

Formulating cosmetic products into soluble packaging

Reasons and Challenges

Norman Lowe

Chemlink Specialities



HARKE GROUP

About Me

23 years at Chemlink
Specialities Ltd in the UK

50 years in surfactants and
specialty chemicals industry

20 years formulating products
into soluble packaging



Why soluble packaging?

- ✓ Unit dosing
- ✓ Less waste
- ✓ No contact
- ✓ Concentrated format
- ✓ Energy savings
- ✓ Huge reduction in single use plastics



Polyvinyl alcohol

This is the predominant material used for water soluble packs.

- ✓ Very water soluble
- ✓ Readily biodegradable' leaving no waste
- ❖ Petrochemical derived product



Ecological impact

RTU surface spray
cleaner in 500ml
plastic bottle

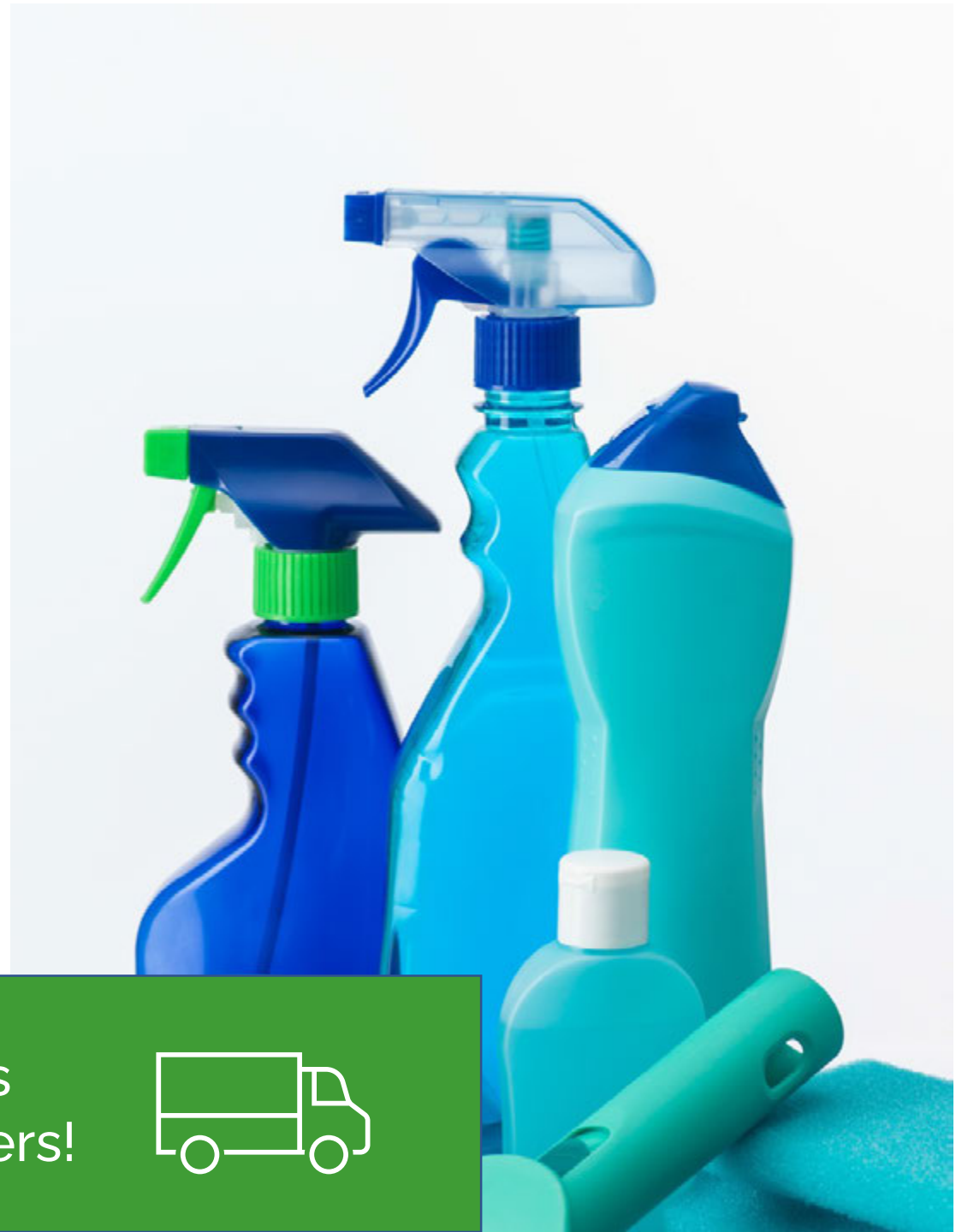


Concentrated
soluble pack
product

20kg of plastic saved 'per cleaner'

Reduced warehousing and transport

One pallet of powdered concentrated pod is
equivalent to a 20 tonne truck of TRU cleaners!



Why cosmetics?



Challenge: water content

$\leq 5\%$ of water in the system



Challenge: aesthetics

Wash off:

shampoo, body wash, hand wash

Leave on:

skin creams



Challenge: aesthetics

Shampoos are as standard:

- ✓ Viscous liquids (ca 10%-20% active)
- ✓ Nice colour and fragrance
- ✓ Strictly controlled preservative function and level
- ✓ High foaming
- ✓ Controlled cleaning
- ✓ Other attributes such as conditioning



Challenge: aesthetics

So your concentrate must have:

- ✓ The correct level of fragrance, colour and preservative
- ✓ Less than 5% water
- ✓ Have in its diluted form the same rheological aesthetics as a standard product

Shampoo pod photo

Challenge: thickening

Raw materials in a skin cream are for the most part high active and low/no water

Main difficulty = thickening on dilution

- ❖ Can't use hot blended cream ingredients
- ❖ Can't use normal polymer powders for cold blend as they're not soluble in oils or low water systems

So what's the solution?



LEANSER **ASTON CHEMICALS**

AND RESET YOUR SOUL

...age in with a few drops of water

...LLC-L, a mild, DS approved ...t, thoroughly the skin without the natural lipid barrier

Once rinsed, skin feels soft and nourished by Lipex SheaLiquid TR, a fully traceable, eco-conscious liquid shea butter

...R envelops the user in a relaxing, xperience

...ee the transformation from a vivid pink balm into a calming lavender milk as you massage away the stresses of your day

...urround yourself in the aroma of orange essential oil, known to relieve anxiety and inflammation

...el the warmth, helping to relax your facial muscles which have been tensed through the pressures of every day life

...R for yourself and n... d 209!

FOR GOODNESS... SHAKE! SKINCARE WITH A CONSCIENCE BY NORMAN LOWE

IN A WORLD CONSUMED BY CONSUMABLES... AND A GLOBAL WARMING CRISIS... A HERO WAS BORN. CAPTAIN NORM'S MISSION IS SIMPLE. LIMIT PLASTIC USE. REDUCE CARBON FOOTPRINTS. BRING CUSTOMISABILITY TO THE PEOPLE.

CAPTAIN NORM

MY NAME IS CAPTAIN NORM. I'M MADE OF SUPER-CONCENTRATED SUPER-ACTIVES BLENDED TOGETHER WITH SUPER-LOW ENERGY! I DISSOLVE COMPLETELY IN WATER, LEAVING NO RESIDUE AND NO MICROPLASTICS.

HMM... IT DOESN'T LOOK LIKE MUCH...

IT'S... CHANGING!

WOW!!!

THEY WONDERED HOW A POD IN A REUSABLE GLASS JAR COULD TURN INTO A FACE CREAM...

...BUT WHEN THEY ADDED WATER AND SHOOK - SOMETHING AMAZING HAPPENED...

SUPER-POWERED FACE CREAM

...be the hero this planet needs? #525 and shake things up - ...S... SHAKE!

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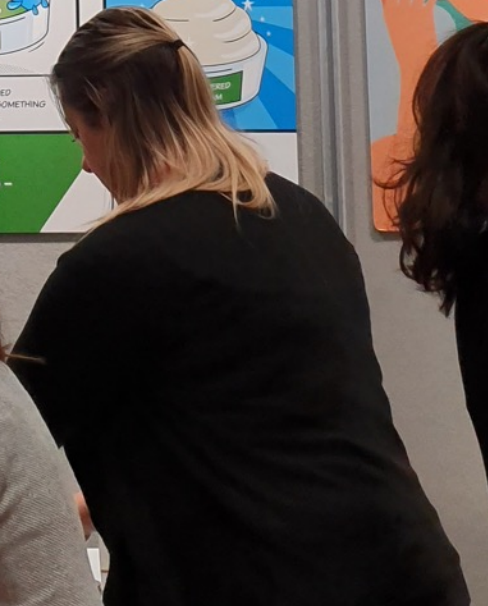
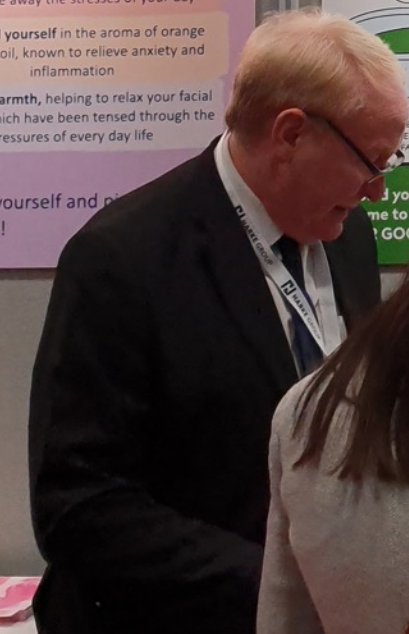
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Lets Cleansing an

Sulfate-Free Plastic-Free



Chemlink Specialities

BE A HERO
FOR GOODNESS...

SHAKE!



STEP 1 Add a pod to your reusable glass container.

TOP TIP! Custom ingredients like actives, essences or fragrances may be added at home!

STEP 2 Fill with water up to shoulder of container and replace the lid.



TOP TIP! Remember to check the lid is tightly secured.

SHAKE!



STEP 3
SHAKE!

STEP 4
Open to reveal your rich gel cream ready to use!

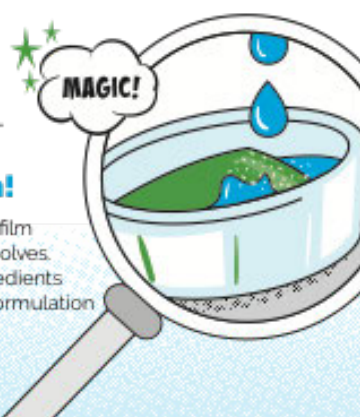


WHAT'S GOING ON INSIDE?

Vibrations Dissolve Film...

Actives + H₂O
= Transformation!

When shaken in water the film of the pod completely dissolves. And when the active ingredients and water combine, the formulation magically transforms into a rich, thick cream.



Chemlink Specialities



HARKE GROUP

Chemlink Specialities, part of the Harke Group, is a dynamic company offering an application and formulation led approach to chemical distribution. Supported by a comprehensive range of products from quality manufacturers, we bring an innovative synthesis of products and chemistry to customer applications.

Chemlink Specialities offers an integrated formulation and sampling service that benefits principals and customers alike and drawing upon our extensive database of formulations enables us to develop tailor made samples for immediate customer evaluation. Our unique formulation lab services span a spectrum of industries including Cosmetics and Personal Care, Hi&I, Auto Care, and Pharmaceutical.

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A Proud Member Of The HARKE GROUP

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FOR GOODNESS...

SHAKE!

SKINCARE WITH A CONSCIENCE by Norman Lowe



LET'S SAVE THE WORLD TOGETHER!

ADD WATER TO UNLEASH THE AWESOME POWERS OF CAPTIAN NORM!

IN A WORLD CONSUMED BY CONSUMABLES...
...AND A GLOBAL WARMING CRISIS

... A HERO CONCEPT WAS BORN



IT WORKED!

BEHOLD MY SUPER-CONCENTRATED, SUPER-ACTIVE, SUPER-LOW ENERGY POWERS!

JUST ADD WATER AND SHAKE TO CREATE YOUR FRESH, CUSTOMISED, LOW ENERGY, LOW CARBON FOOTPRINT AND PLASTIC-FREE FACE CREAM



WOW!!!

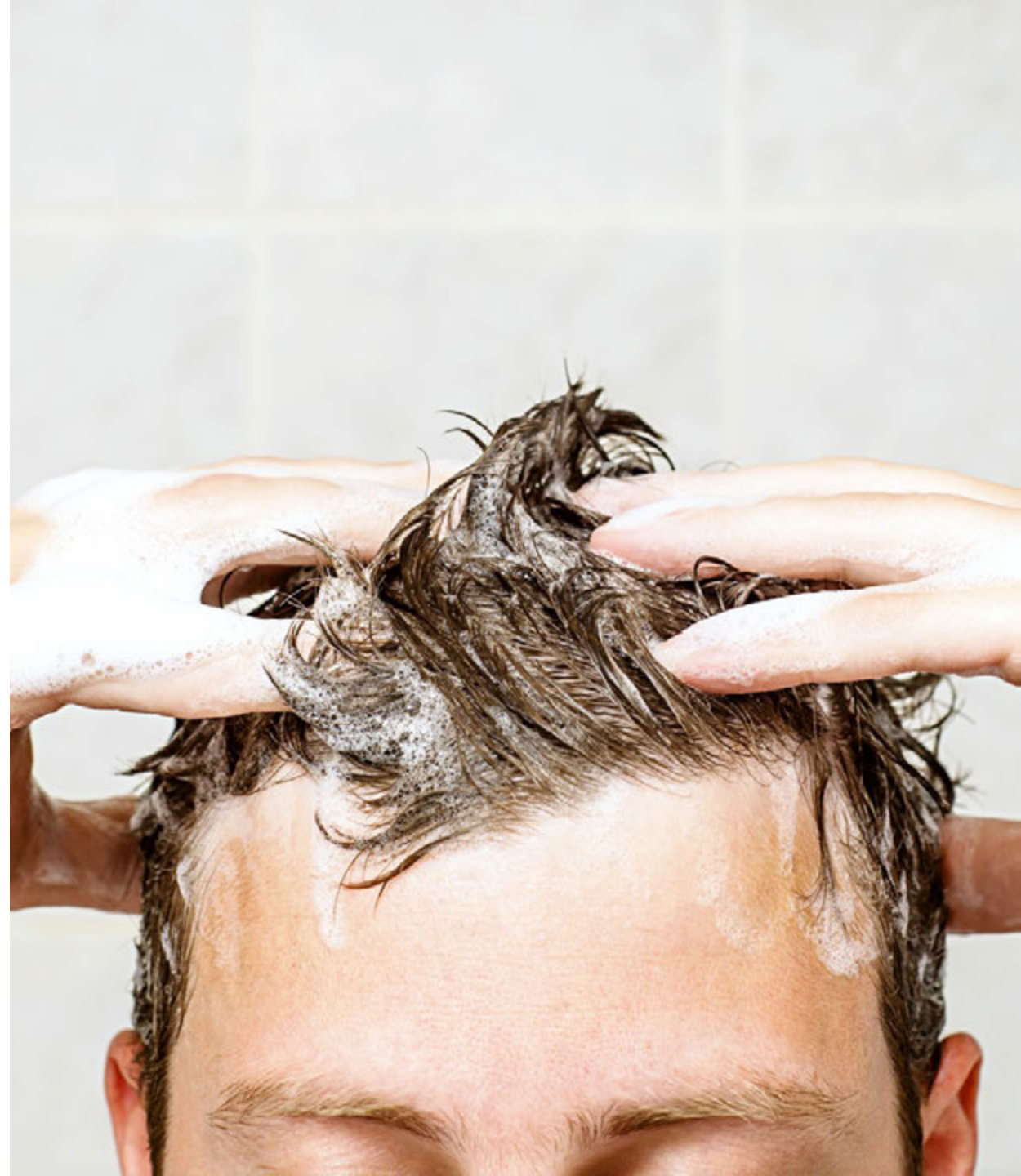
Could you be the hero this planet needs? Visit stand #525 FOR GOODNESS... SHAKE!

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Other challenges

- ❖ Film stability
- ❖ Pack labelling
- ❖ Fragrance
- ❖ Dye stuffs
- ❖ Overall stability



Conclusion





Thank You



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