



# EMBEDDING SUSTAINABILITY INTO SURFACTANTS

At Galaxy, sustainability is at the core of everything we do. We are driving change by embedding sustainability into our surfactants, ensuring every product we develop is designed with environmental and social responsibility in mind. From sourcing raw materials to final delivery, we aim to make a positive impact at every step.

Our efforts are the beginning of a ripple effect that spreads across the industry, fostering long-lasting benefits for people and the planet. By reducing our carbon footprint, embracing circular economy principles and innovating in green chemistry, we are committed to creating change that grows and evolves, leaving a meaningful impact on future generations.

## Key Linkages

### Material Topics

- 14 Circular Economy
- 15 Product Sustainability — Lifecycle Assessment Approach
- 17 Efficiency Projects

### Stakeholders Impacted

-  Suppliers
-  Customers

### SDGs



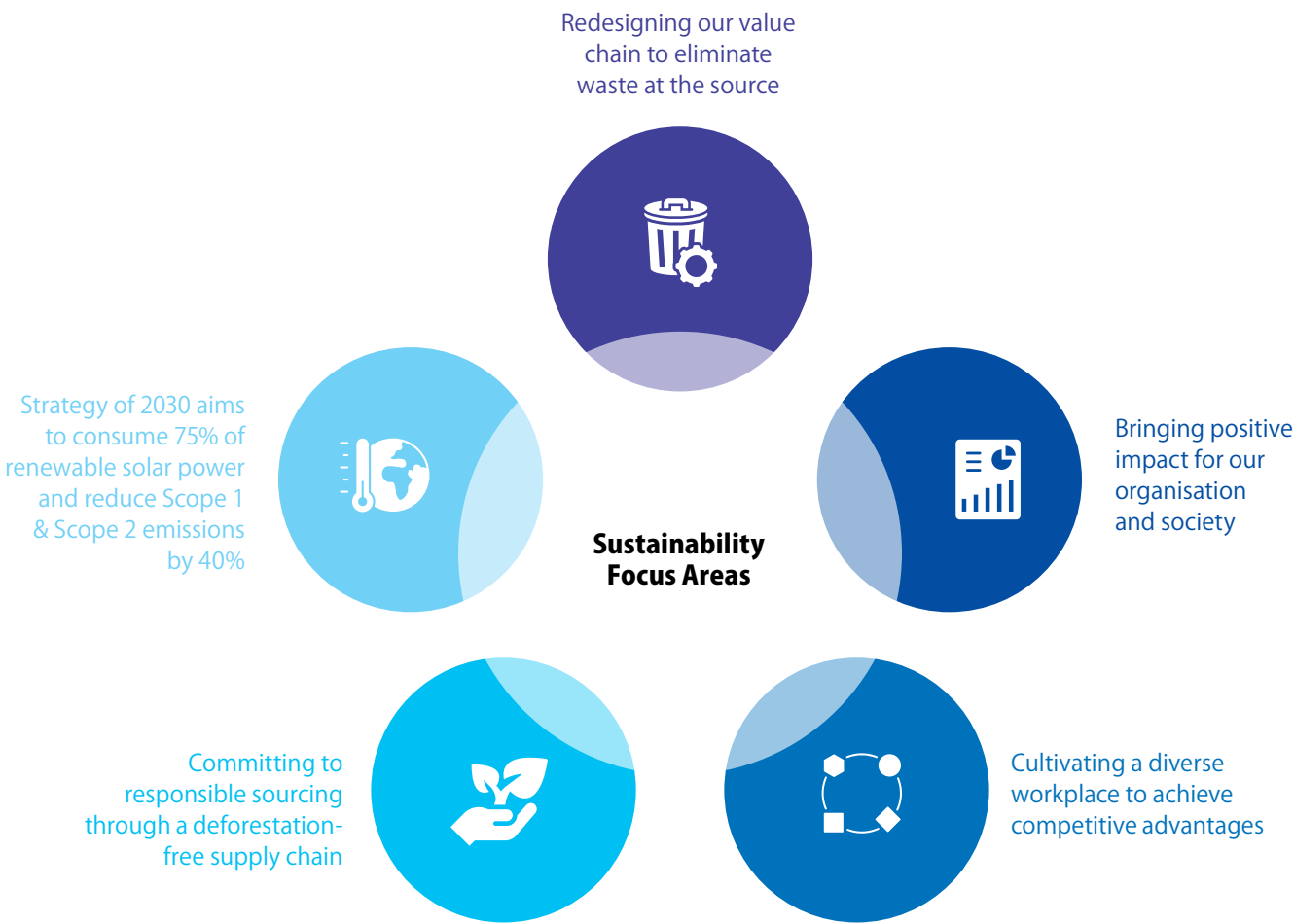
# Embedding Sustainability into Surfactants

## Our Approach to Sustainability

As the surfactant domain evolves, we recognise that even small, deliberate actions can create ripples of positive change. Our approach to sustainability is built on a foundation of responsible sourcing, reducing carbon footprint and ensuring that we develop our products with sustainability at their core. By focusing on renewable materials and minimising waste, we contribute to a more sustainable industry.

Our sustainability efforts extend beyond raw material sourcing to encompass key ESG considerations. We are committed to addressing climate change, managing water resources and driving circular economy practices. Our green supply chain management ensures we embed sustainability throughout the value chain. Fostering diversity and inclusion within our workforce also helps create a more equitable and just environment for all.

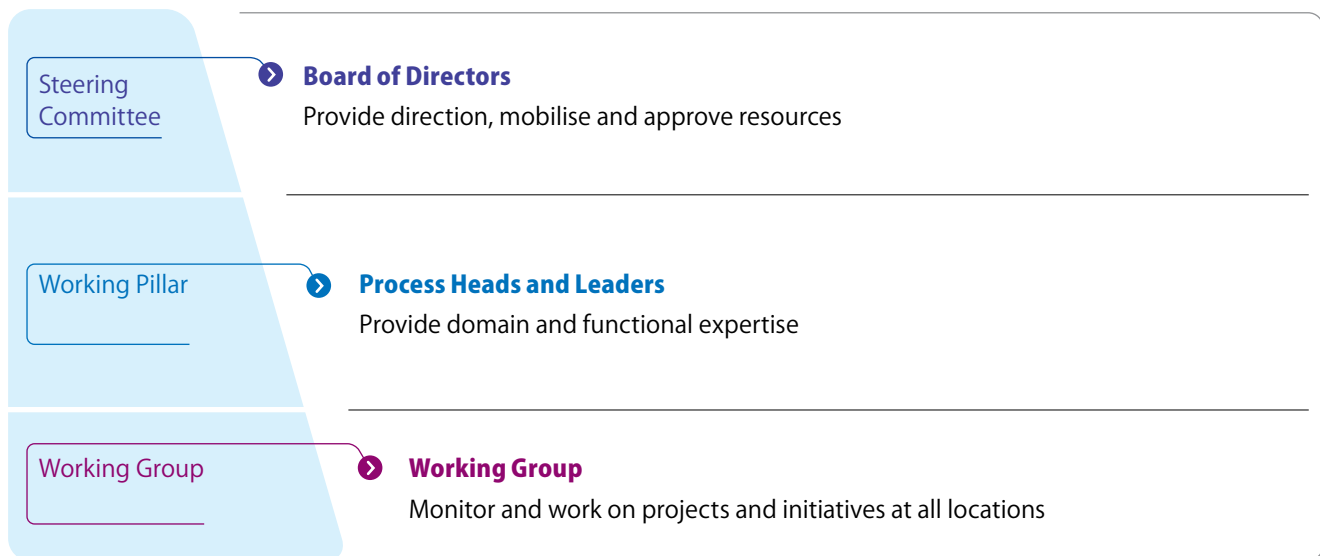
We aim to create a lasting impact through these five focus areas—Climate Change, Circular Economy, Water Stewardship, Green Supply Chain and Diversity and Inclusion. By aligning our sustainability strategy with these critical goals, we ensure that each ripple contributes to a future where environmental and social responsibility are at the heart of our business.



## Sustainability Governance

Sustainability is embedded within our core strategy, supported by a robust governance framework that operates through a three-tier model integrated across the organisational levels.

### Sustainability Governance Framework



#### Steering Committee

The Steering Committee, led by the Board of Directors, defines the strategic direction, mobilises resources and approves key sustainability initiatives. This high-level body ensures sustainability remains central to all decisions, guiding the Company to align with global standards and drive consistent progress.

#### Working Pillar

Process heads and leaders bring domain and functional expertise to implement sustainability practices across all functions. They ensure alignment with organisation-wide sustainability goals while focusing on delivering impactful results and turning strategy into actions that create long-term value.

#### Working Groups

Working Groups execute specific sustainability projects at all locations. By maintaining operational efficiency, and driving local impact and continuous improvement, they ensure the successful implementation of our sustainability initiatives, contributing to our overall goals.

The Sustainability Taskforce, an initiative led by the Sustainability Team, drives key sustainability actions across our operations. While the taskforce provides strategic direction and oversight, factory managers and

operational teams are responsible for on-ground execution. We work collaboratively as single team to advance our goals of a 40% absolute reduction in Scope 1 and 2 emissions, 5% reduction in water withdrawal intensity, 90% waste circularity, a transition to renewable energy and increased employee engagement in sustainability programmes.

# Embedding Sustainability into Surfactants

## Sustainable Innovation

Innovation is the key to sustainable growth for us at Galaxy. We focus on developing impactful products that meet consumer needs while mitigating or reducing the ecological impact of our operations. Our innovation philosophy revolves around creating solutions that minimise our environmental footprint while enhancing product performance and safety.

Environmental and social considerations drive every step of our innovation journey, ensuring we contribute positively to the industry and the planet.

### R&D Highlights

Our Innovation team comprises over 81 enthusiastic and talented industry experts dedicated to driving sustainable innovation. With a keen emphasis on research and development, we aim to create biodegradable, environmentally friendly and effective ingredients that contribute to sustainability. In FY 2024-25, Galaxy filed patent applications of three inventions and have secured grant for 111 patents (cumulative, since 2000) across multiple regions, including the USA, Europe, China, Brazil, Russia, Japan and India. We currently have 29 pending patents at various patent offices.

### Key Focus Areas

- Developing safe, biodegradable ingredients for personal care formulations
- Exploring bio-based solutions through processes such as enzyme catalysis and fermentation
- Creating energy-efficient products for cold processing helps customers reduce their energy consumption



## Collaborations and Training Initiatives

Collaborations with external consultants and research bodies bolster Galaxy's innovation engine. These partnerships help us solve complex technological challenges and bring new ideas to life. These

partnerships strengthen our technological capabilities and accelerate the development of sustainable solutions.

We also prioritise continuous learning and development for our Innovation

team. We attend conferences, exhibitions and internal training programmes to stay updated on the latest research trends, market dynamics and emerging challenges.

## Innovative Product Development

Our products are designed to meet pressing consumer needs, while contributing to environmental sustainability.



### Case Study

## TRI-K's Sustainable R&D Process

Galaxy has been focusing on a Sustainable R&D Process that utilises natural raw ingredients, ensuring responsible sourcing and adopting upcycling practices wherever possible. Sustainable approach minimises the environmental impact while maximising product performance.

At TRI-K, sustainability in the R&D has been a key factor considered at the planning stage itself. A key aspect of TRI-K's sustainability efforts is the Natural Origin Index (NOI) of the products, which reflects the percentage of ingredients sourced from natural origins. For example, Moringa-based formulations in the product line achieve an NOI of 0.99, indicating that 99% of the product's composition comes from natural, renewable sources.

This high NOI is particularly impressive because the upcycled Moringa Seed Cake used in the formulation is a by-product of the food industry, repurposed in an environmentally friendly way. This process also supports ethical sourcing by benefitting the local farming communities in India, with a Profit Sharing Model that promotes fair economic growth.

Similarly, products like Rice Tein NPNF®, derived from upcycled rice grains, have an NOI of 0.98. This product uses rice husks and also takes advantage of cogeneration technology, which recovers energy, making the entire production process more energy-efficient and sustainable.

TRI-K's commitment to sustainable sourcing is exemplified by products

such as Baobab Tein Z NPNF®, made from upcycled Baobab Biomass, a by-product of the baobab fruit and seed oil production. With an NOI of 0.98, this product shows the Company's dedication to using every part of the raw material, reducing waste and promoting the sustainability of the baobab tree, which is an important resource for local economies in Africa.

Through these practices, TRI-K's sustainable R&D process delivers products that meet high performance standards and also contribute to a more sustainable and responsible supply chain. By focusing on upcycling, responsible sourcing and energy-efficient manufacturing, TRI-K is leading the way in environmentally responsible product development in the beauty and personal care industry.

## Embedding Sustainability into Surfactants



### Our Recent Innovations



#### Galseer® DermaGreen

A sustainable, safe, oil-based cleanser for personal care applications, free from harmful effluents and toxic impurities that threaten marine life.



#### Galseer® Flexcon

A solid conditioning bar for hair care, providing colour and UV protection while reducing plastic packaging waste.



#### GalMol KCP

A sustainable, solvent-free emollient for personal care, produced without hazardous solvents or impurities.



#### Hearth® Fabcon

A biodegradable, ester-free fabric softener that enhances fabric feel. It is 76% natural and is available in a cold-processable format.

## Awards and Recognitions for Sustainable Innovation

Awards motivate us to keep pushing the boundaries of innovation, encouraging us to advance towards creating impactful change. They reaffirm our team's hard work and dedication and inspire us to continue developing innovative solutions that contribute to a more sustainable future.

### Notable Awards and Recognitions



#### Best Functional Ingredient Award – Silver (in Cosmetics Global)

For Galseer® DermaGreen, a 100% green oil-soluble surfactant and foaming agent that aligns with our sustainability values.



#### Bronze Innovation Award (Detex Jordan, 2024)

For Hearth® Fabcon, a groundbreaking ester-free fabric conditioning ingredient that provides long-lasting freshness and prevents yellowing.



#### Great Indian Sustainable IP Practice Award (The Great Indian IPR Summit & Award, 2024)

Recognising our commitment to sustainable intellectual property practices and responsible innovation.



#### Best Home Care Innovation Award – Gold (CIE Chennai)

For Hearth® Fabcon, a revolutionary product in the fabric softening category that supports sustainability and enhances fabric quality.

## Embedding Sustainability into Surfactants

Galaxy develops innovative, sustainable solutions, by integrating sustainability at every step of the product lifecycle, right from raw material sourcing to the final finished product. All our products are designed to enhance user experience while reducing environmental impact and we achieve this by keeping both sustainability and the needs of consumers at the core of our operations.

### Key Focus Areas

#### Sustainable Raw Materials

Wherever possible and available we carefully select raw materials that are biodegradable, non-toxic and responsibly sourced. Ensuring sustainable sourcing creates a positive ripple effect, reducing environmental degradation and supporting biodiversity.

#### Energy-efficient Products

We design products that promote energy efficiency, reducing energy consumption during usage. These products enable consumers to lower their environmental footprint.

#### Green Chemistry

Emphasising bio-based solutions, we explore processes like enzyme catalysis and fermentation, which offer more sustainable alternatives to traditional chemical processes.

### Green Chemistry at Galaxy

Green chemistry is deeply embedded in our approach to product development and manufacturing. We actively apply green chemistry principles to reduce waste, enhance biodegradability and minimise the use of hazardous substances. By using renewable feedstocks and energy-efficient processes, we create surfactants that are safer for both people and the planet. These principles guide our efforts across traceable palm-based ingredients, real-time process monitoring and product design that supports our sustainability goals and meets the rising demand for eco-conscious formulations.

A significant breakthrough in this space is our patented Green Catalyst Process for manufacturing Fatty Acid Chlorides—a key intermediate in our amino acid surfactant portfolio. This innovation uses the final product itself as a catalyst, eliminating the need for distillation and waste disposal, thereby reducing

environmental impact and improving cost efficiency. Applied across Glycinates, Sarcosinates, Taurates and Glutamates, this innovation exemplifies how we continue to engineer sustainable chemistry solutions while challenging conventional practices in the global surfactant industry.

Green chemistry principles applied across our amino acid surfactant portfolio

Our patented Green Catalyst Process eliminates distillation and waste in Fatty Acid Chloride production





## Case Study

# Extending Shelf Life for Sustainable Product Management

## The Challenge

We faced a recurring challenge with the short shelf life of key products, which led to frequent recertifications, limited export opportunities and unnecessary waste. For example, a product group initially had a six-month shelf life, leaving insufficient time for export after dispatch. Similarly, Product Y and Product Z had a 12-month shelf life, which created supply chain inefficiencies. To minimise waste and improve logistics, we needed a scientific approach to extend product longevity without compromising quality.

## The Solution

We conducted a stability study to assess pH levels, storage conditions and packaging. For Product X, increasing the pH count extended its shelf life from six to twelve months, reducing the need for frequent recertification. Stability trials for Product Y and Product Z showed that extending their shelf life from 12 to 18 months was achievable without compromising quality. To strengthen our supply chain resilience, we also improved the stability of other products.

## The Impact

**Reduced Re-certification Needs:** Less frequent revalidation saved time and resources.

**Increased Export Viability:** A longer shelf life has made global distribution more feasible.

**Minimised Waste Generation:** We significantly reduced product disposal and reprocessing, supporting our sustainability goals.

**Enhanced Customer Satisfaction:** Customers benefitted from better inventory management and smoother supply chain operations.



## Embedding Sustainability into Surfactants

### Sustainable Manufacturing

Galaxy’s commitment to sustainability goes beyond product development and innovation. We continuously monitor and upgrade our manufacturing processes to minimise environmental impact and optimise resource utilisation.

In FY 2024-25, we continued to invest in quality improvement programmes such as Total Productive Maintenance (TPM) and quality circles, engaging employees in process enhancements that boost quality and sustainability.

#### Total Productive Maintenance (TPM)

Through the implementation of TPM practices, we ensure optimal equipment performance and minimise downtime. Proactive maintenance and preventative measures help us extend equipment lifespan, reduce energy consumption and lower our carbon footprint. The adoption of Kaizen, a philosophy of continuous, incremental improvements, has allowed us to drive consistent changes that lead to significant advancements in sustainability.

#### PARIVARTAN WESAP

Through PARIVARTAN Waste Elimination Suggestion Award Programme, we encourage employee-led innovation in sustainability. The programme recognises and rewards ideas that contribute to waste reduction, resource efficiency and overall environmental performance at our manufacturing sites.

#### Cost Efficiency Projects (CEP)

CEP is our plant-level initiative aimed at improving processes and reducing operational waste. These small-scale, targeted projects foster a culture of practical problem-solving and continuous environmental improvement.

#### PDCA (Plan, Do, Check, Act)

This structured approach enables us to drive improvements in a systematic and measurable way. PDCA supports consistency, learning and alignment with our quality and sustainability goals.

#### Right the First Time (RTFT)

Our RTFT philosophy underpins our commitment to precision and accountability in operations. By aiming to get processes right from the outset, we reduce errors, minimise waste and maintain high product quality with lower environmental impact.

### Improving Processing Efficiency at TRI-K

#### Challenge

TRI-K’s enzymatically hydrolysed proteins production process traditionally included an ageing step after hydrolysis. During this step, batches were removed from the tank and stored in IBC totes for 10+ days. The ageing process, combined with older equipment, resulted in inefficiencies and increased operational costs. Given the advancements in hydrolysis and filtration technologies, TRI-K focused on determining if this ageing step was still necessary.

#### Solution

In line with TRI-K’s strategy to modernise operations, the Company began replacing 50+ year-old reactors with more efficient, modern models. The newly installed tanks, equipped with insulation, significantly reduced heat loss, improving heating and cooling efficiency. This improvement decreased the amount of steam required.

In addition to the reactor upgrades, the removal of the ageing step has led to improved processing efficiency, reducing the time required for production and lowering operational costs.



### Impact

Operations, including the elimination of the ageing step.

Following annual reductions were achieved:

### Electricity

1,887 kWh of energy saved annually, contributing to a 460 kg reduction in CO<sub>2</sub> emissions.

### Natural Gas

The removal of the ageing step and installation of new reactors led to a 510 SCM reduction in natural gas use annually, avoiding 980 kg of CO<sub>2</sub> emissions.

### Water Usage

Water usage was reduced by 110 kilolitres annually, resulting in significant environmental savings.

## Quality Assurance

Our quality assurance processes seek to minimise waste, optimise resource use and ensure that all products are safe, effective and environmentally responsible. Our key quality practices comprise:

### Automated Testing

We implement automated testing systems to reduce chemical usage and improve testing efficiency. This automation helps streamline quality checks, saving both time and resources.

### Process Optimisation

We focus on continually improving our processes to enhance product quality while reducing waste and energy consumption. By minimising impurities and improving yields, we maximise the sustainability of our products.



## ISO 9001 Certification

Our commitment to quality is reinforced by our ISO 9001 certification, ensuring that our processes meet global standards of quality. This certification demonstrates our dedication to continuous improvement and customer satisfaction.

## Sustainability Awards

Recognition for maintaining exceptional standards in quality practices, including the Johnson & Johnson Quality Award for zero complaints over three consecutive years.