Klimaziele Erreichen

Unsere Toolbox für nachhaltige Mobilität

Patrick Wilke - Segment Manager Transportation
Kontakt: patrick.wilke@basf.com
Mobil:+49 160 96723190

BASF
We create chemistry


Our ambition
To be the preferred chemical company to enable our customers’ green transformation.
BASF
We create chemistry

BASF is fully committed to the climate protection targets and the transformation of the chemical industry

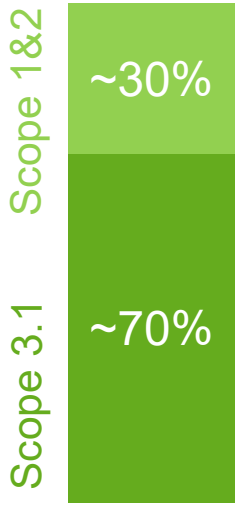
Reduce CO_2 Emissions

2050

Net zero

Scope 1,
Scope 2 and
Scope 3.1
CO_2 emissions

Split of BASF Carbon Emission 2023



Design for Recycling

Using **novel materials** and **single-material solutions**

Increase Circular Content

Using **alternative raw materials** in selected value chains

BASF
We create chemistry

BASF's Performance Materials division plants run entirely on renewable electricity in Europe as of 2025

On January 1, 2025, BASF's Performance Materials division completely switched all its European sites to renewable electricity.

BASF
We create chemistry

We are making progress on technologies for CO_2 abatement

eFurnace

eFurnace[1] demonstration plant in Ludwigshafen inaugurated with SABIC and Linde; testing of material behavior and process on industrial scale ongoing

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag
Funded by the European Union
NextGenerationEU

Water electrolysis

54 MW **water electrolysis**[2] plant in Ludwigshafen (Hy4Chem-EI) commissioned in March 2025, funded by ministries on federal and state level

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag
RheinlandPfalz
MINISTERIUM FÜR KLIMASCHUTZ, UMWELT, ENERGIE UND MOBILITÄT

CCS projects

BASF and Yara evaluating world-scale **blue ammonia** project using **CCS** in the United States

CCS project to reduce BASF's CO_2 emissions in Antwerp by 1 million tons per year slated for startup in 2028

Co-funded by the European Union

[1] Supported by the Federal Ministry for Economic Affairs and Energy (BMWE) and funded by the European Union.
[2] Supported by the Federal Ministry for Economic Affairs and Energy (BMWE) and the State of Rhineland-Palatinate [3]Total capacity 1.2 to 1.4 million tons p.a.

BASF
We create chemistry

We aim to reach €10 billion sales from Loop Solutions[1] for our customers by 2030

Close the loop

Renewable feedstocks

Products derived from sustainably sourced bio-based resources, or bio-attributed products using e.g. biomethane and bionaphtha in a mass balance approach: CathoGuard® 800 ReSource protects the car body from corrosion.

Recycled feedstocks

Certified mass-balanced products with attributed recycled feedstock derived from mixed plastic waste or end-of-life tires (ChemCycling®), or products from mechanical recycling: Neopor® F 5 Mcycled™ from certified post-consumer packaging EPS.

Enabling recyclability and/or biodegradability

Products focusing on the value chain for plastics and/or the recycling of mineral raw materials: Epotal® adhesives for the recycling of multi-layer packaging materials.

Extend the loop

Higher durability

Products enabling higher durability of materials: Ultrason®, offering high material strength, design freedom, and high heat resistance for a broad range of applications.

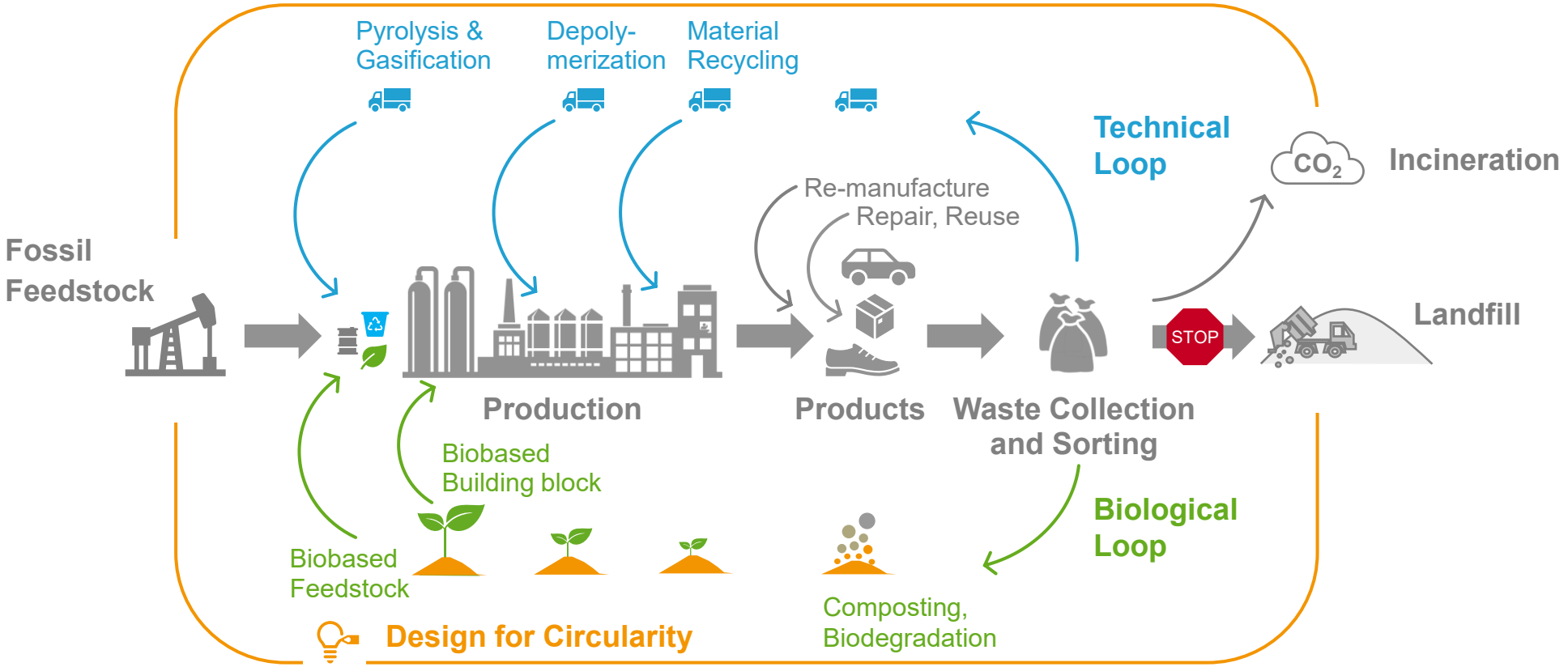
Prolonged lifetime/use phase of products

Products that increase lifespan of materials, extend service life and/ or reduce maintenance intervals: Tinuvin® light stabilizers protect plastics against all sorts of weather conditions.

[1] Loop Solutions: Sales of Circularity products (“close the loop” and “extend the loop”) in line with TripleS (Sustainable Solution Steering) Portfolio Assessment; Baseline 2023: €5 bn sales. 2024: €5.7 bn sales.

BASF
We create chemistry

We strive to close the loop and extend the loop
by transforming from fossil to renewables and recyclates, and enabling circularity, higher durability and prolonged lifetime of products



BASF
We create chemistry

Recyclability of plastics at scale required

We invest in complementary recycling routes

Possible[7] | Partially | Not possible | New Technologies

	PU	TPU	EP	PE/PP*
Material recycling	! [1]	✓	✓ [2]	✓
Applicability limited; pure waste streams required				
Chemical recycling				
▪ **Depolymerization**		✓		✗
Reasonably pure waste streams required				
▪ **Pyrolysis**		✗ [5]		✓
Technology of choice for polyolefin-based mixed wastes				
▪ **Gasification**			✓	
Potential for various mixed plastic waste streams				

*PE/PP not part of BASF Performance Materials portfolio.

BASF
We create chemistry

Plastics circularity builds on two key requirements

(1) Recyclability

What happens at plastics end-of-life?

Recyclability
of plastics
at scale required

(2) Circular Content

How are plastics produced?

Obligatory quotas
for post-consumer waste
as feedstock

We look at the **USE** and **RECYCLE** phase

We look at the **MAKE** phase

BASF
We create chemistry

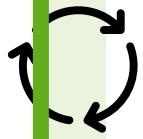
Plastics circularity builds on two key requirements

(1) Recyclability

What happens at plastics end-of-life?

Recyclability
of plastics
at scale required

We look at the **USE** and **RECYCLE** phase



(2) Circular Content

How are plastics produced?

Obligatory quotas
for post-consumer waste
as feedstock

We look at the **MAKE** phase

BASF
We create chemistry

We develop new materials to enable recycling

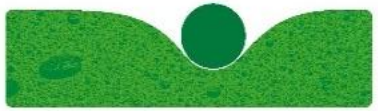
Polyurethane foams cannot be recycled?

Now they can!

Hello,

I'm the new generation of flexible PU foam which can be 100% mechanically recycled.

I'm as comfortable as conventional PU foam, making me perfect for automotive interior, furniture and footwear.



I can be thermally embossed.

February 2025 launch meltable foams in collaboration with Vitra

V-FOAM
(MELTABLE POLYURETHANE FOAM)

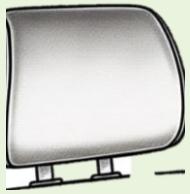
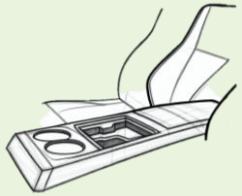
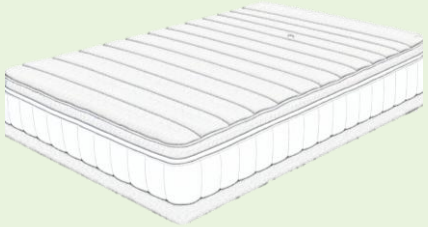
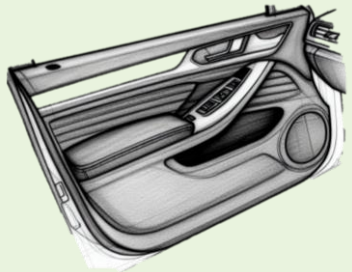
Vitra introduces recyclable polyurethane upholstery foam called V-Foam

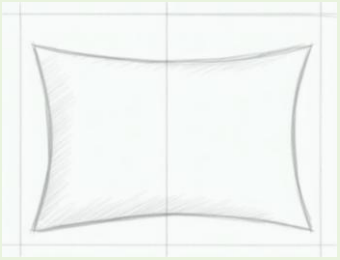
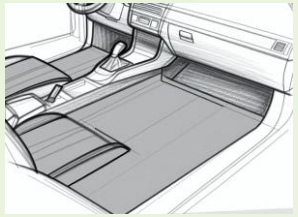
The world's first economically recyclable polyurethane foam

Vitra is gradually introducing V-Foam for all its upholstered furniture containing molded foam.

The meltable foams developed by BASF are marketed under the brand name V-foam by Vitra.

Meltable foams can be used in a broad range of applications


Embossing

Mono-material

Improve recyclability

No compromise on performance

Improve material characteristics

No changes in current production equipment

BASF
We create chemistry

We develop new materials for weight reduction and recyclability

Ultramid® Expand

BASF Process | **Customer**

Ultramid® granulate

BASF Foaming Process

Ultramid® Expand

Ultramid® Expand

Steam molding technology

Final shaped part

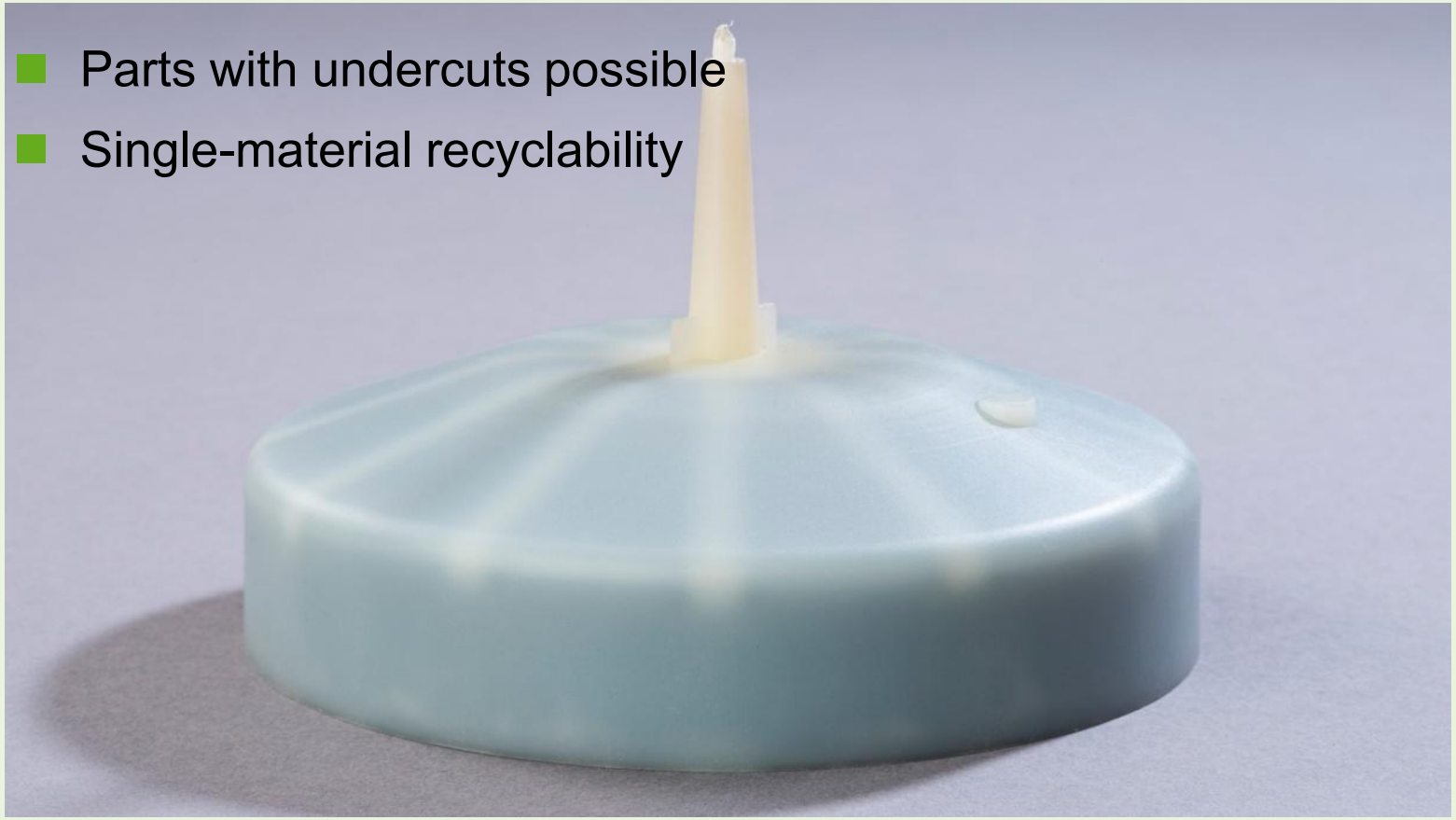
- Big parts with complex 3D geometries achievable
- Low costs for molds (perfect for smaller series)
- Drop-in solution for standard EPP technology
  - 4 bar steam pressure / 150°C

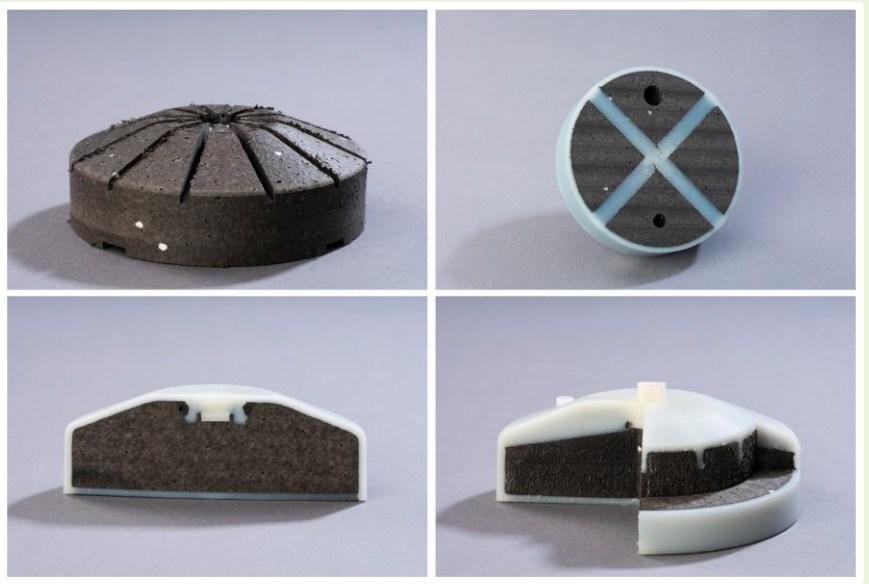
BASF
We create chemistry

Application of Ultramid® Expand

Create complex structures by overmolding with Ultramid®

- Parts with undercuts possible
- Single-material recyclability





BASF
We create chemistry

Plastics circularity builds on two key requirements

(1) Recyclability

What happens at plastics end-of-life?

Recyclability
of plastics
at scale required

We look at the **USE** and **RECYCLE** phase

(2) Circular Content

How are plastics produced?

Obligatory quotas
for post-consumer waste
as feedstock

We look at the **MAKE** phase

BASF
We create chemistry

Closing the loop with loopamid®

loopamid® is the first Polyamide 6 entirely made from textile waste.

- BASF’s unique recycling technology tackles one of the most pressing challenges the fashion industry is facing: textile waste
- loopamid® realizes textile-to-textile recycling by overcoming limitations of other nylon recycling processes
- From end-of-life textiles to virgin-like materials: Textiles are recycled at a molecular level ready to be transformed into brand new, premium fabrics
- Collaboration with major players along the textile value chain ensures specific requirements of textile production are met

BASF
We create chemistry

By using alternative raw materials, we can reduce fossil feedstock demand and contribute to a circular economy

Recycled feedstock

Dedicated mechanical recycling

e.g., mechanically recycled feedstock from expanded polystyrene (EPS) waste

Chemical recycling (e.g. ChemCycling®)

e.g., pyrolysis oil derived from plastic waste or end-of-life tires

Renewable feedstock

Biomass balance

e.g., biomethane or bio-naphtha derived from biomass (waste)

Dedicated bio-based production

Sustainably sourced bio-based resources, e.g., RSPO-certified palm oil

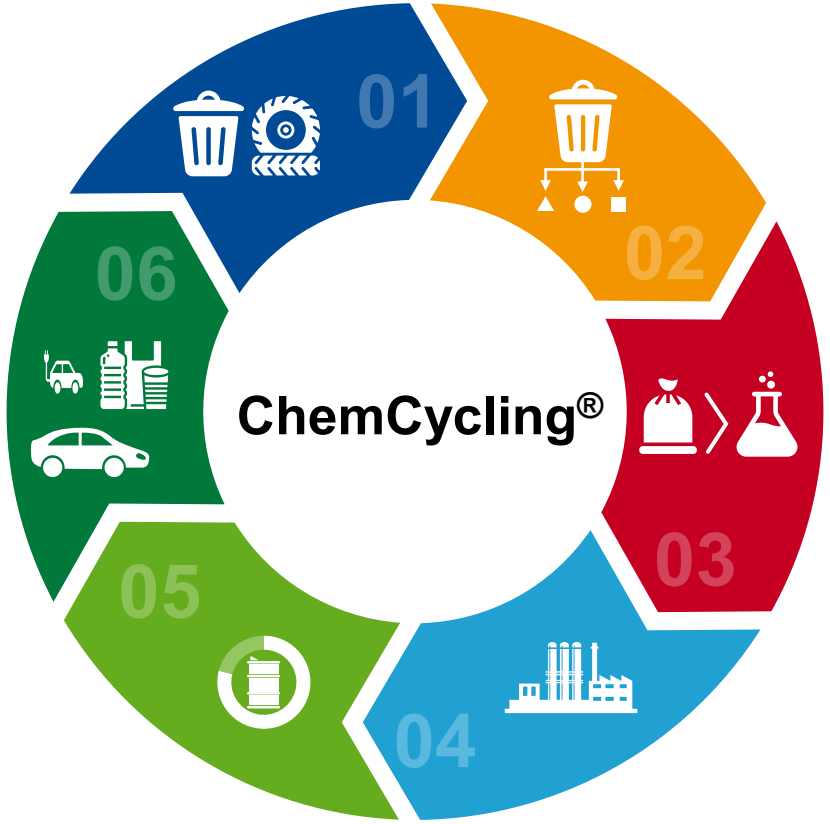
Mass balance approach

BASF
We create chemistry

ChemCycling® – Creating a circular plastics economy

01 Consumers use and dispose of plastic products (e.g., packaging, tires)

02 Waste companies collect and sort the waste and supply it to BASF's technology partners



03 Our partners convert the plastic waste into pyrolysis oil through a thermochemical process

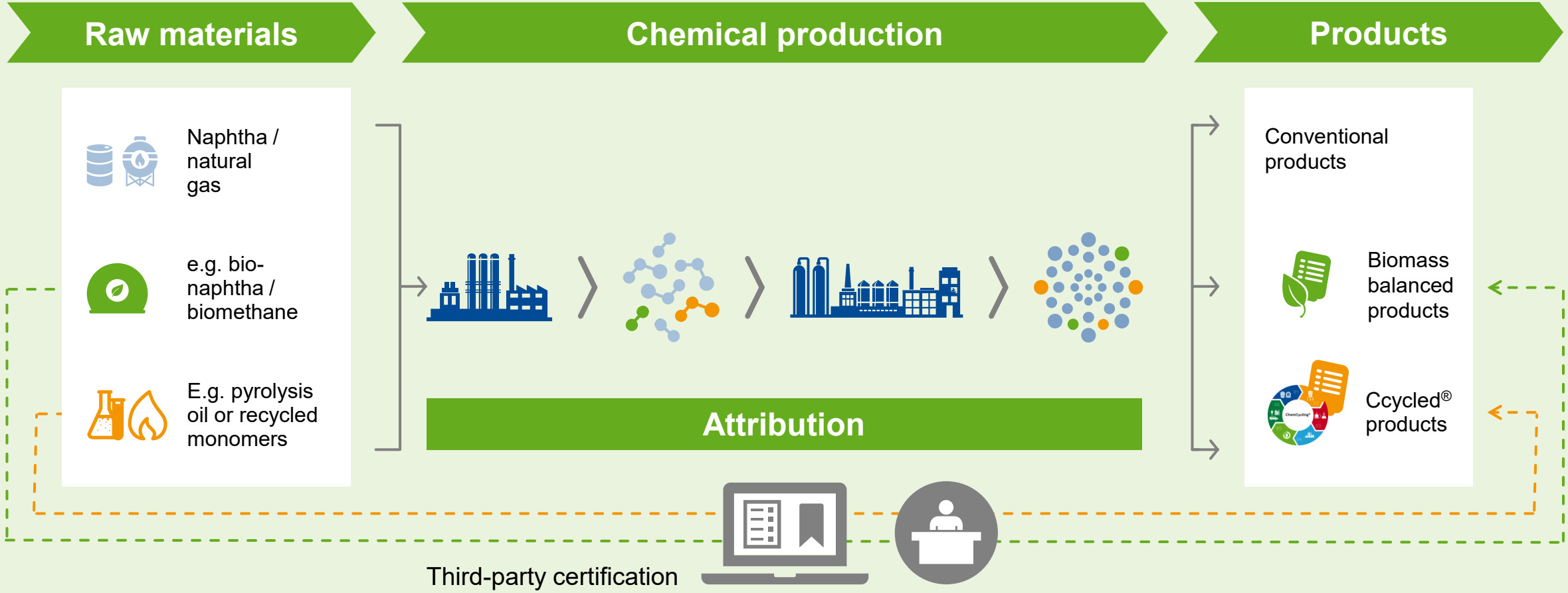
04 Pyrolysis oil is purified to be used as feedstock at the beginning of BASF's Verbund production

05 BASF can attribute the recycled feedstock to all chemicals produced in the Verbund via a certified mass balance approach

06 Our customers use these chemicals to make their own products

BASF
We create chemistry

The alternative feedstock is attributed to certified products through the mass balance approach (credit method, according to ISO 22095)



BASF
We create chemistry

Our Sustainability Toolbox summarizes various solutions and will be further extended

The chemical industry has many tools → **Have a look!**

Mechanical Recycling

Green Energy Manufacturing

Mass Balance

BASF
We create chemistry

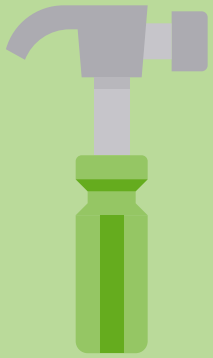
Our Toolbox to support your sustainability targets

Your Requirement:

Recycled content
Reduced product carbon footprint
Saving fossil resources

Mechanical Recycling

Post industrial or post consumer recycled waste as feedstock



Green Energy Manufacturing

Mass Balance

BASF
We create chemistry

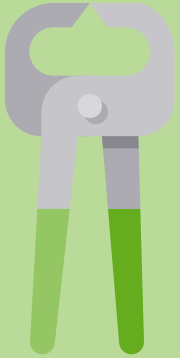
Our Toolbox to support your sustainability targets

Your Requirement:

Reduced product carbon footprint
Drop-in solution

Green Energy Manufacturing

Use of green energy carriers in BASF's entire production network



Mechanical Recycling

Mass Balance

BASF
We create chemistry

Our Toolbox to support your sustainability targets

Your Requirement:

Reduced product carbon footprint
Attributed recycled content
Saving fossil resources
Drop-in solution

Mass Balance

Alternative feedstocks at the beginning of BASF´s production network

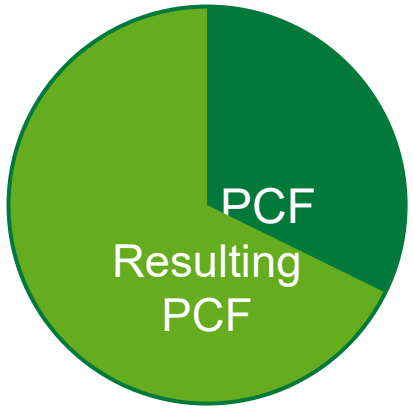
Mechanical Recycling

Green Energy Manufacturing

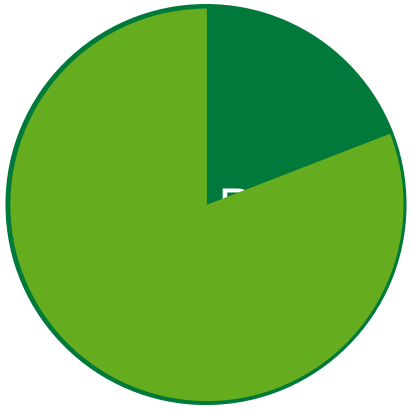
BASF
We create chemistry

Product Carbon Footprint (PCF) reduction potential and circularity

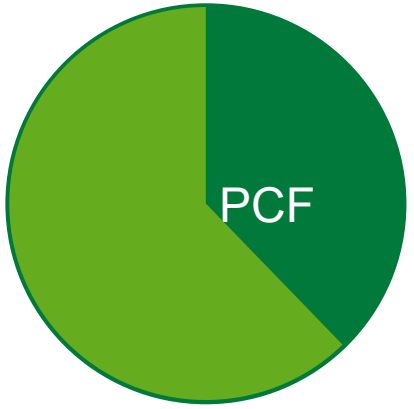
Mechanical Recycling



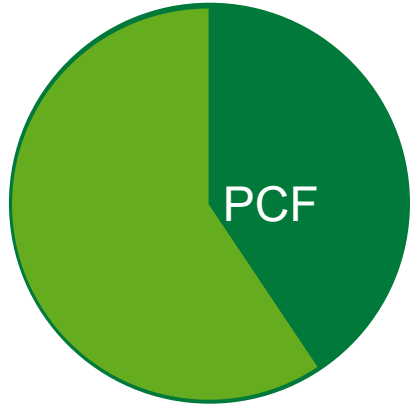
Green Energy Manufacturing



Biomass Balance*



ChemCycling®**



≤ 50% RC

100% RC (attributed)

Disclaimer:
*including biogenic uptake
**including upstream system expansion
Abbreviations:
PCF: Product Carbon Footprint
RC: Recycled Content

BASF
We create chemistry

Sustainability Toolbox: Ultramid B product example

Product & Sustainability Attributes	PCF [kg CO_{2e}/kg]	Circularity
Ultramid® B3EG6 UN	3.4	
Mechanical Recycling (30%)	Δ-1.0	30% recycled content
Green Energy Manufacturing	Δ-0.6	
Biomass Balance	Δ-1.6*	Up to 100% attributed biobased*** content
ChemCycling®	Δ-1.5*	Up to 100% attributed recycling content

Disclaimer:
All shown data represent “BASF Environmental Evaluation Data” and therefore fall under the signed Agreement. Shown PCF data for products based on fossil raw materials are equivalent with already submitted data with given constraints regarding liability and comparability. *) PCF data marked with * are estimated values based on qualified estimation procedures. Such estimation allows to derive a first indication forecast for the particular products.
The values are not accurate, and BASF will not grant any liability for these values, nor will BASF guarantee commercial availability of such products with given PCF

Abbreviations:
PCF: Product Carbon Footprint
*including biogenic uptake
**including upstream system expansion
***Waste based biofeedstock

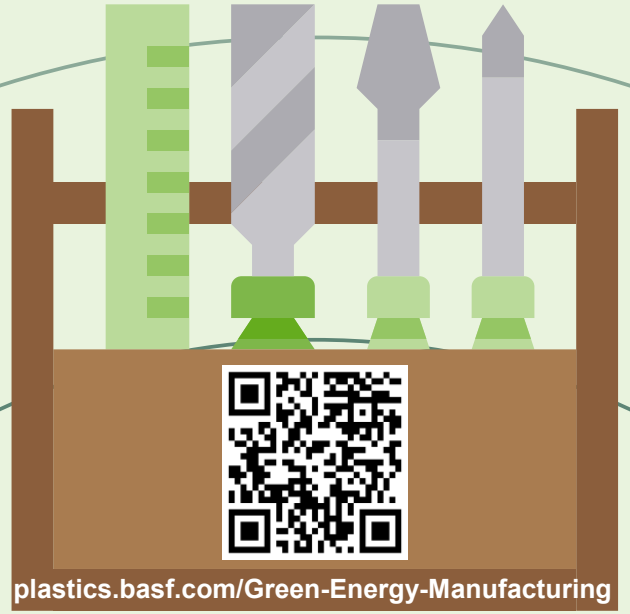
BASF
We create chemistry

Our Toolbox is constantly evolving…stay tuned!

Best-in-class raw materials

Additional recycled product offerings

Further green energy carriers (e.g. green hydrogen)



BASF
We create chemistry

We create chemistry