Sparkle™

Sustainable, Plastic-Free and Compostable

Period Care Products

Agenda

- Problem
- Solution
- Sparkle Products
- Innovation
- Our Team
- Infrastructure

Problem – Plastic Pollution

- Globally, around **300 billion** period products are used every year
- Most conventional pads contain up to **90% plastic**
- Do not biodegrade for around **600-800 years**

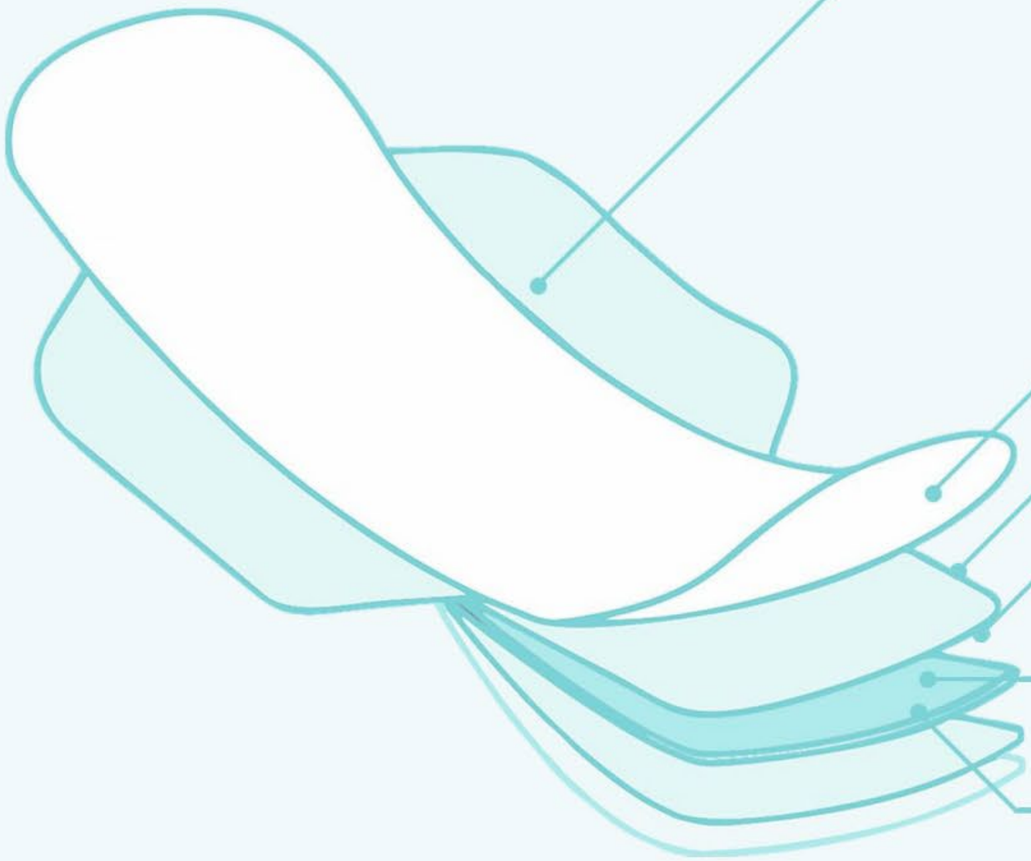
15 billion
Sanitary pads are discarded every year in India

20 billion
Period products are discarded every year in USA

- In **India** alone, around **150,000 tons** of sanitary pad waste is generated every year
- **Globally**, **millions of tons** of non-biodegardable period product waste is generated every year

Problem – Plastic Pollution

Different layers of a
Conventional sanitary pad



TOP LAYER
Perforated plastic sheet
(PP, PE)

SYNTHETIC CHEMICALS
Artificial perfumes,
Heavy metal dyes

TRANSFER LAYER
Synthetic fibers or
Cellulose based pulp

ABSORBENT CORE
Sodium polyacrylate (SAP)
Derived from crude oil

ADHESIVE
Hot melt glue

BOTTOM LAYER
Polyethylene (PE)
Petrochemical based

RELEASE PAPER
Silicone coated paper

Misleading words:
Cottony, Cotton-feel, Cottony-soft, Cotton-like (These are PP synthetic materials that do not contain cotton fibres).

Misleading words:
Absorbent Gel, Pearls, Nano Gel, Gel Technology, Micro-crystals, Micro-particles or other similar combinations

Problem – Current Period Products Disposal Mechanisms

Landfill

- **Lack of infrastructure** for organised **segregation, collection, disposal** and transportation networks
- Remain unchanged in **landfill** for around 600-800 years
- Get picked up by birds and animals, which in turn leads to the **pollution of land and water**

Incinerator

- Incinerating conventional pads that contain **plastic and harsh chemicals** can release **toxic fumes** into the environment

Oceans

- In rural area, used sanitary pads are **buried in a pit, burnt in the open** or disposed of in **ponds or rivers which end up in oceans**

Problem – Health Aspect

Plastic

- The problem with plastic is that it's not breathable which can create sweaty and humid environment near your most intimate areas.

Artificial Perfumes

- Artificial fragrances can make your sensitive skin feel itchy and uncomfortable.

Synthetic Superabsorbents (SAP)

- Traditional SAPs are made from sodium polyacrylate polymers which are derived from petrochemical by-products

- Pads filled with a lot of SAPs with unnecessarily high-absorbency capacities can dry out your skin by wicking moisture from it, causing irritation.

Solution – Sparkle Plastic-Free Pads

Better for your body

No harsh chemicals or fragrances that may cause skin irritations or rashes.

Better for the planet

Plastic-free pads made with sustainable, compostable and biodegradable ingredients.

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 86%
FP

USDA Certified Biobased
Sanitary Pads

Sparkle - Better For The Planet

Whether Sparkle pads end up in a **landfill**, are **incinerated** or even end up in your **home compost pit**, they are a **more sustainable alternative** compared to conventional pads

Sparkle - Better For The Planet

Biodegradable and Compostable pads

- Sparkle pads are commercially compostable according to EN 13432.
- Capable of breaking down into organic matter in 4-6 months under industrial composting conditions.
- It is also possible to compost Sparkle pads at home.

A brief summary of the EN 13432 requirements for 'compostable' materials:

- Biodegradation of 90% of the materials should occur in a commercial composting unit within 180 days
- No more than 10% of material fragments should be larger than 2mm after 12 weeks
- Leftover compost should be free of toxins
- There should not be any adverse impacts on the ability of the compost to support plant growth

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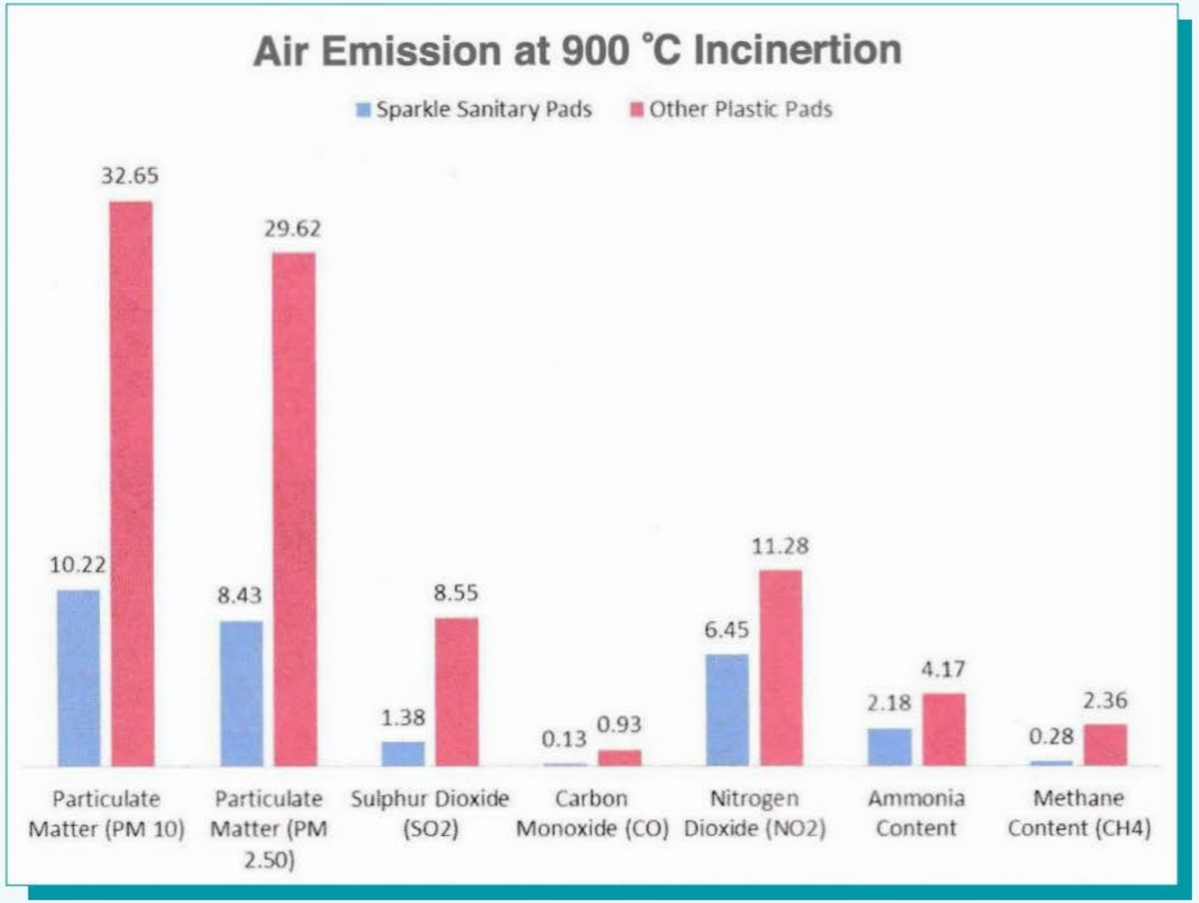
Incineration studies conducted by an independent lab

Incinerating "**Conventional Plastic Pads**" at 900 degree C resulted in **520% more Sulphur Dioxide(S02), 615% more Carbon Monoxide(C0), 743% more Methane Content(CH4)** and 75% more Nitrogen Dioxide(NO2) than that of "**Sparkle Sanitary Pads**".



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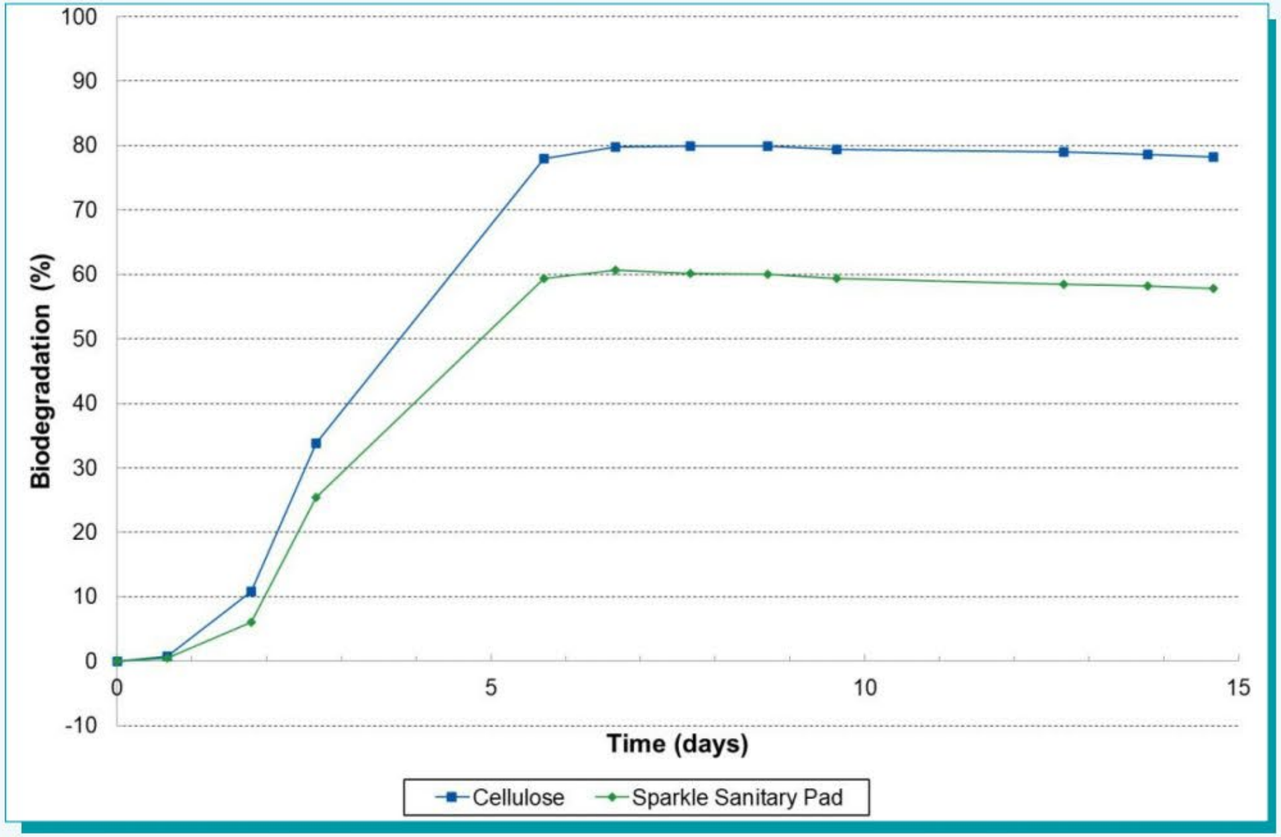
Landfill biodegradation studies (ASTM D5511 as accelerated landfill simulation)

Sparkle pads reached relative biodegradation of **73.8%** when compared to positive reference, cellulose, and absolute biodegradation of **57.8%** ± 2.4% after 15 days of incubation, which represents around **one year in a landfill.**

Conventional pads that contain up to 90% plastic **do not biodegrade** for over **500 years in landfills.**



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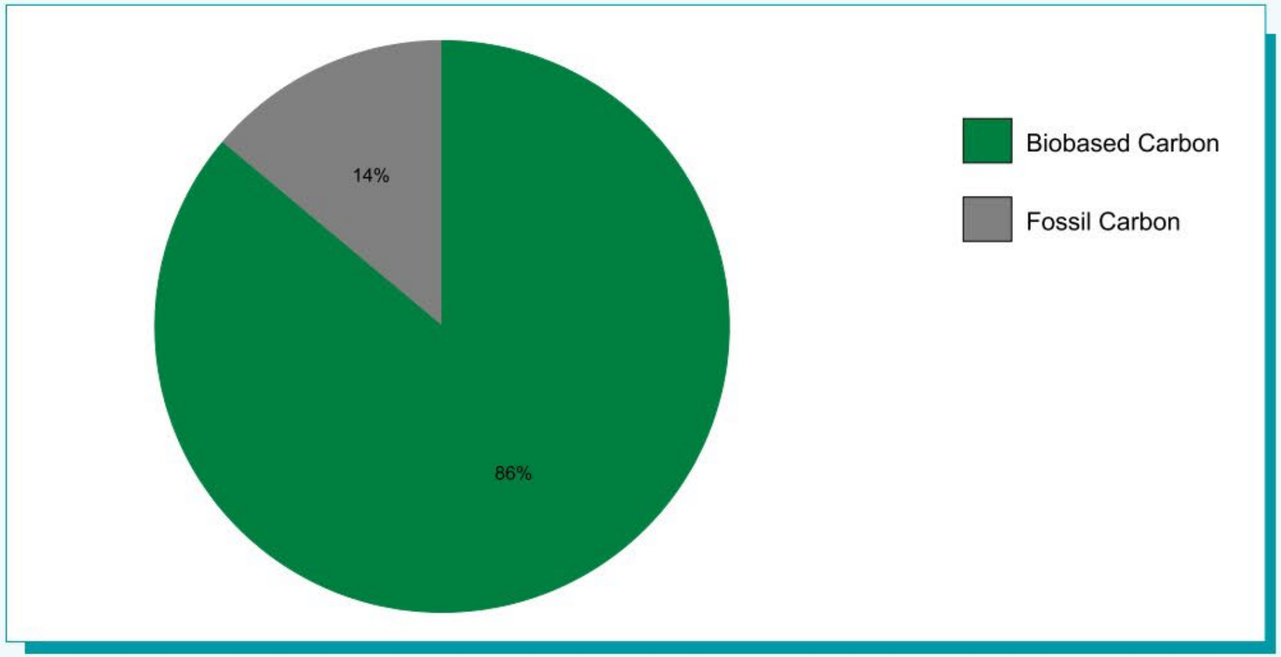
% Biobased Carbon Content

ASTM D6866-22 Method B (AMS) TOC

Sparkle pads contain **86 % Biobased Carbon Content** (as a fraction of total organic carbon)



Different Layers of Sparkle Pads

Layers of
Sparkle pads

TOP LAYER

OEKO-TEX and FSC certified bamboo fibre viscose

ABSORBENT CORE

FSC certified Elemental Chlorine Free (ECF) cellulose

BOTTOM LAYER

Made from TÜV Austria certified biodegradable and home-compostable materials

TOP LAYER

Perforated plastic sheet (polypropylene, polyethylene) petrochemical by-product

ABSORBENT CORE

Sodium polyacrylate (SAP) derived from crude oil

BOTTOM LAYER

Polyethylene (PE) petrochemical by-product

Layers of
Conventional Pads

Innovation

Our **R&D centre** is equipped with **eight departments**.

Sustainable Ingredients

Four departments are devoted exclusively to making our ingredients and products as sustainable as possible:

- Fibre Technology
- Superabsorbent Biopolymers
- Bioplastics
- Nonwovens

Innovation - Sustainable Ingredients

Fibre Technology

Developing fluff pulp from agro-based non-wood fibres

Biopolymers

Developing biodegradable superabsorbent hydrogels

Bio-plastics

Developing biodegradable and compostable granules and films

Nonwovens

Developing sustainable, biodegradable and compostable nonwovens

Innovation - Responsible Disposal

Responsible Disposal

Three departments focus primarily on responsible disposable methods and explore how Sparkle pads behave in different environmental conditions at the end of their life-cycle

- Biodegradation
- Biotech
- Environment

Innovation - Responsible Disposal

Biodegradation

Evaluating biodegradation, compostability and eco-toxicity through standardized lab tests

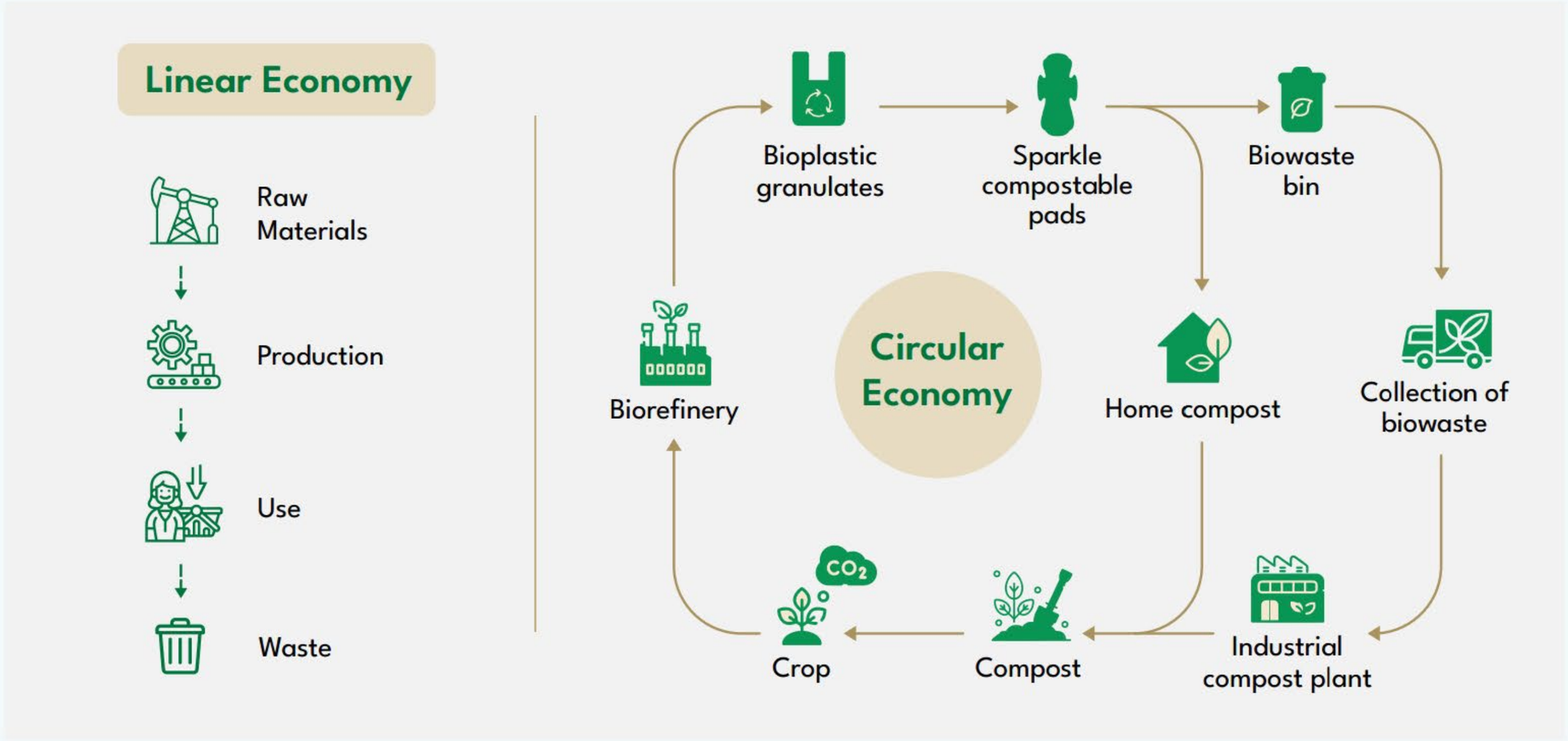
Biotech

Evaluating methods for the safe composting of biodegradable products in different environments

Environment

Evaluating product end-of-life scenarios in landfill environments and incinerators

Sparkle - Better For The Planet



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GreenCycle Program

Our Vision

To create a circular economy by not only developing sustainable, biodegradable and compostable products, but by also designing effective waste management infrastructure to reduce waste going to landfills.

It's no secret that conventional absorbent hygiene products are chock-full of non-biodegradable petrochemical by-products. These are simply not sustainable in the long run as they generate thousands of tons of waste which remains unchanged in landfills for over 500 years.

We are strong advocates for the newly-emerging circular economy. Thus, we developed the GreenCycle Program to transition from the linear economy of 'take-make-waste' to our very own circular ecosystem.

Sparkle - Better For The Planet

We focus on the entire product life-cycle.

Create

We develop high-performing and quality sustainable products made from biodegradable and compostable ingredients

Collect

We pick up the used products straight from the consumers' residences without compromising on convenience or hygiene parameters

Compost

We compost used products in an industrial compost facility so that they can safely go back to nature, instead of ending up in landfills or incinerators

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GreenCycle Pilot Project

As the first step towards making the large-scale composting of absorbent hygiene products a reality, we started the GreenCycle Pilot Project in Surat, Gujarat, India. With this pilot project, we aim to not only reduce the amount of waste that ends up in landfills and incinerators, but also prove that industrial composting of absorbent hygiene products is possible.

As a part of our pilot project, 100 menstruators participated in the GreenCycle Program. Once a month, we collected used sanitary pads and transported them to our industrial composting unit.

At our pilot plant, we use in-vessel hot composting machines that optimize composting conditions such as temperature, turning, aeration, etc. to allow microorganisms to thrive and accelerate the natural process of decomposition.

Infrastructure

- **50,000 square feet** manufacturing facility
- Fully automatic **Italian sanitary pad production line**
- Over **1 million sustainable sanitary pads per day** production capacity
- **Customized production line** that can process sustainable, biodegradable and compostable ingredients
- **US FDA** registered, **ISO 13485** and **ISO 9001** certified manufacturing facility

Team

Hetal Virani

Co-Founder

Hetal leads planning and implementation as well as finance management, legal and operation related activities.

- ✓ C.A. from the Institute of Chartered Accountants of India.
- ✓ C.W.A. from the Institute of Cost Accountants of India.
- ✓ C.S. from the Institute of Company Secretaries of India.
- ✓ Bachelor of Law and Bachelor of Commerce from Veer Narmad South Gujarat University, India.

Chirag Virani

Co-Founder

Chirag guides Sparkle in the areas of R&D, product design, manufacturing and business development.

- ✓ Mechanical Engineering from McMaster University, Canada.
- ✓ Master in Business Administration from Ryerson University, Canada.
- ✓ Post-graduation program from UC-Berkeley, USA.

Sparkle™

You're
born to
Shine™