SMASH PACKAGING
Our customers are solving the toughest problems in Life Science and they need our products quickly, efficiently and safely. That means we need high quality and performance packaging and we are constantly working to ensure we deliver our products to our customers to meet their requirements such as sterile environments, temperature control conditions and the protection of our products as they traverse the world.

We also know sustainability is vital to our customers. Almost 90% of those we surveyed consider sustainability important. We take this feedback seriously and we want to make sure that our packaging is sustainable to help both our business and our customers’ businesses to reduce their environmental impacts and costs. This objective drives our ambition to tackle these challenges across three areas:

• Excess packaging requires more resources than needed, leads to increased logistics and is annoying to dispose of
• Sourcing packaging materials from non-sustainable sources may contribute to global issues such as deforestation
• Use of packaging not compatible with recycling or not properly labeled leads to excess waste to landfills and to the environment

The SMASH Packaging Plan is the continued realization of our commitment to do business more sustainably throughout the life cycle of our products. Our four-year program will lead us to use less packaging, select more sustainable materials and make it easier to recycle.

Feel free to let us know how we’re doing and watch for our regular progress updates at sial.com/cr.

Chris Ross
Interim Sector Head of Life Science and Head of Integrated Supply Chain Operations
The SMASH Packaging Plan is our four-year approach to drive improvement in the sustainability of our packaging to match our life science leading product sustainability framework. We are setting new standards and goals to SHRINK, SECURE, SWITCH, and SAVE packaging while still meeting the required performances requirements and transit safety regulations.

**PILLAR**

**OPTIMIZE RESOURCES**

- Shrink: Reduce amount of packaging
  - New product packaging aligned with our standards for weight and volume
  - 20 key improvement projects for existing packaging
  - 20% reduction of air space in distribution boxes

**MORE SUSTAINABLE MATERIALS**

- Secure: Achieve zero deforestation
  - New product packaging aligned with our zero deforestation standards
  - 90% of existing packaging aligned with our zero deforestation standards
  - 100% of packaging from deforestation-risk countries certified sustainably sourced

- Switch: Improve plastic sustainability
  - New product packaging aligned with our plastic sustainability standards
  - 20 improvement projects to replace existing plastic packaging by more sustainable solutions
  - 20% reduction of expanded polystyrene (EPS) use

- Save: Maximize recycling
  - New product packaging aligned with our standards for recyclability
  - 100% of fiber-based packaging not compatible with recycling, replaced
  - 100% of products with packaging recycling / disposal guidance

**2022 TARGETS**
OPTIMIZE RESOURCES

Goal 1: Shrink

REDUCE AMOUNT OF PACKAGING

What does it mean?
We will reduce the size and weight of the packaging we use to pack and safely ship our products.

2022 TARGETS

New product packaging aligned with our standards for weight and volume
- Optimize packaging weight and volume
- Investigate reusable or bulk packaging solutions
- Avoid requirement of specific distribution packaging

Actions we’ll take include:
- Implement new sustainability standards and guidelines during new product packaging design
- Provide training and support to development teams
- Assess and ensure alignment of sustainability characteristics of new product packaging

20 key improvement projects for existing packaging including:
- Elimination of unnecessary packaging components
- Substitution of materials with lighter ones
- Optimization of internal packaging
- Development of bulk packaging solutions

Actions we’ll take include:
- Identify and prioritize key opportunities for improvement
- Develop clear action plans for improvement with internal and external stakeholders
- Share best practice case studies to repeat and improve

20% reduction of air space in distribution boxes
- Adjustment of box sizes to better suit common orders
- Optimization of computerized pack-out configuration system
- New processes and training to minimize unused airspace in boxes

Actions we’ll take include:
- Identify and prioritize key opportunities for improvement
- Develop clear action plans for improvement with internal and external stakeholders
- Share best practice case studies to repeat and improve
More Sustainable Materials

Goal 2: Secure

Achieve Zero Deforestation

What does it mean?
We will ensure that the wood and fiber-based packaging materials that we use to pack and ship our products do not contribute to deforestation. We will focus on demonstrating responsible sourcing and increasing recycled content.

2022 Targets

New product packaging aligned with our zero deforestation standards
- Use of certified wood and fiber-based packaging materials
- Demonstration of responsible sourcing
- Maximization of recycled content

Actions we’ll take include:
- Implement new sustainability standards and guidelines during new product packaging design
- Provide training and support to development teams
- Assess and ensure alignment of sustainability characteristics of new product packaging

90% of existing packaging aligned with our zero deforestation standards
- Use of certified wood and fiber-based packaging materials
- Demonstration of responsible sourcing
- Maximization of recycled content

Actions we’ll take include:
- Survey our supply chain to identify sources and characteristics of wood and fiber-based packaging
- Collaborate with our vendors to demonstrate and increase responsible sourcing
- Identify and prioritize key opportunities for increasing recycled content of existing packaging

100% of wood fibers from deforestation-risk countries certified sustainably sourced
- Materials are certified (FSC, PEFC or SFI) with chain of custody

Actions we’ll take include:
- Survey our supply chain to identify sources and characteristics of wood and fiber-based packaging
- Develop plan to ensure that all the wood and fiber-based packaging materials coming from deforestation-risk countries are certified sustainably sourced with chain of custody
Goal 3: Switch

Improve Plastic Sustainability

What does it mean?
We will improve sustainability of the plastic materials used in packaging applications, including increase use of materials with lower environmental impacts and reduce materials of concern.

2022 Targets

New product packaging aligned with our plastic sustainability standards
• Use of alternative plastics with lower impacts
• Use of recycled content
• Use of renewable content
• No use of materials of concern

Actions we’ll take include:
• Implement new sustainability standards and guidelines during new product packaging design
• Provide training and support to development teams
• Assess and ensure alignment of sustainability characteristics of new product packaging

20 improvement projects to replace existing plastic packaging by more sustainable solutions including:
• Replacement of plastics with ones with lower impacts
• Replacement of conventional plastic by material produced from renewable materials
• Introduction of recycled content

Actions we’ll take include:
• Identify and prioritize key opportunities for improvement of plastic packaging
• Develop clear action plans for improvement with internal and external stakeholders
• Share best practice case studies to repeat and improve

20% reduction of expanded polystyrene (EPS) use
• Replacement of EPS used in secondary and distribution packaging in non-reusable applications
• Minimize introduction of new packaging made of EPS

Actions we’ll take include:
• Define process to measure and track use of EPS
• Identify and prioritize key opportunities for replacement of EPS
• Develop clear action plans for replacement of EPS packaging items with internal and external stakeholders
**DESIGN FOR CIRCULAR ECONOMY**

**Goal 4: Save**

**MAXIMIZE RECYCLING**

**What does it mean?**
We will reduce the amount of non-recyclable materials we use, reduce packaging techniques that make it difficult to recycle and improve packaging labelling and education.

---

### 2022 TARGETS

**New product packaging aligned with our standards for recyclability**
- Avoid use of any material or treatments that interfere with recycling of fiber-based materials
- Avoid use of multi-layer plastic or any plastic type that is incompatible with recycling

**Actions we’ll take include:**
- Implement new sustainability standards and guidelines during new product packaging design
- Provide training and support to development teams
- Assess and ensure alignment of sustainability characteristics of new product packaging

**Replace 100% of fiber-based packaging not compatible with recycling**
- Replacement of any specific treatments that interfere with recycling
- Replacement of multi-layer packaging materials
- Replacement of hot-melt adhesives

**Actions we’ll take include:**
- Identify fiber-based packaging items not compatible with recycling
- Develop plan for replacement with internal and external stakeholders

**100% of products with packaging recycling / disposal guidance**
- Provide recycling / disposal guidance for any primary, secondary and distribution packaging received by our customers

**Actions we’ll take include:**
- Develop reference document with recycling / disposal guidance for all our packaging material types
- Develop plan to communicate effectively packaging recycling / disposal guidance to customers
Our four-year SMASH Packaging Plan is our approach to drive improvement in the sustainability of our packaging.

Below are the top-level measurements by which we track our progress toward our 2022 targets. See more details on our SMASH Packaging webpage.

### Optimization of Resources

**Shrink**
Reduce amount of packaging

- New product packaging aligned with our standards and transit regulations for weight and volume

**Secure**
Achieve zero deforestation

- New product packaging aligned with our zero deforestation Standards

**Switch**
Improve plastic sustainability

- New product packaging aligned with our plastic sustainability standards

**Save**
Maximize recycling

- New product packaging aligned with our standards for Recyclability

### More Sustainable Materials

Enhancement of our Design for Sustainability framework in consideration of our new packaging sustainability standards. Working on the implementation with adequate resources to help our development teams develop more sustainable product packaging solutions.

- 20 key improvement projects for existing packaging
- 5 product and distribution packaging improvement projects resulting in a total annual reduction of 100+ tons.
- 20% more full distribution cartons
- Several local initiatives. Global improvement plan in development.
- 90% of existing packaging aligned with our zero deforestation standards
- 100% of packaging from deforestation-risk countries certified sustainably sourced
- First deforestation survey conducted. 66% of packaging (sourced directly) aligned with our zero deforestation standards. 1,000 tons of corrugated and paperboard materials in the process of getting certification.
- 20 improvement projects to replace existing plastic packaging by more sustainable solutions
- Plastic footprint project in progress to identify and prioritize improvement projects.
- Reduce expanded polystyrene (EPS) use by 20% by more sustainable solutions
- 3M molded pulp inserts used annually in replacement of EPS for glass bottle inserts. Pilot implementation of a greener cooler certified recyclable alongside corrugated materials.

### Design for Circular Economy

- Replace 100% of fiber-based Packaging not compatible with Recycling
- Identification done through deforestation survey. Working on finding replacement solutions.
- Clear recycling / disposal communications for 100% of products Recycling
- Active for some products. Global initiative to be started.

### Our 2022 Targets & Progress

- 20% more full distribution cartons
- Reduce expanded polystyrene (EPS) use by 20% by more sustainable solutions
- Clear recycling / disposal communications for 100% of products Recycling
- Active for some products. Global initiative to be started.