

TECHNICAL FACT SHEET - HIPEGEL® AQUA & HIPEGEL® AQUA C

For water soluble actives and excipients

HIPEGel® Aqua & HIPEGel® Aqua C are vegetable-origin excipients that enable the formulator to make high water content HIPEs (High Internal Phase Emulsions) easily, with minimal heating. The water phase is typically greater than 90% and the resulting emulsion is w/o, meaning that a natural barrier is formed on the skin, yet because the water level is high, the cream is light and has a 'quick break' effect. Due to the nature of the polygonal packing of water droplets in the structure (Fig. 1), stable viscous systems are made without the use of added thickeners.

QUALITY MANAGEMENT SYSTEMS

- **ISO 9001** – the materials are produced under a traceable ISO 9001 QMS and the facility is open to audit subject to MOQ
- **Pharma grade** – the raw material ingredients can be fully Pharma grade to compendial requirements as required
- **Pharma GMP** – there is scope to make the materials in a fully Pharma GMP compliant environment should the need arise



Figure 1.
Packing of
water
droplets
in a HIPE

Please feel free to contact us to discuss further.

SUGGESTED FRAMEWORK FORMULATION

Oil Phase:	HIPEGel® Aqua	6%	Water Phase:	Water	85%
	Oil (Ester, Veg oil, Silicone)	2%		Glycerin	5%
	Wax (mp > 60°C)	1%		Magnesium Sulphate	1%

Method: Weigh out oil and heat until wax has melted. Mix together Water Phase at room temperature until all dissolved. Transfer Oil Phase onto overhead stirrer fitted with a propeller blade and stir rapidly, dropping in Water Phase slowly at first, then quicker. There is also a 'one pot' method more suitable for bulk manufacturing, please see Formulation Method Guide.

THE PRODUCTS ARE WELL SUITED TO ANTI-POLLUTION FORMULATIONS

Anti-Pollution formulations rely on 2 actions on the skin:

- 1) Delivery of actives to the skin to neutralise free radicals and deactivate toxins.
- 2) Forming a physical barrier to prevent particles and other substances from reaching the skin.

HIPEGel® formulations aid both of these modes of action by solubilising both water soluble and oil soluble actives in the structure. Water soluble actives are naturally encapsulated by the thin film of oil that surrounds them, leading to extra protection and a controlled release. The fine layer of oil forms a physical barrier on the skin to prevent entry of particulates (Fig. 2).



Figure 2.
Schematic
diagram of
structure of
HIPEGel® Aqua
formulations
and their action
with actives on
the skin.