Whether you're suffering from sunburn in the summer, or dry skin in the winter, moisturisers are on hand to help. This graphic takes a look at some of the different compounds that moisturisers combine, and how each of the groups of compounds act to help produce a moisturising effect.

**THE EPIDERMIS**

The skin has 3 main layers. The middle layer, the dermis, has several roles which include storing water. Transepidermal water loss (TEWL) is a normal process of water loss through the epidermis; moisturisers aim to reduce this water loss.

**THE CHEMISTRY OF MOISTURISERS**

**SKIN & WATER LOSS**

Occlusive agents prevent water loss by forming a hydrophobic barrier over the stratum corneum (the upper layer of the epidermis). Vaseline is an example of an occlusive moisturiser. Though effective, they make skin feel greasy.

Humectants are hydrophilic, and help draw water from the dermis to the epidermis. At humidity higher than 80%, they can also draw water from the atmosphere. Evaporation from skin as a result can also cause extra dryness, however.

Like occlusives, emollients can form a barrier to TEWL when applied heavily. They can also reduce TEWL by helping 'plug' the gaps between corneocytes (dead skin cells), replacing absent natural skin lipids, and help smooth roughened skin.

**THE EPIDERMIS**

The epidermis is composed of five sub-layers. The uppermost of these is the stratum corneum, which is made up of dead skin cells surrounded by proteins. Ceramides, fatty acids and cholesterol fill the gaps between cells, limiting transepidermal water loss.

**OCCLUSIVE BARRIER**

**OCCLUSIVES**

PETROLATUM

Mixture of hydrocarbons with 25+ carbon atoms
Other occlusives include lanolin & silicones

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**HUMECTANTS**

GLYCERIN (L) & SORBITOL (R)

Other humectants include urea, sodium lactate, & hyaluronic acid

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**EMOLLIENTS**

GLYCOL STEARATE (L) & CHOLESTEROL (R)

Others: ceramides, squalene, & fatty acids

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**DERMIS**

**HYPODERMIS**

Approx. lipid composition of stratum corneum

- Ceramides: 50%
- Cholesterol: 25%
- Fatty acids: 10%
- Other: 15%

**Glycol Stearate (L) & Cholesterol (R)**

GLYCOL STEARATE (L) & CHOLESTEROL (R)

Others: ceramides, squalene, & fatty acids

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