



BE INSPIRED

with innospec

Home Care, I&I
Formulation Guide

BE INSPIRED

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Home Care, I&I from Innospec offers a diverse range of surfactants, additives, and patented high-performance formulations for use in everyday cleaning products. Our naturally derived and synthetic ingredients find their way into a variety of products from laundry liquids, pods, powders and tablets to manual and automatic dish care, hard surface cleaners, toilet care solutions, and pet care products.

The following pages showcase our hero ingredients in a number of formulations. BE INSPIRED by our ingredients to help make your next unique product come to life.

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Pet Care

FurReal Clean

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FurReal Clean pet home cleaner with probiotics

Hero ingredients

BioSpec ON Conc utilizes a cutting-edge encapsulation technology that swiftly binds and traps odors, ensuring complete odor elimination. It proves to be highly effective against a broad spectrum of odors. BioSpec ON Conc continues to operate over time by colonizing surfaces and breaking down substances that cause unpleasant smells. Following the initial application, it establishes a beneficial microbial environment that continuously works to eliminate the source of odors. This makes it an excellent choice for cleaners used in pet cages and pet fabric detergents.

Formulation properties

FurReal Clean is a mild, vegetable based stain and odor remover that's ready-to-use for pet home cleaning.

Good for formulators:

- Formulated with environmentally friendly, mild surfactants and a highly efficient liquid bacterial concentrate that provides a proven and innovative solution for long-term odor control
- Specifically designed to quickly and safely eliminate all types of odors and stains originating from organic materials
- Surfactant ingredients can be customized to align with the specific claims of the final product

Good for the environment:

- Designed using vegetable based surfactants
- Contains readily biodegradable, low toxicity components that minimize the environmental impact

Good for you:

- Contains no bleach, ammonia, alcohol, or essential oils
- Safe and mild for pets
- Gentle on surfaces, providing a mild yet effective action without corroding materials



How to use

To effectively use, vacuum up any excess fur and physically remove as much solid waste as possible. Apply a natural liquid absorber then spray the FurReal Clean on the affected area. Scrub until clean.



Automatic Dishwash

Four Dry & Shine

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Four Dry & Shine vegetable based rinse aid featuring biosurfactants

Hero ingredients

BioSpec RA developmental* is a 100% vegetable based, four times concentrated rinse aid.

*based on Innospec patent pending

Formulation properties

Four Dry & Shine is a concentrated, 100% vegetable based rinse aid designed for automatic dishwashing and features Sophorolipids. This formulation is developed using Innospec patent pending technology.

Good for formulators:

- Formulated for optimal performance on kitchen ware that are intended for cleaning in dishwashing machines
- Designed to be easily diluted (10–15% solids), and if required, preservatives and fragrances added
- Option with surfactant ingredients in solid form is available

Good for the environment:

- Renewable Carbon Index (RCI) is 100%
- 4x concentrate (46% solids)
- Formulated with environmentally friendly components and biosurfactants
- No aquatic toxicity

Good for you:

- Dilution at 10% solids is corrosive symbols free
- 1,4-dioxane free** and alkoxyates free
- Performance comparable to petrochemical and alkoxyate based rinse aids
- Very effective on both glass and plastics
- Produces minimal filming on glass surfaces



How to use

Dilute 25g of BioSpec RA *developmental** in 75mL of water. Gently swirl the mixture until completely dissolved, then add it to the automatic dishwasher just like you would do with a standard rinse aid.

**1,4-dioxane: below limit of detection of 1 ppm



Hard Surface Care

Clean & Bright

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Clean & Bright scouring gel

Hero ingredients

Aquanate™ LSR 30 exhibits good foaming capabilities even in the presence of grease and oil. Additionally, it is mild on surfaces and boasts anti-corrosion and anti-static properties.

Formulation properties

Clean & Bright is a transparent gel that contains abrasive particles, designed specifically for cleaning hard surfaces.

Good for formulators:

- Surface cleaner designed as a transparent gel containing abrasive particles
- Enhanced aesthetics compared to traditional cleaning pastes
- Ability to suspend scrubbing agents effectively
- Potential to incorporate a significant amount of fragrance

Good for the environment:

- Compatible with environmentally friendly packaging options, including glass and aluminum
- Utilizes ingredients with low aquatic toxicity

Good for you:

- 1,4-dioxane free*
- Neutral pH
- Formulated with surfactants that are mild on both skin and surfaces
- Easy-to-use application
- Produces stable and effective foam even in the presence of fats and oils
- Good emulsification properties
- Provides a pleasant scent that lasts until the end
- Contains a scrubbing agent that improves the mechanical action for removing tough stains



How to use

Take a small amount of the scouring gel using a sponge or a brush. Apply it directly to the dirty surface, scrub thoroughly, and rinse well to achieve a clean finish.

*1,4-dioxane: below limit of detection of 1 ppm



Manual Dishwash

Powder-To-Foam

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Four Concentrate-To-Foam

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Powder-To-Foam AOS based manual dishwash powder

Hero ingredients

NANSA® LSS 495/H (powder) and **NANSA® LSS 495/V (needles)** are ideal for the preparation of solid concentrates for dilution at home, with the needles offering quicker dissolution compared to the powder.

EMPIGEN® BS Ultra Flow* increases detergency and foam boosting properties.

EMPILAN® KR 8 is a powerful degreasing booster, which can be substituted with **BioSpec dried APGs range developmental*** for EO free claims.

*based on Innospec patent pending

Formulation properties

Powder-To-Foam is a super-concentrated manual dishwash powder designed for direct application or for dilution at home.

Good for formulators:

- Surfactant content is approximately 85%
- Suitable for ultra-compaction
- Self-viscosifies when diluted

Good for the environment:

- Compatible with environmentally friendly packaging and water-soluble films
- Free from polymers
- Low aquatic toxicity
- Meets Ecolabel requirements

Good for you:

- 1,4-dioxane free**
- Comparable foaming and cleaning performance to standard manual dishwash liquids
- Easily dilutable in water
- CAPB and nonionic surfactants are essential ingredients that enhance the emulsification properties of AOS for greasy and oily soils



How to use

Can be applied directly to the sponge or the dishes. Alternatively, it can be pre-packed and diluted in water at home.

Dilution instructions to obtain 500mL of manual dishwash liquid with approximately 15% active: Add approximately 90g of Powder-to-Foam to 410mL of warm tap water, gently shake for a few minutes, being mindful to not create excessive foam. Allow the solution to fully dissolve before using.

**1,4-dioxane: below limit of detection of 1 ppm

Four Concentrate-To-Foam vegetable based dilutable concentrate

Hero ingredients

EMPICOL® XHL 151/MB is an easy-to-use performance concentrate that is ideal for the preparation of manual dishwash liquids by dilution at home. It features an optimized blend of primary and secondary surfactants, boasting excellent foaming and degreasing capabilities, and self-viscosifies when added to water.

EMPICOL® LV 840 is utilized for its hydrotropic effects, which assist in optimizing and reducing the viscosity of the concentrate.



Formulation properties

Four Concentrate-To-Foam is a concentrated vegetable based manual dishwash liquid designed for direct application or for dilution at home.

Good for formulators:

- Surfactant content is approximately 35%
- Self-viscosifies when diluted
- Self-preserving when diluted, as it already contains the appropriate amount of preservatives
- Easy to handle

Good for the environment:

- Meets Ecolabel and Ecocert requirements
- Renewable Carbon Index (RCI) is 89%
- Free of polymers
- Low aquatic toxicity

Good for you:

- 1,4-dioxane free* and EO free
- Comparable foaming and cleaning performance to standard manual dishwash liquids
- Easily dilutable in water
- Ready-to-use dilution (approximately 10% solids) is label free

How to use

Can be applied directly to the sponge or the dishes. Alternatively, it can be pre-packed and diluted in water at home.

Dilution instructions to obtain 500mL of manual dishwash liquid with approximately 10% solids: Add approximately 125g of Four Concentrate-to-Foam to 375mL of warm tap water, gently shake for a few minutes, being mindful to not create excessive foam. Allow the solution to fully dissolve before using.

*1,4-dioxane: below limit of detection of 1 ppm

Mousse Boost manual dishwash mousse

Hero ingredients

AOS or AOS-based performance concentrates are ideal for applications that require low viscosity liquids to be sprayed using pumps.

EMPICOL® XHL 140 is an easy-to-use performance concentrate that can prepare manual dishwashing mousses through simple dilution, since it already contains an optimized blend of primary and secondary surfactants that deliver exceptional foaming and degreasing capabilities.

NANSA® LSS 70 developmental* can also be an option for preparing concentrates for dilution, or the **NANSA® LSS 38 series** for ready-to-use liquids. Both can be enhanced with **EMPIGEN® OB**, which serves as a detergent and foam booster.

*based on Innospec patent pending

Formulation properties

Mousse Boost is a ready-to-use manual dishwash mousse that is delivered by spraying pumps, eliminating the need for additional viscosity adjustments.

Good for formulators:

- Formulated with AOS, which is ideal for applications requiring exceptional foaming and low-viscosity liquids
- Option to create super-concentrates that can be diluted at home
- Delivers remarkable foaming characteristics, including aesthetics, texture, and stability

Good for the environment:

- Easy to formulate concentrates for dilution at home, allowing for smaller packaging
- User-friendly dosing that reduces waste
- Available options that meet Ecolabel requirements

Good for you:

- Easy to dilute at home for an effortless experience
- Pleasant texture with excellent foam
- Mild enough to be used as a hand soap
- Sulfate free, EO free and 1,4-dioxane free**



How to use

Can be applied either on the sponge or directly onto dishes, glasses, pots, and pans.

**1,4-dioxane: below limit of detection of 1 ppm



Toilet Care

White & Bright

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Powder Toilet Bomb

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Flush & Shine

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White & Bright vegetable based toilet block featuring probiotics

Hero ingredients

EMPIGEN® BS Ultra Flow* boosts the foaming experience by stabilizing the foam, which allows for longer contact times with the toilet surface.

BioSpec PB40 is a versatile high specification probiotic powder blend that features a multi-strain composition of Bacillus spores, ideal for a wide range of high-demand applications, including grease degradation, odor control and effluent treatment. Performance tests conducted on synthetic organic soil in toilets demonstrate that incorporating probiotics into solid toilet rim-blocks significantly enhances soil removal efficiency.

*based on Innospec patent pending

Formulation properties

White & Bright is a new vegetable based toilet rim block created with probiotics.

Good for formulators:

- New vegetable based formulation designed around free-flowing and easy-to-use surfactant ingredients, as well as concentrated probiotics in powder form
- Creates amazing foaming properties that enhance cleaning effectiveness
- Comparable lifespan to traditional petrochemical-based products
- Super white and odorless, ensuring a clean appearance and fresh scent

Good for the environment:

- Formulated with surfactants that feature a very high Renewable Carbon Index (RCI) and beneficial bacteria that, once used, re-enter the environment to actively support water purification and maintain a natural microbial balance

Good for you:

- Enhanced, long-lasting cleaning because of the addition of probiotics. The probiotics prevent limescale and fats from adhering easily to surfaces, making toilet cleaning easier. Additionally, they are generally less corrosive and abrasive than harsh chemical cleaners, making them safer for toilet bowl materials and plumbing
- Effective odor control for a fresher experience
- Deeper, long-lasting cleaning with the addition of probiotics
- Probiotics effectively eliminate organic contamination, ensuring effective odor management
- Can also be used to clean drains in sinks, showers, and bathtubs



How to use

Hang the block in a cage around the toilet rim. With each flush, it will release a generous and stable foam along with probiotic spores that will germinate in the toilet, ensuring it stays sparkling clean!

Powder Toilet Bomb vegetable based effervescent toilet cleaner

Hero ingredients

EMPIGEN® BS Ultra Flow* boosts the foaming experience by stabilizing the foam, which allows for longer contact times with the toilet surface.

BioSpec PB40 is a versatile high specification probiotic powder blend, ideal for a wide range of high-demand applications, including grease degradation, odor control and effluent treatment.

*based on Innospec patent pending

Formulation properties

Powder Toilet Bomb is an innovative effervescent powder designed for cleaning toilet bowls, featuring a remarkable WOW effect along with probiotics.

Good for formulators:

- New vegetable based formulation with WOW effect and rapid foam generation
- Free-flowing powder
- Creates a creamy, voluminous, and stable foam
- Available in various foam colors and fragrances

Good for the environment:

- Compatible with environmentally friendly packaging options, including water-soluble films and aluminum sachets
- Designed around eco-friendly ingredients

Good for you:

- New WOW effect foam generation speed
- Enhanced foam stability which provides a longer contact time on the toilet
- Deeper, long-lasting cleaning with the addition of probiotics
- Probiotics effectively eliminate organic contamination, ensuring effective odor management
- Can also be used to clean drains in sinks, showers, and bathtubs

How to use

Drop the pouch content into your toilet bowl. Let the powder dissolve and foam. Let sit for a minimum of 30 minutes (the longer it sits, the higher the performance). Flush and enjoy your sparkling, clean toilet!



Flush & Shine toilet bowl whitener

Hero ingredients

EMPIGEN® SRP 4

developmental* provides highly effective organic soil and limescale repellency, which helps maintain a cleaner toilet for a longer time and makes the cleaning process easier.

*based on Innospec patent pending

Formulation properties

Flush & Shine is an acidic toilet bowl cleaner with an organic soil and limescale repellent polymer for a longer lasting cleaning effect.

Good for formulators:

- Utilizes innovative polymer technology that:
 - Is completely soluble in water
 - Provides organic soil and limescale repellency
 - Is compatible with HCl 10% solutions
 - Maintains surface properties even after aging
 - Works well with cationic surfactants (like benzalkonium chloride)
- Incorporates optimized surfactant combinations to create a viscous liquid without the need for rheology modifiers

Good for the environment:

- Designed around readily biodegradable surfactants

Good for you:

- Slightly viscous acidic cleaner can be easily applied homogeneously on the vertical surfaces of the toilet and underneath the rims
- Polymer minimizes soil adhesion, helping keep the toilet cleaner for an extended period with just a simple flush
- Incorporating the polymer into the toilet bowl cleaner will simplify the next cleaning session
- Presence of benzalkonium chloride adds additional biocidal benefits



How to use

Apply the toilet cleaner as close to the toilet rim as possible. Let it sit for five minutes. Scrub and flush.



Laundry Care

Soft & Scent

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Bright & Soft

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Drum-to-Clothes Pods

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Cool Boost Pods

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Soft & Scent fragrance & softening booster

Hero ingredients

Contains a mild fabric softener that helps in retaining the fragrance on the fabric.

Formulation properties

Soft & Scent is an in-wash scent booster and fabric softener for your laundry. It easily molds into appealing shapes, such as pearls and drops, adding a touch of creativity to your wash.

Good for formulators*:

- Easy to prepare and mold into complex and attractive shapes like pearls and drops

Good for the environment:

- Concentrated formula
- Compatible with environmentally friendly packaging
- Formulated using vegetable derived surfactants and potentially vegetable derived solvent
- Designed around readily biodegradable surfactants

Good for you:

- Easy-to-use
- Pleasant texture; not slippery or sweaty
- Provides a strong, long lasting fragrance
- Contains a fabric softener for a more pleasant touch on the skin after washing

How to use

Simply place the booster directly in the washing machine drum at the start of the washing cycle.



**To be customised depending on target solubility and washing cycle time

Drum-to-Clothes Pods powder laundry vegetable based

Hero ingredients

EMPIGEN® BS Ultra Flow*, **BioSpec dried APGs range developmental***, **BioSpec dried Sophorolipids range developmental***, as well as **dried Aquanate™ range**, are all high active and vegetable based, available in solid form, and exhibit very good detergency properties at low temperatures (20 – 25°C).

**based on Innospec patent pending*

Formulation properties

Drum-to-Clothes Pods is a super-concentrated laundry powder designed for direct application. It is effective in low-temperature settings and short wash cycles, and can be packed in water-soluble film or formed into tablets. This product is also compatible with sustainable packaging solutions.

Good for formulators***:

- Developed using vegetable derived primary surfactants in a dried form, along with Innospec's patent-pending dried versions of CAPB, APG, and Sophorolipids. This approach maximizes the active percentage of surfactants while minimizing dosage, all without sacrificing washing efficacy
- Composed of easy-to-use, free-flowing solid ingredients
- Suitable for ultra-compaction

Good for the environment:

- Composed of a high percentage of vegetable derived ingredients
- Compatible with environmentally friendly packaging and water-soluble films
- Concentrated formulation improves sustainability profile during transportation
- Utilizes surfactants like taurates and CAPB to enhance detergency at washing temperatures around 20–25°C and within short washing cycles
- Available options designed around dried Sophorolipids
- Features low aquatic toxicity

Good for you:

- Mild on both skin and fabrics
- 1,4-dioxane free** and EO free
- Outstanding at removing olive oil-based stains from cotton and polycotton fabrics
- Exceptional at removing sebum



How to use

To begin the washing cycle, simply place the tablet or pod directly into the drum. Alternatively, you can accurately measure and pour the free-flowing powder into the washing machine drawer.

**1,4-dioxane: below limit of detection of 1 ppm

***open to joint development with customers to adapt/modify the formulation chassis to their needs

Cool Boost Pods low temperature liquid detergent concentrate

Hero ingredients

EMPICOL® iDS X50-13 is an easy-to-use performance concentrate that boasts impressive detergent properties for low-temperature washing (20 – 25°C) and short wash cycles.

Formulation properties

Cool Boost Pods is a concentrated laundry liquid for low temperatures and short wash cycles that is designed for direct use or can be packed in water-soluble film.

Good for formulators*:

- Low viscosity laundry concentrate featuring optimized surfactant ingredients for effective cleaning
- Formulated with low water content, making it easy to use with high-performance concentrated surfactant systems
- LAS free
- Utilizes mild surfactants that demonstrate improved compatibility with enzymes
- Active ingredients are approximately 61%
- Water content is less than 10%

Good for the environment:

- Contains a high percentage of naturally derived ingredients
- Compatible with water-soluble film
- Concentrated formulation allows for smaller packaging and improved sustainability profile during transportation
- Provides excellent washing capabilities at low temperatures (20 – 25°C) and with short washing cycles (i.e. 30 minutes)

Good for you:

- Formulated with mild surfactants
- Delivers exceptional washing performance at low temperatures, while preserving the fabric and color care
- Maintains consistent cleaning efficacy over time, even on enzymatic stains



How to use

Place the liquid pod directly into the drum and start the washing cycle. Alternatively, you can properly dose the super-concentrated liquid into the washing machine drawer.

*open to joint development with customers to adapt/modify the formulation chassis to their needs. Available SLES free options based on Innospec patent pending technology

Bright & Soft 2-in-1 liquid colour care & softener

Hero ingredients

NANSA® LSS 70 developmental* has good detergency at low temperatures and is compatible with cationic surfactants.

EMPIGEN® S18 brings softening properties, enhances fabric texture, reduces fibers friction, and improves wash durability in textiles. It also helps in retaining the fragrance on the fabrics. It can also improve the emulsifying properties of the detergent. It helps to build formulation viscosity.

EMPIGEN® HBC 40 has graying inhibition, color care benefits, dye transfer inhibition, and mild conditioning behavior. It also improves emulsification, detergency, thickening and foaming.

**based on Innospec patent pending*

Formulation properties

Bright & Soft is a mild laundry liquid detergent designed for cold temperature washing, offering color care and shine along with a fabric softening effect.

Good for formulators:

- Ability to create super-concentrates
- AOS can be easily combined with cationic surfactants to provide fabric softening benefits
- Multifunctional secondary surfactants enhance color care, provide gentle fabric softening, and boost detergency. Additionally, they assist in increasing the viscosity of AOS-based formulations

Good for the environment:

- Effective at low temperatures
- Formulated with readily biodegradable and silicone-free surfactants
- Gentle on fabrics, helping to maintain clothing integrity

Good for you:

- Convenient 2-in-1 formulation that combines a detergent with a softening effect
- Mild on fabrics
- Neutral pH
- Keeps your clothes soft and colors looking bright
- Effective at low temperatures
- 1,4-dioxane free**



How to use

Suitable and safe for use in automatic washing machines or for washing clothes by hand.

**1,4-dioxane: below limit of detection of 1 ppm

Our Commitment to Sustainability

For nearly 30 years we have prepared detailed, open and transparent reports on our sustainability efforts and activities. As a responsible business, we take this task very seriously. Our efforts are then focused on actions that will have the most impact on the long-term sustainability of our business.

Sustainable

Reducing our impact

Supplying safe, sustainable products, designed to meet the needs of society now and in the future, helping our customers achieve their sustainability goals while minimizing environmental impact.

Responsible

Leading by example

Creating customer value and growth while caring for our people, upholding high ethical standards and actively working to reduce our impact on the environment.

Accountable

Transparent reporting

Open disclosure and communication of our sustainability strategy, actions and performance across environmental, social and governance areas with all stakeholders.

International Justice Mission (IJM)

One example of our approach to sustainability is our new partnership with the International Justice Mission (IJM) to combat modern slavery in the Indonesian palm industry.

By targeting the root causes of modern slavery and empowering key stakeholders, the collaboration will strengthen protection for palm oil workers and represents a significant step in the fight against forced labour.

Innospec has a long-term commitment to source palm-based raw materials responsibly. We have been a member of the Roundtable on Sustainable Palm Oil (RSPO) since 2013 and all our facilities that handle palm products carry RSPO Supply Chain certification. Aligning to IJM's mission will help Innospec's Performance Chemicals business to enhance this commitment, and ensure our products comply with the company's NDPE policy.

To find out more about our partnership progress:

<https://innospecsustainability.com/social/key-social-partnerships/fighting-modern-slavery-in-the-palm-oil-industry/>



Innospec has a proven track record in Home Care, I&I. Our ingredients are used in many of the most popular-selling brands on sale in the world today. We are ready to support your next formulation project, so let's talk.

We hold an EcoVadis Gold Rating for our sustainability management system and performance. Achieving gold puts Innospec in the top 5% of all companies rated in our sector globally.

For inspiration, ideas or further information, please contact us:

Innospec Performance Chemicals

www.innospec.com

homecare@innospecinc.com

North America

Tel: +1 704 633 8028

Brazil

Tel: +55 15 3383 9510

Europe, Middle East and Africa

Tel: +44 (0) 151 355 3611

Asia-Pacific

Tel: +65 6336 6286

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