



Nestlé Good food, Good life



The Rules of Sustainable Packaging

Vevey, Switzerland, November 2021

Public version

Our Way Forward

The purpose of this document is to provide a comprehensive set of the most up-to-date standards, *THE RULES OF SUSTAINABLE PACKAGING*, that are driving our sustainable packaging transformation and helping to achieve our commitment that 100% of our packaging will be recyclable or reusable by 2025.

This document provides an overview of:

- Our packaging vision and commitments
- 'The Golden Rules', which guide current & future packaging design
- 'The Negative List', explaining the materials to be removed and by when.

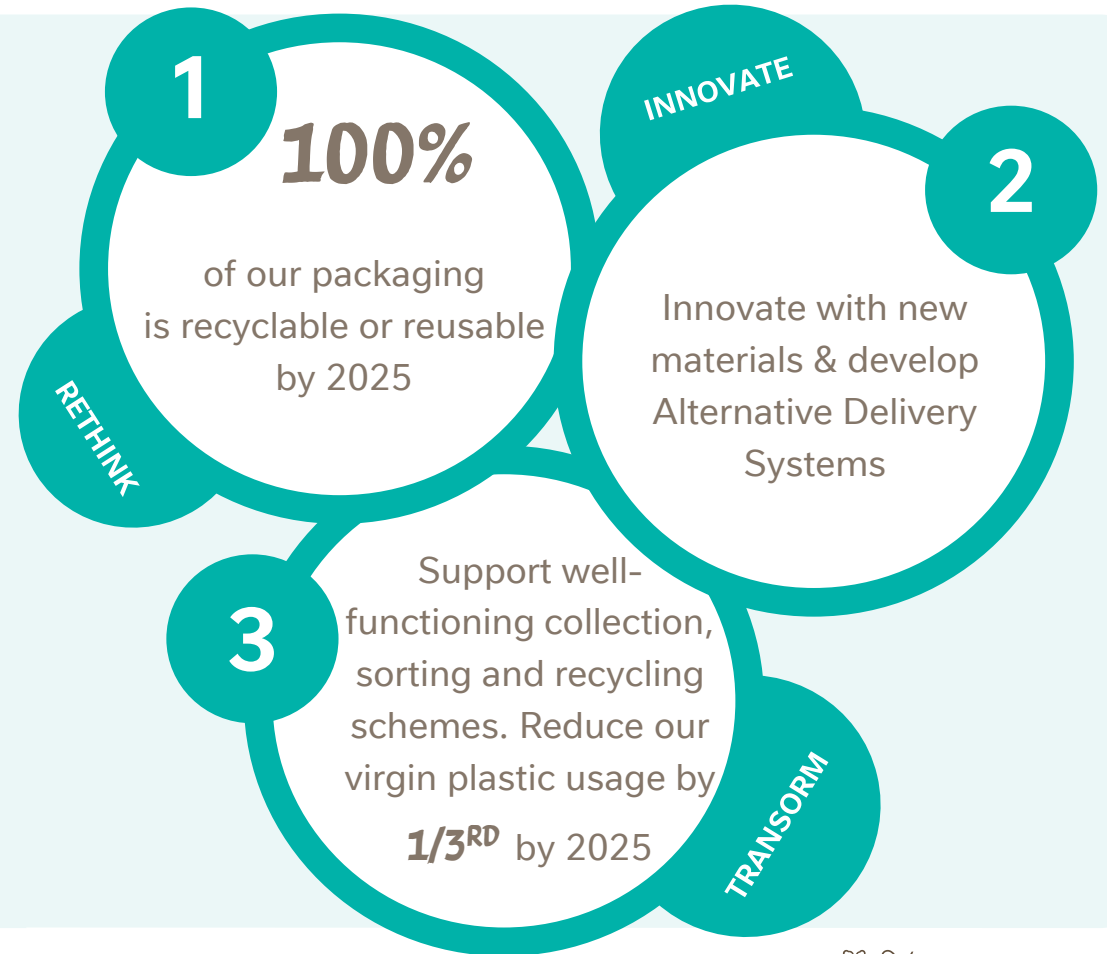
Our Vision



None of our packaging,
including plastics, ends up in
landfill or as litter.

Owning Our Commitments

Changing the way we interact with packaging, requires us to rethink the way we produce and consume. We need to ensure that the changes we make to our packaging and delivery system work for the communities that enjoy our products around the world every day. It is about exploring multiple solutions and it requires collaboration and innovation on a global scale. By working with our partners, we want to create a lasting and impactful change. A change for the better. For people and the planet.



Building the Future Today

The **Rules of Sustainable Packaging** are defined by two key sets of rules:

- 1. The Golden Rules** – confirmed attributes that define the way we design our packaging today and in the future to ensure it's recyclability.
- 2. The Negative List** – a list of materials, additives, packaging concepts and items which are or will be considered obsolete based on the evolution of recycling technologies and infrastructure and legal/regulatory framework.

In the next section, we outline **The Golden Rules** – a comprehensive set of rules to guide our sustainable packaging transformation journey. These should be applied to all packaging innovations and renovations, in order to improve design for recycling and overall environmental performance.

The Golden Rules for All Packaging

Building the Future Today

- 1 SUSTAINABILITY PERFORMANCE** of the packed product should be improved, whenever possible. Eliminate problematic or unnecessary packaging.
- 2 HOLISTICALLY OPTIMISE** primary, secondary & transport packaging: $\geq 95\%$ pallet footprint, $\geq 90\%$ pallet cube utilisation (% of total volume utilized); reduce plastic overwraps.
- 3 ELIMINATE** excessive headspace (Rigid & Flexible). Strive to achieve the minimum technically possible / select equipment to achieve it.
- 4 INCREASE RECYCLING VALUE** for packaging types that are recycled at scale in today's recycling systems and will be recycled at scale in future recycling systems.
- 5 RECYCLED CONTENT** especially in plastics should be maximized as much as possible when compliant.



The Golden Rules for All Packaging

Building the Future Today

6 IMPROVE ENVIRONMENTAL PERFORMANCE of B2B packaging.

7 FOLLOW industry standards for design for recycling where the product is marketed, such as EPBP for PET, 4evergreen for EU, CEFLEX for Flexibles and APR in the US.

8 LOCAL INFRASTRUCTURE & TECHNOLOGY availability needs to be considered:

- Can it be collected, sorted and recycled in your market?
- Do not mix materials that prevent sorting or recycling.
- Eliminate / do not use small items that can be easily separated from the main pack.

9 COMPLY to the receiving markets requirements for intermarket supply.

10 ENGAGE & IMPROVE COMMUNICATION with consumers on how to dispose of packaging responsibly.



The Golden Rules

Chapter 1: Plastics

- 1** Use **MONO MATERIAL** structure for plastic packaging to enable recyclability.
- 2** **DO NOT USE** oxo-degradable plastics with degradation promoting additives.
- 3** **DO NOT USE** PVC, PVDC, Polystyrene (PS), or Expanded PS.
- 4** **BIO-BASED PLASTICS** can be considered when technically possible, responsibly sourced and compliant.
- 5** **BIODEGRADABLE/COMPOSTABLE MATERIAL** usage shall be assessed and approved by Nestlé R&D.
- 6** **UNCOLOURED, TRANSPARENT** or lightly coloured materials are preferred to maximize value of the recycling stream.
- 7** **RESIDUAL PRODUCT** must be easily removable prior to disposal of the pack.
- 8** **DESIGN** to enable easy sorting and ensure that packaging is detectable in automated sorting facilities.



THE GOLDEN RULES

Chapter 1a: Flexible plastics – maximize mono PE and PP usage



Stickpack, sachet, doypack, collation bag,...

- **USE** at least 90% of PE or PP in the structure
- **Mono PO** (PP/PE >90%) can be used but favor Mono PE or Mono PP when possible
- Mono PET in flexibles is **NOT RECOMMENDED**
- **DO NOT USE** more than 5% EVOH /PVOH
- Usage of OPA/CPA is **NOT RECOMMENDED** unless proven to not disturb recycling
- **PHASE OUT by 2025:** Non-recyclable multi-material structures and incompatible plastics combinations



Mono material shrink, wrap and stretch

- **Eliminate** where possible and where it makes environmental sense
- **USE mono** PE or PP films
- **MAXIMIZE** recycled content
- **USE** un laminated film (basic film) for bags, when possible.
- **FAVOR** unprinted film
- **MINIMISE** print area if printed
- **AVOID stickers/label on the film. If required same material as the film** should be used

THE GOLDEN RULES

Chapter 1b: Rigid plastics – maximize mono PE, PP or PET



RIGID PLASTIC PACKAGING: all PET applications

- **USE** mono material PET
- **USE** transparent and uncolored PET, or transparent blue or green as per local industry guidelines
- **MAXIMIZE** R-PET content when possible
- **DO NOT USE** expanded PET and PET-G
- **DO NOT USE PET** based oxygen scavenger unless proven to not create yellowing in rPET
- **ENSURE** material choice, adhesive choice, inks and size of sleeve or label is not problematic for recycling
- **ENSURE** material choice and adhesive choice of lidding films, inserts or other components is not problematic for recycling



RIGID PLASTIC PACKAGING: PP & PE

- **USE** mono PP or mono PE
- **ENSURE** detectability by commonly used sortation technologies
- **DO NOT USE** carbon black which prevent detectability
- **AIM** at EVOH <6%
- For all labels, **ENSURE** material choice, adhesive choice, inks and size is not problematic for recycling
- **DO NOT USE** fillers that increase the density of the packaging to >1g/cm³ and might impact recycle quality
- For closures, **ENSURE** material choice, liners and seals are not problematic for recycling
- **PHASE OUT** silicon valve in PO closure

The Golden Rules

Chapter 2: Paper & Paperboard

- 1 ENSURE** material is sortable and recycling infrastructure is in place in the selling market. Confirm recyclability via relevant recycling test.
- 2 ELIMINATE** food residues in the pack by optimising the format and informing consumer to remove residues before disposal (light staining and traces of dry foods can be accepted).
- 3 DO NOT USE** fluorine-containing compounds (PFAS).
- 4 AVOID** chlorine containing coatings (e.g. PVDC) where other options are available.
- 5 MAXIMIZE** paper recycling yield by removing non-paper elements such as labels, spouts and windows and by limiting barrier coatings or lamination to the functional minimum.
- 6 LIMIT** cold/hot foil stamping on the outside of the pack to a maximum of 30% of the pack surface to avoid sorting or recycling issues.

The Golden Rules

Chapter 2: Paper & Paperboard

DISPERSION/EXTRUSION COATED AND LAMINATED PAPER/PAPERBOARD

- **MAXIMIZE** fibre content in packaging material and minimize content of polymers
- **ENSURE** efficient re-pulpability of the fiber fraction and ease of delamination
- **GUARANTEE** successful testing and approval for recycling along with the OCC (old corrugated cardboard) and/or mixed paper wastes

MOLDED PULP CONTAINERS

- **CONFIRM** local recyclability and in which recycling stream, specifically if non-wood pulp is used
- Wet strength and sizing additive **CAN BE ADDED** at levels that do not affect the recyclability of the pack
- **ENSURE** that food residues can be efficiently removed and provide a clear guidance to consumer

PAPER STRAWS & WRAPS

- Paper made from virgin pulp **MUST BE USED** on all straws and wraps
- **NO PRINTING/INKS** on straws and wraps due to concerns for contamination and health
- **COMMUNICATE** that straws should be pushed back into the beverage container

The Golden Rules

Chapter 3: Decoration 1/2

- 1 HOLISTIC END-OF-LIFE EVALUATION:** Each decoration technology incl. its adhesives/inks must be evaluated when combined with the container it decorates . Those 'decorations' must be either easily separable or fully **compatible** with the recycling stream of the main container.
- 2 DO NOT USE** PVC or conventional PET-G film substrate for sleeve/label.
- 3 DO NOT USE** PVC inks.
- 4 DIRECT PRINTING**
 - **CONSIDER USING** on metal and glass containers.
 - **CONSIDER** for **PP, PE & PET** container, tray, lid and pot but assessment at local level must be performed and comply to Food safety and Inks standards.
 - **DO NOT USE** for PET bottles.
- 5 MINIMIZE** print
USE CMYK+1 approach for artwork construction.

The Golden Rules

Chapter 3: Decoration 2/2

- 6** **PE and PP container: LABELS/STICKERS/SLEEVE** to be made from polyolefin material to ensure full recyclability. Paper label to be phased out unless proven to not disturb recycling.
- 7** **PET container: LABELS/WRAP-AROUNDS/STICKERS** to be made of a material with density $<1\text{g/cm}^3$. Paper label to be phased out unless proven to not disturb recycling.
- 8** **FULL SLEEVE** should be limited to functional applications such as light barrier and proven to not disturb recycling. Sleeve for design purpose only must be phased out unless proven to not disturb recycling.
- 9** **SLEEVE FOR PET CONTAINER** must not prevent proper sorting/ recycling of the container
PET crystalline sleeves with APR qualified washable ink systems are allowed worldwide with the exception of EU 27 countries which follow the EPBP rules.
- 10** **PHASE OUT** non-water soluble/dispersible adhesives.

Redesigning the Obsolete Past

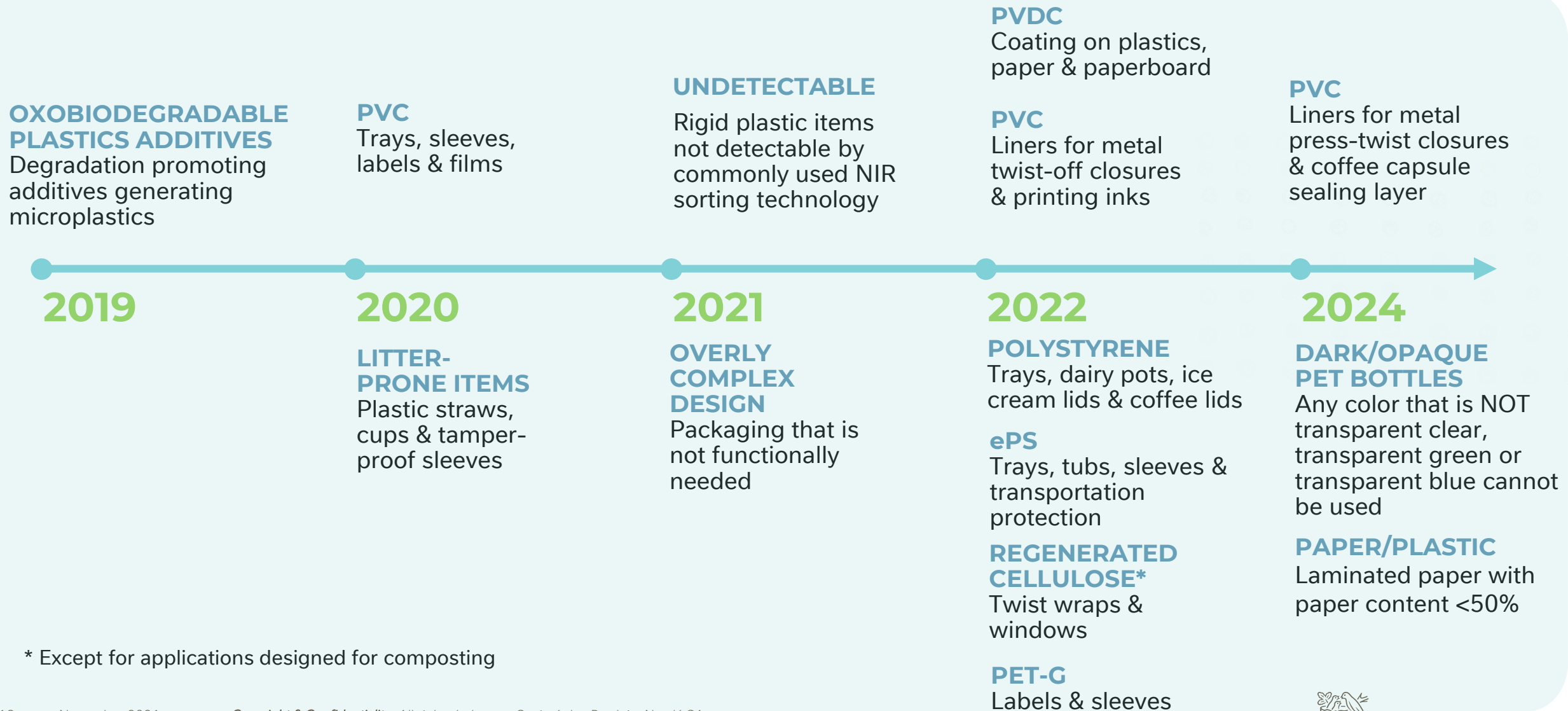
In addition to **The Golden Rules** defining our way forward, we must clearly address that some materials of the past are no longer acceptable. These will be removed from our supply chain as a part of our sustainable packaging transformation journey.

These materials are defined by **The Negative List** – a list of materials that are detrimental to the environment, are difficult to recycle, or are unlikely to have large-scale collection and recycling in the future. In the next page, you will find a summary of all packaging materials and elements that must be removed by a clear deadline.

The Negative List

Materials to Be Removed

This timeline is indicative of our direction and priorities. These are not time-bound commitments as progress may be affected by the availability of alternative materials.



* Except for applications designed for composting



Thank you for supporting our
commitment that 100% of our
packaging will be recyclable or
reusable by 2025.