



## ELPROTECT – BZO f™ (Benzyl Alcohol)

### Technical Datasheet

#### 1. Technical Datasheet

| Property                    | Specification                                            |
|-----------------------------|----------------------------------------------------------|
| <b>Physical Properties</b>  |                                                          |
| Appearance                  | Clear almost colorless or slightly yellow viscous liquid |
| Physical Form               | Liquid                                                   |
| Odor                        | Faint aromatic odor                                      |
| Molecular Weight (g/mol)    | 108.14                                                   |
| Density or Specific Gravity | 1.05 g/mL at 25 °C                                       |
| Viscosity                   | 5.474 cP at 25 °C                                        |
| Refractive Index            | [n] <sub>D</sub> /20 1,538-1,541                         |
| pH (if aqueous solution)    | A solution in water is neutral to litmus                 |
| <b>Chemical Properties</b>  |                                                          |
| Water Solubility            | 4.29 g/100 mL (20 °C)                                    |
| Incompatibilities           | Oxidizing agents and strong acids                        |
| <b>Thermal Properties</b>   |                                                          |
| Melting Point               | 4.5 °F                                                   |
| Boiling Point               | 401 °F at 760 mmHg                                       |
| Flash Point                 | 213 °F                                                   |
| Autoignition Temperature    | 817 °F                                                   |

#### 2. Processing Methods



### Injectable (Parenteral) Formulations

Benzyl alcohol is added during formulation as a preservative to allow multidose use. It's included in the aqueous phase, often added during the cool-down phase (~40°C) to avoid volatility.

| Key Ingredients           | Indicative Dosage (% w/w) |
|---------------------------|---------------------------|
| Lidocaine hydrochloride   | 1-2%                      |
| Benzyl alcohol            | 0.9%                      |
| Sodium chloride           | for isotonicity           |
| Water for injection (WFI) | to volume                 |

### Cosmetics cream

In cream production, add Benzyl Alcohol to the cooled phase to preserve its antimicrobial properties and prevent degradation.

| Key Ingredients       | Indicative Dosage (% w/w) |
|-----------------------|---------------------------|
| $\alpha$ -Arbutin     | 2%                        |
| Oxidized Glutathione  | 2%                        |
| Grape Seed Extract    | 0.2%                      |
| Ceto-Stearyl Alcohol  | 9%                        |
| Cetomacrogol-1000 B.P | 3.5%                      |
| Light Liquid Paraffin | 5%                        |
| White Soft Paraffin   | 7%                        |
| Propylene Glycol      | 16.8%                     |
| Disodium EDTA         | 0.05%                     |
| Sepineo P600          | 1.3%                      |
| Benzyl Alcohol        | 1%                        |
| Deionized Water       | 40-50%                    |
| Triethanolamine       |                           |



## Shampoo

In shampoo formulation, add Benzyl Alcohol as a preservative towards the end of the formulation process, mixing gently to ensure uniform distribution

| Key Ingredients                                              | Indicative Dosage (% w/w) |
|--------------------------------------------------------------|---------------------------|
| Sodium Laureth Sulfate                                       | 10-15%                    |
| Cocamidopropyl Betaine                                       | 3-6%                      |
| Glycerin                                                     | 2-4%                      |
| Benzyl Alcohol                                               | 0.5-2%                    |
| Fragrance/Essential Oil                                      | 0.5-1%                    |
| Water                                                        | 50-60%                    |
| Other additives (conditioning agents, thickeners, colorants) |                           |

## Foundation lotion

In foundation formulation, add Benzyl Alcohol during the cool-down phase to maintain its preservative effectiveness. Stir gently to ensure even dispersion without affecting the emulsion stability or pigment performance.

| Key Ingredients       | Indicative Dosage (% w/w) |
|-----------------------|---------------------------|
| Liquid Paraffin       | 30%                       |
| Cetyl Alcohol         | 2%                        |
| Glyceryl Monostearate | 1%                        |
| Triethanolamine       | 1%                        |
| Pigment Powder Base   | 2%                        |
| Methylparaben         | 0.15%                     |
| Propylparaben         | 0.02%                     |
| Water                 | 50-60%                    |
| Benzyl Alcohol        | 1%                        |
| Perfume               |                           |

## 3. Dosing by Application

| Products                                         | Authorized dosage   |
|--------------------------------------------------|---------------------|
| Cosmetics: shampoos, lotions, creams, and makeup | 0.5% to 2%          |
| Pharmaceuticals: in adults                       | ≤ 5 mg/kg/day (ADI) |



The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

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