ELIX POLYMERS

A member of Sinochem International

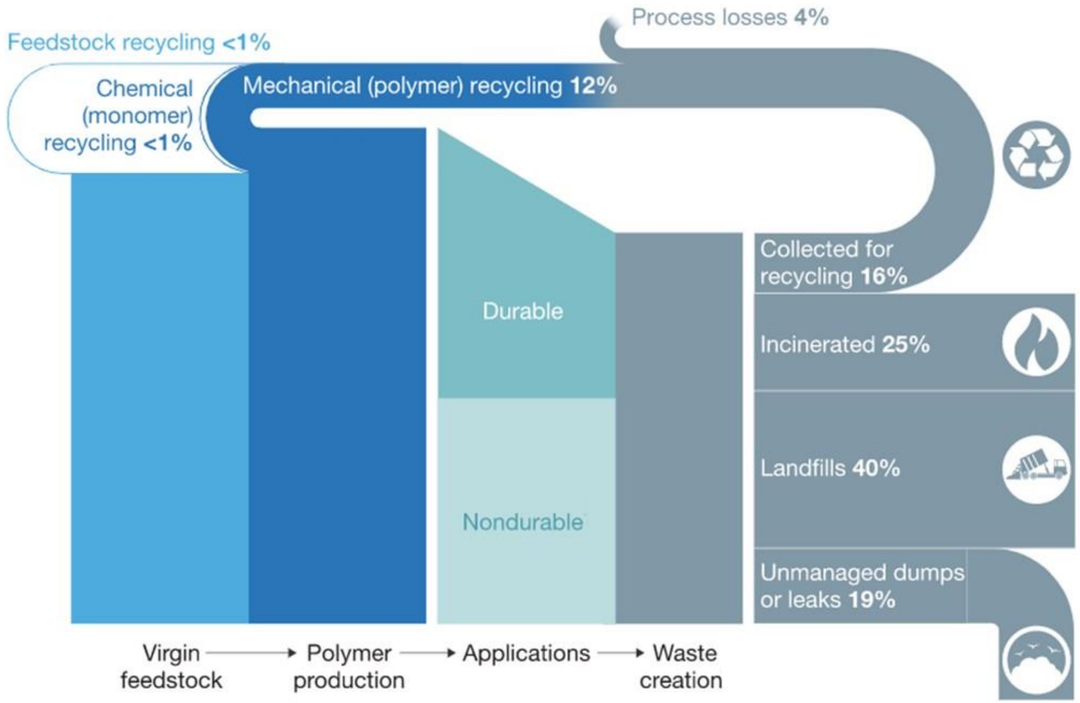
# Sustainable ELIX ABS products certified under ISCC+

E-LOOP
Let's close the loop

# Contents

# Polymer value chain and flows

Majority of plastics waste currently goes to landfills and incineration [1]




Achieve 50% of reuse and recycling rate will entail reshaping plastic waste flows [2]

EU Strategy on Plastics and regulatory, social demand and sector initiatives, will support this journey. It could be a reality at 2030 horizon, boosting reuse, mechanical recycling on high end application and chemical recycling.

Plastics **feature unique properties** and benefits contributing to society development

Our industry has to move **towards a circular economy model**, managing **the finite resources** (materials, water and energy), **processes and waste** in a **sustainable way**

1 "How the chemical industry could expand its activities in plastics waste recycling", McKinsey
2 "Recycling and the future of the plastics industry", McKinsey

# ELIX CIRCULAR ECONOMY STRATEGY

## MISSION

- To offer top-of-the-line sustainable solutions in our markets, promoting the transformation of the value chain towards a circular economy model.

## VISION

- To be a driving force of the new plastics economy, participating in the redefinition of plastic waste as raw material.
- To support an ecosystem of collaboration with companies who have common goals.

## COMMITMENT

- To establish collaborations for developing new business models, including opportunities stemming from our membership of Styrenics Circular Solutions
- To offer innovative up-cycling solutions which preserve functionality in final customer applications in our ABS

Our aim is to be a global leader of reference in the market of highly specialized thermoplastics. With this mission, we have played an active role in the transition towards a circular economy within the industry for years, making it one of the pillars of our business strategy.

We started to define our circular economy strategy in 2019, and to this end we have stablished a policy and action plan for the 2020-2023 period.

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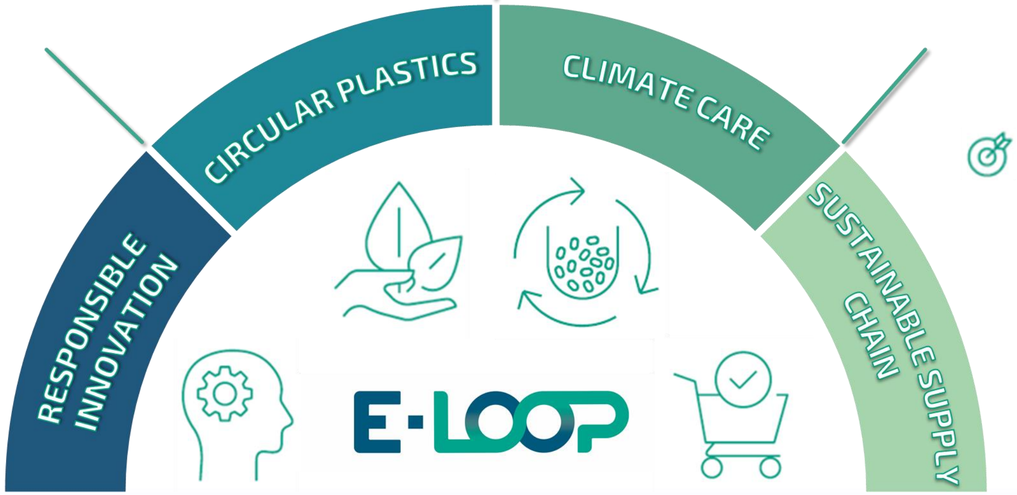
## ELIX Polymers 2020-2025 Sustainability Action Plan:


### ASPIRATIONAL OBJECTIVES

- Reduce our environmental footprint by 15% (CO2 and fresh water).
- Eliminate pellet losses in our operations.
- Reduce our vulnerability to climate change
- Ensure that 25% of the products used in our solutions offer a sustainable advantage by 2025.
- Invest in R&D and technology, by implementing projects that improve circularity and sustainable products.
- Ensure that 100% of our products are recyclable and free of substances of high concern
- Assess 80% of our suppliers on their environmental and social performance in 2025




# Over 45 years of experience in ABS production

*Where we come from...*

BAYER

LANXESS
Energizing Chemistry

INEOS

SUN CAPITAL
PARTNERS, INC.

ELIX
POLYMERS

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International

1975 | 2005 | 2009 | 2012 | 2019 | Present

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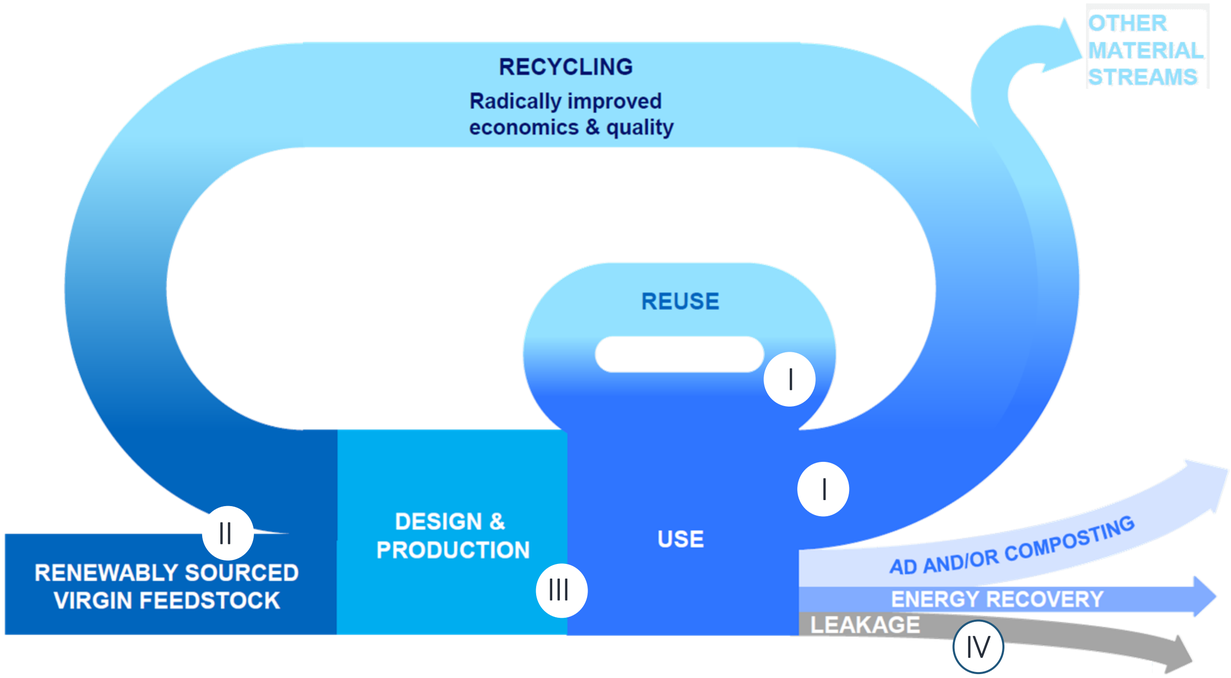
E-LOOP


E-LOOP is the brand name for ELIX sustainable solutions and circular innovations.

# Challenges for Plastics value chain to increase circularity




The next years – towards an economy that prospers whilst natural systems thrive, re-thinking business models

1 "McKinsey, Center for Business and Environment
2 SYSTEMIQ

I Create an effective after use plastics economy by **increasing reuse, recycling** of high-quality applications using plastics as **feedstock in the same or other value chain**

II Incorporate **renewable and bio based alternatives as feedstock**, reducing dependency from fossil feedstocks

III Incorporate resources for **responsible innovation** and **sustainability criteria** at design, production and use of ELIX materials.

IV **Reduce drastically the negative impact** into the natural systems

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# E-LOOP

*Let's close the loop*

## High-end applications

## Other applications

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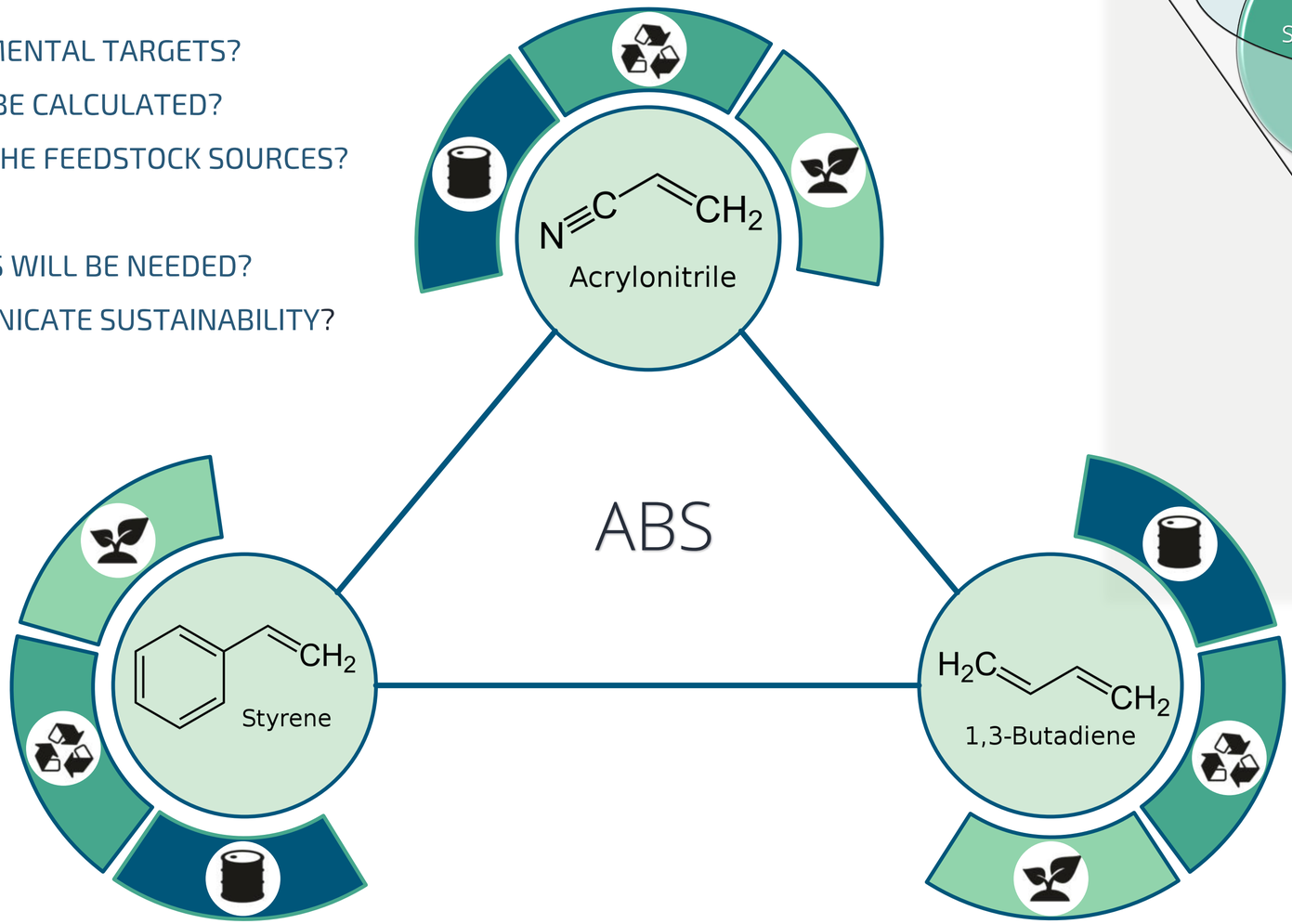
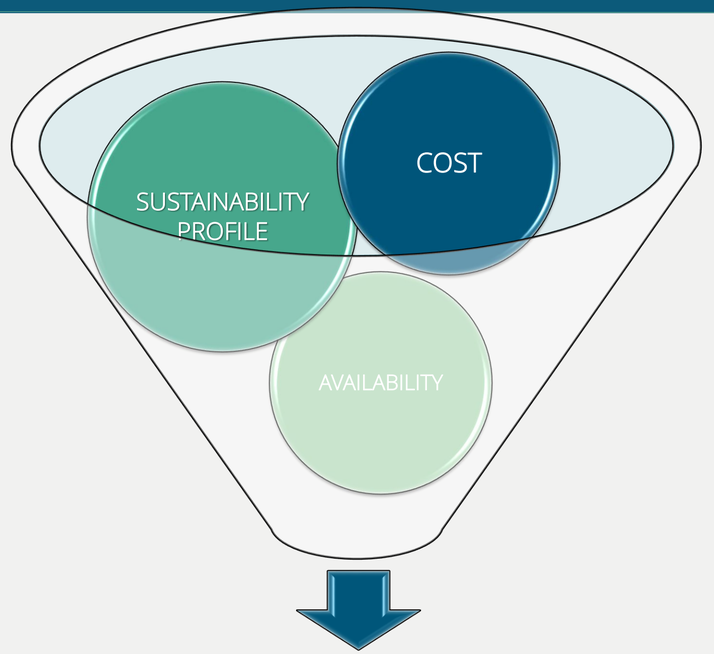
## Feedstock mix selection

- WHAT ARE THE MAIN ENVIRONMENTAL TARGETS?
- HOW THESE TARGETS NEED TO BE CALCULATED?
- IS THERE ANY LIMITATION FOR THE FEEDSTOCK SOURCES?
- WHAT IS THE DEMAND?
- WHICH CERTIFICATION SCHEMES WILL BE NEEDED?
- HOW DO YOU WANT TO COMMUNICATE SUSTAINABILITY?




FINAL FEEDSTOCK SELECTION

FUEL FEEDSTOCK

ADV. RECYCLED FEEDSTOCK

BIO SOURCED FEEDSTOCK

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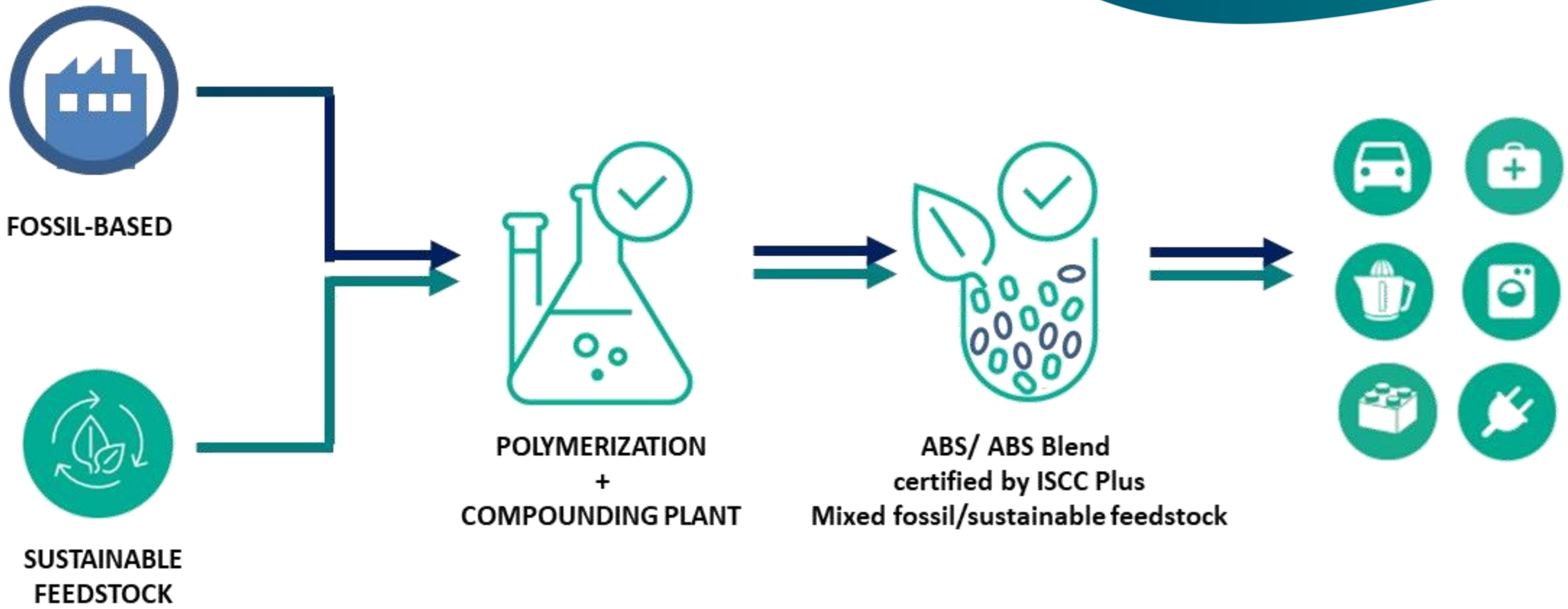
## ISCC Plus certification:




- Sustainability certification
- Globally applicable
- Traceability along the supply chain

- Environmental / Social standards verification
- Mass balance accounting
- Pre-defined and transparent rules

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# Sustainable ELIX ABS products certified under ISCC+

## ISCC+ Certified Raw materials (ELIX E-LOOP CR): Sustainable feedstocks

### Chemical recycled

**R-styrene**



### Bio-Based

**Bio-Acrylonitrile**


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**Sustainable ELIX ABS products certified under ISCC+**

# SUSTAINABLE PRECOLOURED ELIX ABS GRADES (ISCC+ CERTIFIED RAW MATERIALS): APPLICATIONS

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- **HIGH-END CONSUMER APPLICATIONS**
- **FOOD CONTACT COMPLIANCE**
- **MEDTECH APPLICATIONS**
- **COSMETICS & TOYS**

- Same identical ABS material as virgin
- Same target applications
- Same regulatory compliance
- Reduced CO2 emissions

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## Material regulations

- REACH
- RoHS
- ELV
- EU CLP
- WEEE
- ODS
- Other regulations

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# CC GRADES: CHEMICAL COMPLIANCE ABS

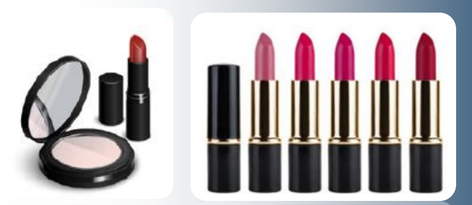
E-LOOP Let's close the loop *CR version*

*ELIX chemical compliance ABS:* ***ensuring consumer health & safety.***

- ✓ **Safe use ABS for the target application**
- ✓ **Fulfilling all applicable legislations**
- ✓ **Covering the complete ABS pre-coloured formulation**

**PIGMENTS & ADDITIVES** + **ABS POLYMER** = **ABS PRE-COLOURED**

✓ ✓ ✓



## Plastics in contact with food

- Comission Regulation (EU) No 10/2011
- FDA 21 C.F.R.
- GB 4806.1

## Cosmetic Packaging

- Regulation (EC) No 1223/2009

## Toys

- Directive 2009/48/EC
- EN 71-3
- ISO 8124-3

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# Sustainable ELIX ABS products certified under ISCC+

## FOOD CONTACT, TOYS AND COSMETICS ELIX CC-ABS PORTFOLIO

**Main requirements from food, cosmetic and toys industries are fulfilled with the different grades in the portfolio**

**Different property profiles and specialties like including high heat, ultra high flow and chemical resistant ABS grades**

**Big availability of colors and additive packages approved for use under different health & safety regulations.**

**Material compliance along the most important markets in the globe: EU, NAFTA, China, among others…**

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*CR Version*

### HIGH FLOW

**P2H-CC**
- High Flow
- Very High Gloss
- Medium Impact Resist.

**M220-CC**
- High Flow
- High gloss
- Medium impact even at Low Temp

**M203-CC**
- HIGH Flow
- High Impact Resist.
- High Gloss

### HIGH IMPACT

**P2M-CC**
- Medium Flow
- Very High Impact Resist.
- High Gloss

**C108-CC**
- Medium Flow
- Very High Impact
- High Gloss

### HIGH HEAT

**H605-CC**
- High Heat ABS
- High Flow
- Medium Impact Resist.

### CHEMICAL RESISTANT

**P3H-CC**
- Chemical Resistance ABS
- High Impact at Room and Low Temp

**M201-CC**
- Chemical Resistance ABS
- High Impact at Room and Low Temp

### PLATING

**P2MC-CC**
- PLATING ABS
- High Impact at Room and Low Temp

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# Sustainable ELIX ABS products certified under ISCC+

## ELIX ABS GRADES FOR ELECTRIC & ELECTRONIC PRODUCTS
## Consumer, building technology

**P2H-AT M220 H605 M201AS**

**Switches and sockets**


**P2H-AT M220 M203 118HF P3H-AT M201-AS**

**Fridges**

**Washing machine Dryers Dish washers**



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*ISCC+ CR version available*
*Es. ELIX E-LOOP M220 CR50*

**P2H-AT M220 M201AS P3H-AT**

**Mini circuit breakers**

**Building automation**

**Fire protection, alarm systems**

**Motion detectors**

**Touch sensors / controls**

**Sensors for °temp, humidity, dust, air quality**

**P2H-AT M220 M201AS P3H-AT**

**Synco 700 primary HVAC controllers**

**Synco IC**

**Room HVAC automation**

**Room electrical automation**

**P2H-AT M220 M201AS P3H-AT**

**Heating / Ventilation / AC**

*Pictures are only examples. Source Siemens website https://new.siemens.com/global/en/products.html

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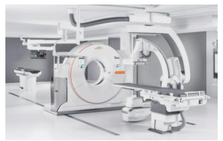
# ELIX ABS GRADES FOR MEDTECH APPLICATIONS (applications not requiring biocompatibility)

## MEDICAL IMAGING

Angiography, CT, MR, Ultrasound, Radiography..

**P2H-AT**
**M220**
**E401**
**118HF**
**P3H-AT**
**M201-AS**

## LABORATORY DIAGNOSTICS



Hematology, cell analysis

**P2H-AT**
**M220**
**E401**
**118HF**
**P3H-AT**
**M201-AS**


Medical Imaging


Laboratory Diagnostics


Point-of-Care Testing


Accessories, OEM & Electronics

**P2H-AT**
**M220**
**M201AS**
**P3H-AT**

## POINT-OF-CARE TESTING



Boold analisis systems


Cardiac systems





Diabetes, Coagulation, Urine analyzers, Covid testing

**P2H-AT**
**M220**
**M201AS**

## ACCESSORIES, OEM & ELECTRONICS




MR, X-Ray, Tomography, Angiography Accessories

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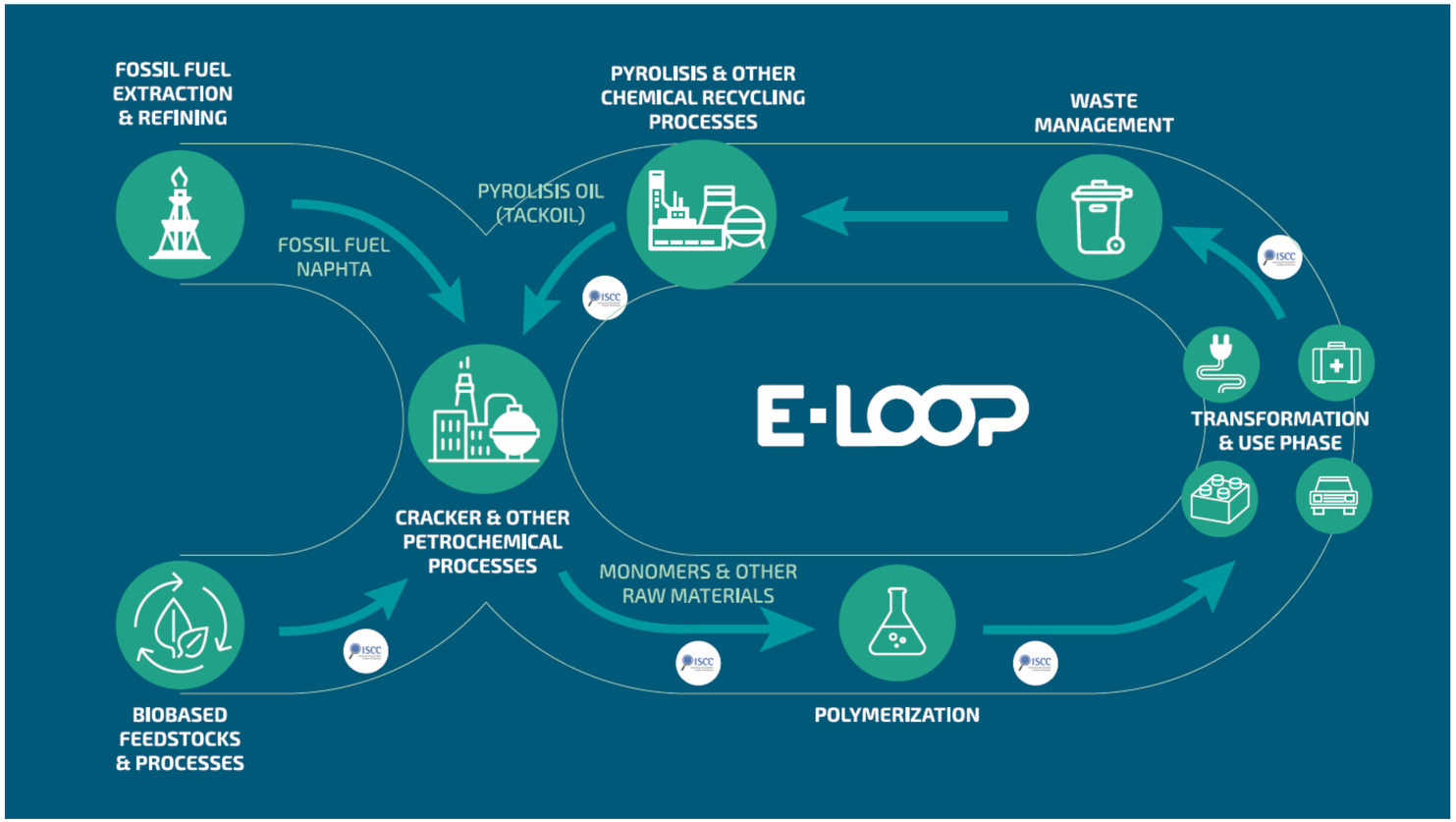
*ISCC+ CR version available*

*Es. ELIX E-LOOP M220 CR50*

*Pictures are only examples. Source Siemens website https://new.siemens.com/global/en/products.html

# Value chain:




## ELIX E-LOOP ISCC+ PORTFOLIO

- Sustainability declaration emitted in each batch
- CoA emitted with the % of recycle/biobased content.
- Three scenarios presented: 25%, 50% and 20%.

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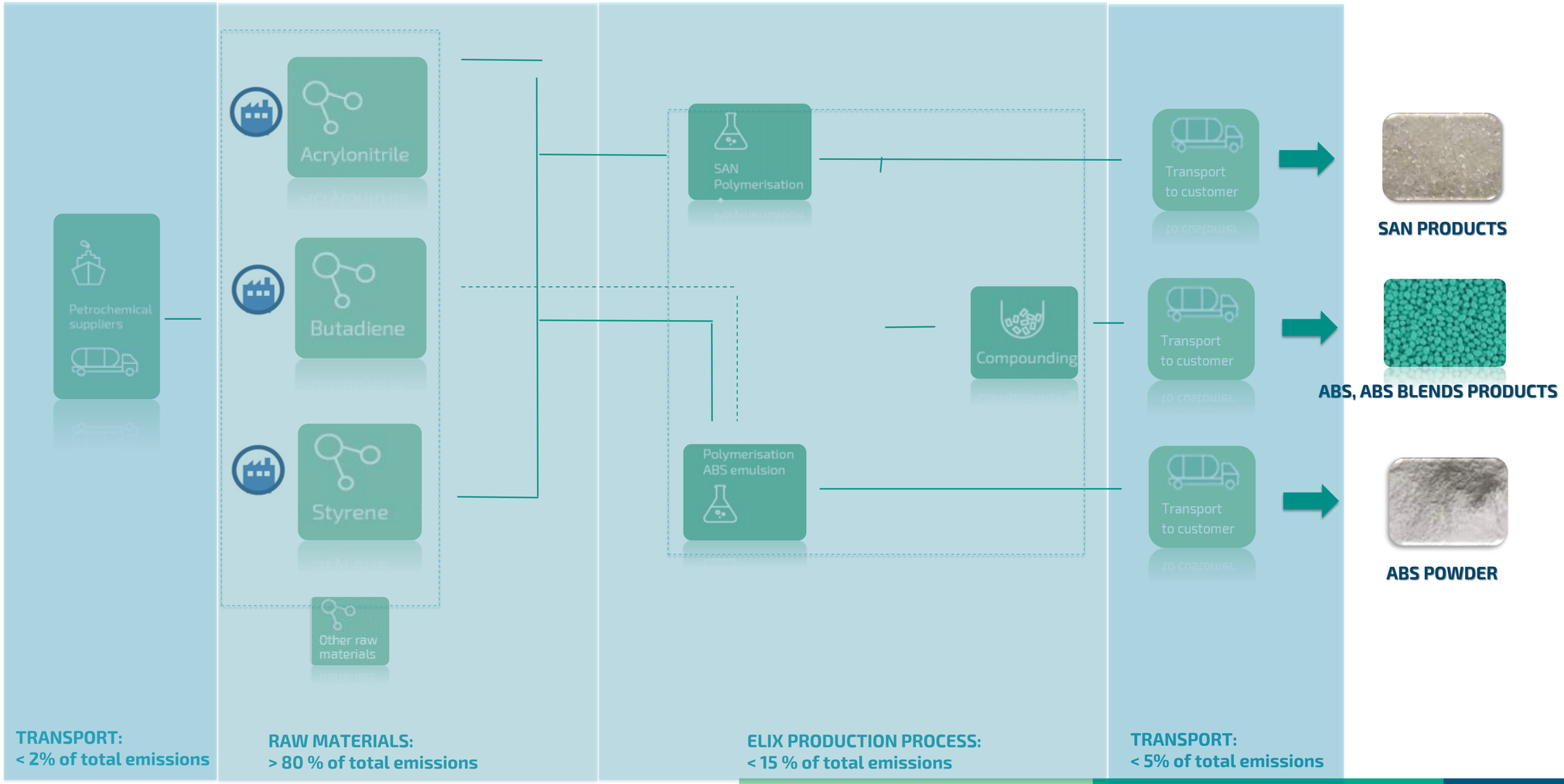
## Carbon footprint of ELIX portfolio (Cradle to gate) – Emissions 2021

**Product portfolio= ABS, ABS blends & modifiers**



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# Sustainable ELIX ABS products certified under ISCC+

## Sustainable ABS: possible configurations

"Cradle to gate"

### Fossil

FOSSIL FUEL NAPTHA → RAW MATERIALS → VIRGIN ABS (1 kg product)

### CR20


BIO SOURCES → BIO-BASED ACRYLONITRILE

FOSSIL FUEL NAPTHA → RAW MATERIALS

→ ABS E-LOOP CR20 (1 kg product)

### CR25


FOSSIL FUEL NAPTHA → RAW MATERIALS

PYROLYSIS OIL (mixed plastic waste) → CYRCULAR STYRENE

→ ABS E-LOOP CR25 (1 kg product)

### CR50

FOSSIL FUEL NAPTHA → RAW MATERIALS

PYROLYSIS OIL (mixed plastic waste) → CYRCULAR STYRENE

→ ABS E-LOOP CR50 (1 Kg product)

### CR70

Bio-based acrylonitrile

+

Circular styrene

BIO SOURCES → BIO-BASED ACRYLONITRILE

PYROLISIS OIL (mixed plastic waste) → CYRCULAR STYRENE

FOSSIL FUEL NAPTHA → RAW MATERIALS

→ ABS E-LOOP CR70 (1 kg product)

## ELIX E-LOOP ISCC+ PORTFOLIO

- Circular styrene: Carbon footprint reduction compared to standard grade ELIX ABS.
- Bio-ACN: Reduction based on lower carbon footprint derived from bio-based feedstocks.

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## How to get certified under ISCC Plus

1. Choose a certification for your market (ISCC Plus)
2. Choose a certification body and sign a contract
3. Register with ISCC
4. Get audited by your certification body and receive your ISCC certificate
5. **Handle sustainable material and use ISCC logos and claims**

CONTROLUNION

**ISCC PLUS Certificate**

**Certificate Number: ISCC-PLUS-Cert-PL219-87221801**

**Control Union Poland Sp. z o.o.**
**al. Wojska Polskiego 45, 65-764 Zielona Góra**
certifies that
**ELIX POLYMERS, S.L.U.**
**Ctra. Vilaseca – La Pineda S/N, 43110 La Canonja – Tarragona. Spain**

complies with the requirements of the certification system
**ISCC PLUS**
**(International Sustainability and Carbon Certification)**

Place of the audit
(if different from the legal address of the system user as stated above; only applicable for paper traders):
Address of the audit / n.a.

**This certificate is valid from 14.10.2020 to 13.10.2021**

The site of the system user is certified as:
Polymerization + compounding plant

The scope of the certificate includes the following chain of custody options:
Mass balance

Zielona Góra, 14.10.2020
Place and date of issue

Stamp, Signature of issuing party

The issuing Certification Body [illegible] the accuracy of this document.
Version / Date: 1 (01.09.2020) / 14.10.2020

Page 1 of 2

https://www.iscc-system.org/

# Conclusions

- Reduced CO2 emissions
- Same properties, compliance, same applications
- Chemical recycled content certified ISCC+
- Bio-base content certified ISCC+
- Sustainable content and mix can be adapted to OEM targets


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Thank you!