

## Ecwa SURF AT 80

### DESCRIPTION/APPLICATION etc.

#### DESCRIPTION:

**EcwaSURF AT 80** (Powder /Flakes) : **Nonionic Surfactant** for use in **Detergents and Cleaners** and for the **Chemical and Allied Industries**.

#### FORMULATION/COMPOSITION:

**Chemical Nature:** **EcwaSURF AT 80** (Powder /Flakes) is a **Nonionic Surfactant**. It is an **Alkylpolyethylene Glycol Ether** made from a **Linear, Saturated C16/C18 Fatty Alcohol**. It conforms to the following formula.:  $RO(CH_2CH_2O)_xH$  R = **Linear, saturated C16/C18 fatty alcohol** x = **80**. The number in the alphanumeric code indicates the nominal degree of ethoxylation.

**EcwaSURF AT 80** (Powder /Flakes) are manufactured by causing the **fatty alcohol** to react with **ethylene oxide** in **stoichiometric proportions**. The ethoxylation temperature is kept as low as possible. This, combined with the high purity of the feedstocks, ensures that a high-performance product with low toxicity is obtained.

#### DESCRIPTION: Physical and Chemical Properties

##### EcwaSURF AT 80 :

**Appearance & Physical State** ..... : Powder, are colourless or slightly yellowish powders.  
 ..... : Flakes, are colourless or slightly yellowish flakes.

**Degree of Ethoxylation** ..... : 80

**Concentration %** ..... : 100

**Cloud point (acc to EN 1890)** : Method A : 1 g of surfactant + 100 g of distilled water )..... : > 100 °C  
 Method B : 1 g of surfactant + 100 g of NaCl solution (c = 50 g/l) ..... : 87 °C  
 Method C : 1 g of surfactant + 100 g of NaCl solution (c = 100 g/l)..... : 73 °C  
 Method D : 5 g of surfactant + 45 g of diethylene glycol monobutyl ether solution (c = 250 g/l) : 100 °C  
 Method E : 5 g of surfactant + 25 g of diethylene glycol monobutyl ether solution (c = 250 g/l) : 100 °C

**Molar Mass (calculated from hydroxyl number) g/mol** : 3780 g/mol

**pH (EN 1262, 5 % in water)**..... : 7 (The pH of **EcwaSURF AT 80** can decrease during storage, but this does not have any effect on their performance.)

**Density (DIN 51757, 60 °C) g/cm<sup>3</sup>(23 °C)**..... : 1.04 g/cm<sup>3</sup>

**Apparent Density (ISO 697) kg/l**..... : 0.6 kg/l

**Dropping Point (DIN 51801)** ..... : 52 °C

**Congealing Point (ISO 2207)**..... : 43 °C

**Clear Melting Point** ..... : 56 °C

**Viscosity (EN 12092, 60 °C, Brookfield, 60 rpm) mPa·s** : 300 mPa·s

**Hydroxyl Number (DIN 53240) mg KOH/g** ..... : 14 mg KOH/g

**Hydrophilic-Lipophilic Balance** ..... : 18.5

**Wetting Power (EN 1772, in distilled water with 2 g/l soda ash)(a):** 0.5 g/l, 23 °C s > 300: 1 g/l, 23 °C s > 300: 2 g/l, 23 °C s > 300  
 (b): 0.5 g/l, 70 °C s > 300: 1 g/l, 70 °C s > 300: 2 g/l, 70 °C s > 300

**Foam Formation (EN 12728, 40 °C, 2 g/l in water with a hardness of 1.8 mmolCa<sup>2+</sup> ions/l, after 30 sec) ...:** 200 cm<sup>3</sup>

**Surface Tension (EN 14370, 1 g/l in distilled water at 23 °C) .....** : 50 mN/m

**Solubility in various solvents (10 % solutions at 23 °C):**

- \* Distilled water..... : Clear Solution
- \* Potable water (approx. 2.7 mmol Ca<sup>2+</sup> ions/l) ..... : Clear Solution
- \* Caustic soda (5 % w/w)..... : Insoluble
- \* Hydrochloric acid (5 % w/w) ..... : Clear Solution
- \* Sodium chloride solution (5 % w/w) ..... : Clear Solution
- \* Mineral oils ..... : Insoluble
- \* Ethanol ..... : Clear Solution
- \* Aromatic hydrocarbons ..... : Clear Solution

Always consult the Material Safety Data Sheet before Use

#### Disclaimer / Non-warranty

This product has been subjected to limited tests and has been shown to perform well. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, Ecwamix Chemical Systems cc. disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own application tests on a small area prior to using the product.

### EcwaSURF AT 80

#### DESCRIPTION: Physical and Chemical Properties etc. - CONTINUED

**Viscosity:** The Relationship between Viscosity and Temperature is always an important point to consider when **EcwaSURF AT 80** are to be Stored or Shipped. The higher the temperature, the lower the resultant viscosity.

\* **EcwaSURF AT 80** tend to form a gel at certain concentrations when diluted with water. It is advisable to prepare stock solutions for mixing with other solutions or for preparing very dilute solutions. We would recommend preparing stock solutions with a concentration of 10 – 15 % by heating the water and **EcwaSURF AT 80** to 70 °C and then stirring the surfactant into the water in small portions until the required concentration is reached. Care should be taken to ensure that the solution does not form a gel. These solutions are then easy to dilute down to their final concentration.

#### APPLICATIONS:

- \* **EcwaSURF AT 80** have excellent Detergency and excellent Soil-dispersing Capacity. It is mainly employed in Household, Industrial and Institutional Detergents and Cleaners. Their Degrees of Ethoxylation are such that they perform particularly well in Heavy-Duty Laundry Detergents in the medium and high temperature ranges. They also improve the Flowability of detergent powders.
- \* **EcwaSURF AT 80** also perform very well in Aqueous Cleaner formulations and in formulations based on Mixtures of Water and Organic Solvents. Very large amounts of Acids, Alkalis, Salts and Organic Solvents may have to be added to some types of formulation in order to fulfil special requirements. High concentrations of Inorganic salts, Bases and Acids can impair the solubility of **EcwaSURF AT 80**, but this does not necessarily affect its performance. Electrolytes of this type do not cause **EcwaSURF AT 80** to decompose.
- \* **EcwaSURF AT 80** is supplied in the form of Fine, Freeflowing Powder or Beads. Unlike cast solids or flakes, they can be mixed into formulations directly. They are also Easier to Dissolve, and there is less dusting when drums are emptied, etc.
- \* **EcwaSURF AT 80** is an Effective Emulsifier for substances such as Paraffin Wax or other Waxes. They perform well alone or in combination with other emulsifier types.
- \* **EcwaSURF AT 80** also perform well as Wetting agent, and has high wetting power in water and polar solvents.
- \* **EcwaSURF AT 25** can be Combined with Anionic, Cationic and Nonionic Surfactants and Auxiliaries. They are fully Compatible with alkylaryl sulphonates, ether sulphates and other sulphated and sulphonated products. This enables synergistic effects and very high levels of performance to be obtained. It is also Compatible with cationic dimethyl-N-alkylbenzylammonium chloride).
- \* **EcwaSURF AT 80** also have excellent Resistance to Hard water, and its Dispersing capacity for lime soaps is very high.
- \* **EcwaSURF AT 80** is used as Powder binders for solid cleaners and detergents supplied in block form.
- \* **EcwaSURF AT 80** very effective Emulsifier for hydrophobic substances such as fatty acids, ester-type waxes, monomers for emulsion polymerization and polar solvents etc. which normally require Surfactants with a High HLB.
- \* **EcwaSURF AT 80** can be used to Stabilize Emulsions and to Disperse Suspended Solids in Water.
- \* **EcwaSURF AT 80** can be added to Commercial Rinse Aids in order to encourage the water to drain off and to promote sheeting.
- \* Despite its High Degree of Ethoxylation, **EcwaSURF AT 80** has a Very Low Polyglycol Content. This is ideal for use in Coatings applied to Enzymes, Defoamers in Powder form, Bleach Activators and other Activators that needs to unfold their action gradually over the whole wash.
- \* **EcwaSURF AT 80** can be used in, Powder detergents, Liquid detergents, Cleaners and shampoos, Technical cleaners, Dishwasher detergent.

#### STORAGE/SHELF LIFE:

- \* **EcwaSURF AT 80** should be stored in a dry place and in ambient conditions, in original packaging, which should be kept tightly sealed. Storerooms must not be overheated.
- \* **EcwaSURF AT 80** is hygroscopic and soluble in water, with the result that it will absorb moisture very quickly. Drums and bags should be tightly resealed each time material is taken from them.
- \* In powder form, **EcwaSURF AT 80** should be stored in a dry place at a temperature not exceeding 30 °C. It must be protected from sunlight to ensure that it does not form lumps.
- \* **Shelf life:** **EcwaSURF AT 80** have a shelf life of at least two years, provided it is stored in their original packaging and kept tightly sealed.

#### PACKAGING:

**EcwaSURF AT 80** is available in: 25 Kg Bags

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