Formulation Instructions

1. 1. Phase A – Pre-Dissolve Piroctone Olamine:  
    - Weigh 0.5g Piroctone Olamine and 2g Propanediol.  
    - Heat to 40–50°C while stirring until clear. Cool slightly.
2. 2. Prepare Water Phase:  
    - Combine Distilled Water, Aloe Vera Juice, Glycerin, Panthenol, and Niacinamide.
3. 3. Add the cooled Piroctone Olamine solution to the water phase and stir gently.
4. 4. Pre-disperse 0.25g Allantoin in 0.75g Propanediol or Glycerin, then add to the water phase (keep temp < 40°C).
5. 5. Add Peppermint Hydrosol, Tea Tree Hydrosol, Colloidal Oatmeal, and Bisabolol.
6. 6. Prepare Phase C:  
    - Mix Rosemary EO with Solubilizer. Stir into main batch.
7. 7. Add Optiphen Plus.
8. 8. Check pH and adjust to 5.0–6.0:  
    - Raise with 10% L-Arginine solution or 10% NaOH if pH < 5.0.  
    - Lower with 20% Citric Acid solution if pH > 6.0.
9. 9. Bottle in a fine mist spray container.

# Why This Works

• Piroctone Olamine (0.5%) – Primary antimicrobial and sebostatic active.

• Niacinamide (2%) – Clinically reduces sebum ~30% in 4 weeks; strengthens skin barrier via ceramide synthesis.

• Allantoin (0.25%) – Proven anti-irritant that calms itch and promotes skin healing.