

Plastic.

Remaking Our World



Exhibition Concept

**Vitra
Design
Museum**

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The Exhibition

Plastics have shaped our daily lives like no other material. From food containers to electronic devices, from furniture to cars, from fashion to prefab buildings – with their almost limitless malleability, versatility, and economic production, plastics have spurred the imagination of designers and architects for decades. Originally associated with convenience, progress, even revolution, today plastics seem to have lost their utopian appeal. Plastics are everywhere, yet most conspicuous as waste and as a key factor in the global environmental crisis.

The Vitra Design Museum, V&A Dundee and maat are now devoting a major exhibition to the history of plastic – its initial lure and the challenges it poses to present-day design, science, and politics. The exhibition »Plastic. Remaking Our World« examines the rise of plastic during the course of the twentieth century, analyses its environmental impacts, and presents current research and design projects geared towards a new, more sustainable use of plastic.

The exhibition explores how new approaches to plastics might lead the way from a linear towards a circular economy by reducing single-use products, improving recycling processes, and shifting from oil-based to biodegradable plastics made from renewable materials. More broadly, it reflects on consumer behaviour as well as legislation and raises the question how design can move beyond form to take full account of product and material lifecycles in their entirety.

The exhibition is structured into three sections: An introduction, a historical section and a contemporary section.

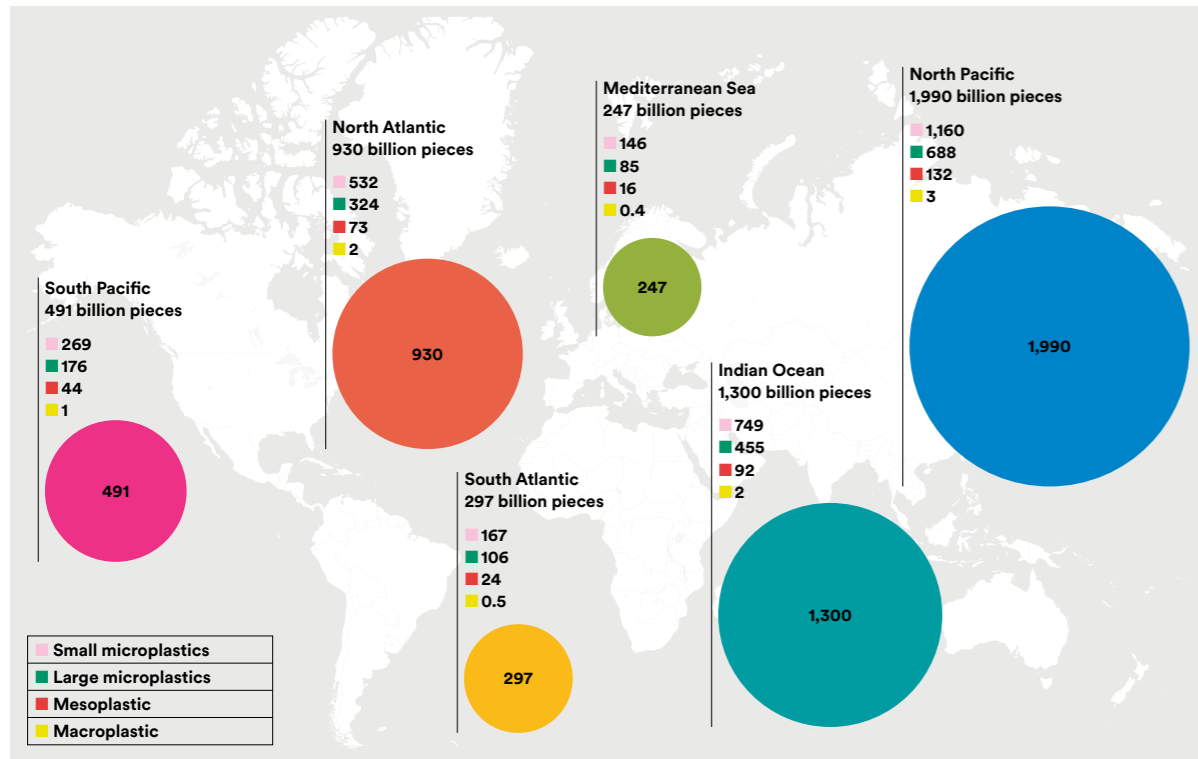


PREVIOUS PAGES:
Key Visual: Daniel Streat, Visual Fields
Recycled plastic plates, presented by Precious Plastic at Dutch Designweek in The Hague, 2017

ABOVE:
Advert for Ethocel (ethyl cellulose) by Dow, 1938

OPPOSITE PAGE, TOP TO BOTTOM:
Map of Synthetica, a continent of plastics, published in »Fortune« Magazine, October 22, 1940
Precious Plastic, shredded plastic





ABOVE, TOP TO BOTTOM:
 January 21, 2014 - Mumbai, Maharashtra, India: Datta Thalker (L), 55, and other fishermen of Khar-Danda Fishermen's village push a boat to coast amidst a sea of waste polythene bags washed ashore.

Distribution of plastic waste in the world's oceans.

OPPOSITE PAGE:
 Bär+Kneill, Müll Direkt, 1994

Section 1

Kalpa: An Introduction

» [Plastic] is the intimate manifestation of our cultural fixation with and dependency upon oil. And yet it is a material beyond oil, a material that effectively effaces its origins in oil; it is the afterlife of oil, the ineradicable residue of the era of petrocapitalism.«

Heather M. Davis, 2016

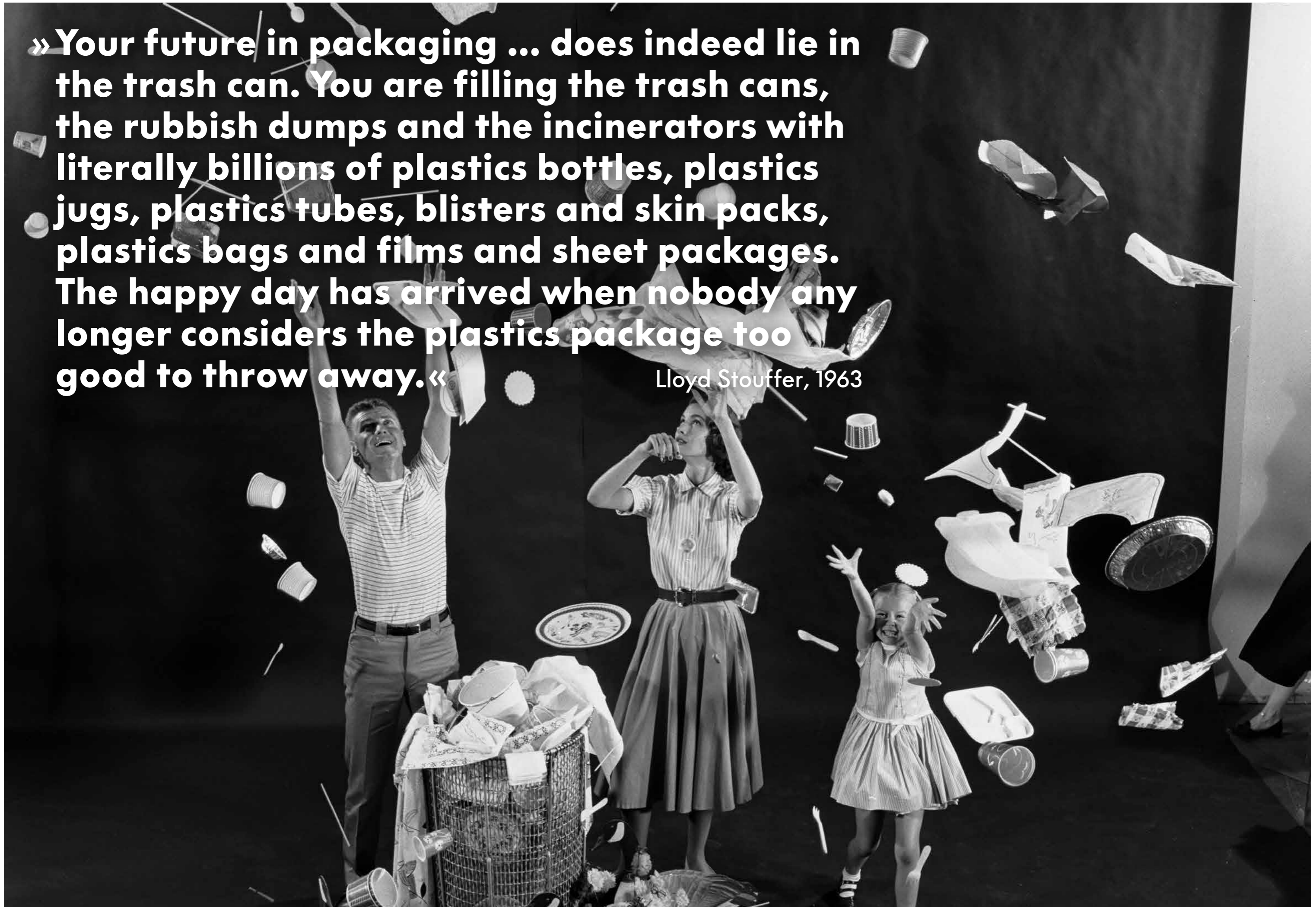


Global plastics production has grown from an estimated 1.5 million tons per year in the 1960s to 400 million tons today. The major share of plastics is produced for the packaging industry, followed by consumer products, the building industry, mobility, agriculture, hygiene and health. Only about 10% of plastic waste worldwide is recycled, around 25% is burned, 40% becomes landfill, and 20% is dumped. Every year an estimated 11 million tons of plastic end up in our oceans, where it threatens marine life, degrades into microplastic and eventually passes into the food chain.

Visitors enter the exhibition through an immersive multimedia installation titled »Kalpa« and created by Asif Khan specially for the show. In this first section they encounter two opposing time scales: that of geological deep time, i.e.: millions of years during which resources such as crude oil and coal formed, and that of the man-made age, i.e.: industrial production and the global rise of plastic and its subsequent transformation into waste. The title Kalpa is a Sanskrit word referring to a period of time in Hindu and Buddhist cosmology. It spans the creation, destruction, and recreation of the world.

»Your future in packaging ... does indeed lie in the trash can. You are filling the trash cans, the rubbish dumps and the incinerators with literally billions of plastics bottles, plastics jugs, plastics tubes, blisters and skin packs, plastics bags and films and sheet packages. The happy day has arrived when nobody any longer considers the plastics package too good to throw away.«

Lloyd Stouffer, 1963



Synthetica, Petromodernity and Plasticene: Plastics from 1850 until today

The second part of the exhibition follows the evolution of synthetic materials from the mid-nineteenth century to the present. It looks back at the emergence of the first plastic materials, many of which were plant- or animal-based. Gutta-percha, for example, a material used for decorative objects and insulation for underwater telegraph cables, was made from the latex of certain trees, while the shellac from which the first gramophone records were pressed is a resin secreted by scale insects. Early plastics are closely linked to colonialism as Western European colonial powers exploited the forests of Africa and South East Asia to obtain the natural resources they required. The first plastic made from purely synthetic components was invented in 1907 by Leo Baekeland, named Bakelite, and hailed as a material of unlimited opportunities. Being nonconductive, it was ideal for light switches, wall sockets, or radio sets and played a central role in the electrification of everyday life.

While early plastics were often developed by independent inventors, from the 1920s onwards the expanding petrochemical industry took a leading role. This marked the beginning of an era of »petromodernity«. Developments in the field of plastics were catalysed by the Second World War, which led to materials like Plexiglas – for aircraft canopies – or Nylon – for parachutes – to be processed on a large scale. Post-1945, these materials found new, domestic uses in plastic cups and plates, Tupperware, toys like Lego and the Barbie doll, or the coveted Nylon stockings. A few years later, a growing fascination with space flight shifted the focus to plastic’s utopian potential, which was reflected in futurist shapes and new interior design concepts. Examples on display in the exhibition include Eero Aarnio’s »Ball Chair« (1963), Gino Sarfatti’s »Moon Lamp« (1969), and the »Toot-a-Loop« (1971), a plastic bracelet with a built-in radio.



PREVIOUS PAGE:
Photo by Peter Stackpole, staged to illustrate an article on Throwing Living cutting down on household chores, »LIFE« magazine, August 1, 1955

ABOVE:
Panasonic Toot-a-Loop R-72S radio, 1969-72

OPPOSITE PAGE, CLOCKWISE:
Bakelite leaflet, 1930s

Marvin Good and Richard Hamilton, Monsanto House of the Future, Disneyland, Anaheim, California

Eero Aarnio, Pallo / Ball Chair, Globe Chair, 1963

Three-ply face mask of melt-blown polypropylene, 2022

The oil crisis in 1973 meant lower supplies and higher prices for the resource from which most plastics were made, but it had little long-term effect on the plastic boom. While global plastic production soon picked up again, strategies for reducing or recycling plastic were slow to emerge. In the 1990s, designers like Jane Atfield began to develop a new aesthetic based on recycled plastic. Meanwhile, the issues arising from the plastic boom have etched themselves in our collective consciousness: mountains of packaging waste to microplastic in the soil, in the oceans, and in our bodies. We are living in the Plasticene.

Reduce, Reuse, Recycle

How can we overcome the global plastic waste crisis? And what role can design – alongside industry, consumers, and politics – play in the process? These are the questions addressed in the third part of the exhibition. It presents projects like »The Ocean Clean Up«, »Everwave«, »Sungai Watch« or »The Great Bubble Barrier«, which were developed to filter plastic waste from rivers and oceans, but it also makes clear that an effective reduction of plastic waste must start at a much earlier point. Reducing packaging and single-use products requires a circular design approach that takes account of an object's entire life cycle. An example for this is the Chilean start up Algramo that established a circular refill scheme for standard household products using smart packaging technology.

Meanwhile, the ordinary plastic drinking bottle serves as a case study to show that reducing the high quantity of single-use plastic requires a combination of infrastructures – in this case, deposit-return schemes, adapted production facilities, and alternatives such as drinking fountains. Closed recycling loops have already been envisioned for furniture as well: The »Rex Chair« (2011/2021) designed by Ineke Hans can be returned to the manufacturer for repairs or recycling.



LEFT:
Precious Plastic, machines for shredding, extruding
and pressing plastic

OPPOSITE PAGE, CLOCKWISE:
Helen Kirkum, »Sneaker Archaeology 002 – Components«,
2022

Flipflop Kubwa, 2021

Ineke Hans, concept photo for the REX armchair (2010/2021)
made from recycled Polyamide 6, manufactured by
Circoform

FlipFlopi, sailing dhow made from recycled plastic, 2019



In an interactive, workshop like space of the exhibition visitors can learn about different types of plastic and recycling systems. It features infographics, films and information on mechanical and chemical recycling and is centred around the »Precious Plastic« project initiated by Dave Hakkens in 2013, which illustrates how plastic waste can be turned into a valuable resource. An interactive work station featuring a near infrared spectroscope, invites visitors to scan and sort plastic waste pieces. Exhibits from different recycling initiatives demonstrate how plastic waste can be turned into new products once it is considered a resource.

» By setting up the Seaweed Circle we're telling a story about water, the environment and climate change, but it also gives insight in a future where we can grow and innovate within a new, circular and sustainable market.«

Klarenbeek & Dros



Rethinking Plastics

Today, many scientists and designers are going back to exploring materials that are based on renewable rather than fossil resources and often referred to as bioplastics. The exhibition presents experiments with algae by Dutch designers Klarenbeek & Dros, research on mycelium at the Karlsruhe Institute of Technology, and a variety of projects dealing with other promising technologies. The British start-up company Shellworks, for example, harnesses microorganisms to create plastic, while the University of Portsmouth and ETH Zurich are both testing enzymes for plastic degradation.

As a whole, the exhibition »Plastic: Remaking Our World« offers a reassessment of plastic in today's world that is both critical and differentiated. Interviews with designers, scientists, and activists underline the importance of an interdisciplinary approach in which politics, industry, science, and design collaborate closely to tackle the plastic problem. While it is true that each of us is a catalyst for change, there will be no simple remedy to this issue. For this reason, the exhibition aims to address the bigger picture of plastic and its complex role in our world: by analysing how we came to be so dependent on plastics, by showing how we can change this, and by reimagining possible futures for this contested material.



PREVIOUS PAGE:
Eric Klarenbeek, Maartje Dros, 3d printed vases from algae based bioplastics

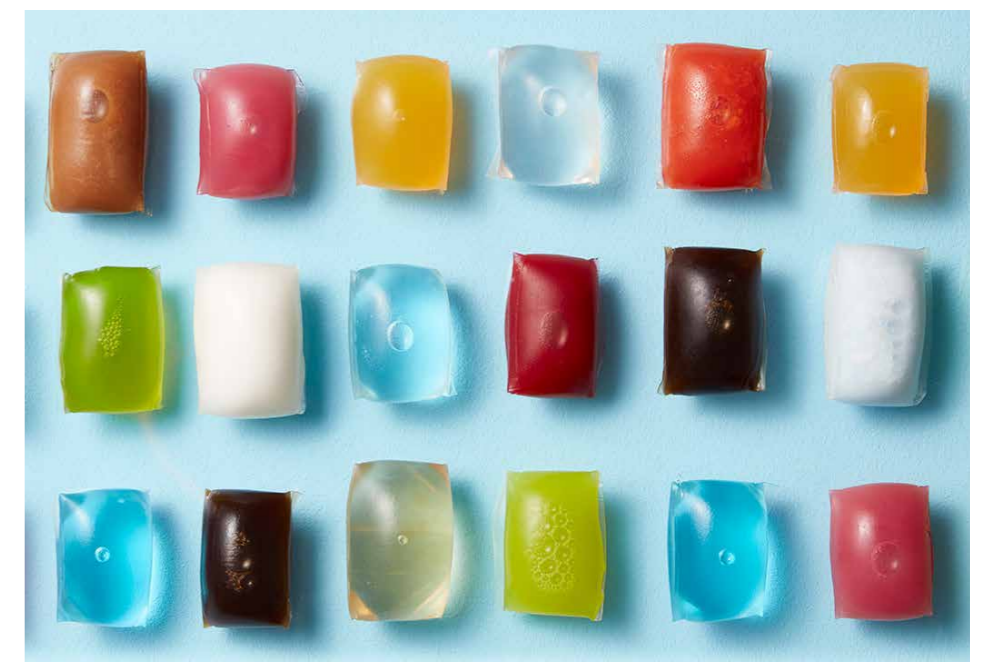
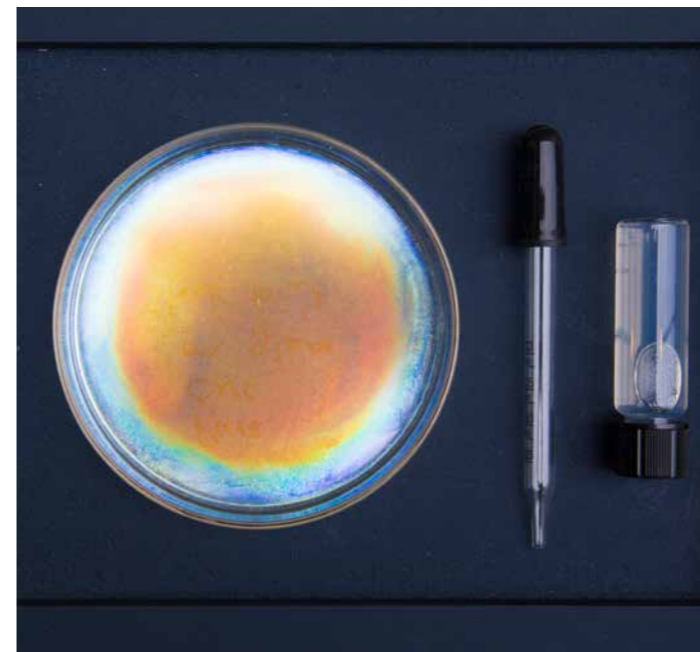
ABOVE:
Formafantasma, Botanica, natural shellac, sawdust, beeswax, 2011

OPPOSITE PAGE, CLOCKWISE:
Eric Klarenbeek, Maartje Dros, plastic production based on algae

Mycotex in collaboration with Karin Vlug, MycoTEX seamless jacket

Oohoo, biodegradable and edible food packaging made from seaweed and plants

Elissa Brunato with collaborators Hjalmar Granberg and Tiffany Abitbol, Bio iridescent Sequin made from wood cellulose, 2019



Facts

Exhibits

Design objects, posters, film, photography, prototypes and material samples

Curatorial Team

Vitra Design Museum: Jochen Eisenbrand, Mea Hoffmann

V&A Dundee: Charlotte Hale, Laurie Bassam

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Exhibition Tour

»Plastic: Remaking Our World« is available to international venues until approximately 2027. The exhibition travels including all exhibits, contextual films and images, exhibition architecture and all media equipment.

Exhibition floor space

600 – 1,000 m² / 6,000 – 10,000 sq ft

Venues

Vitra Design Museum, Weil am Rhein
26 March – 4 September 2022

V&A Dundee
maat, Lisbon
National Museum of Singapore
Hyundai Motorstudio Busan

➤ Tour Dates

Publication

The exhibition is accompanied by an extensive book published by the Vitra Design Museum.



Editors: Mateo Kries, Jochen Eisenbrand, Mea Hoffmann
Co-Editors: Johanna Agerman Ross, Corinna Gardner, Charlotte Hale, Laurie Bassam, Anniina Koivu

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Installation Shots



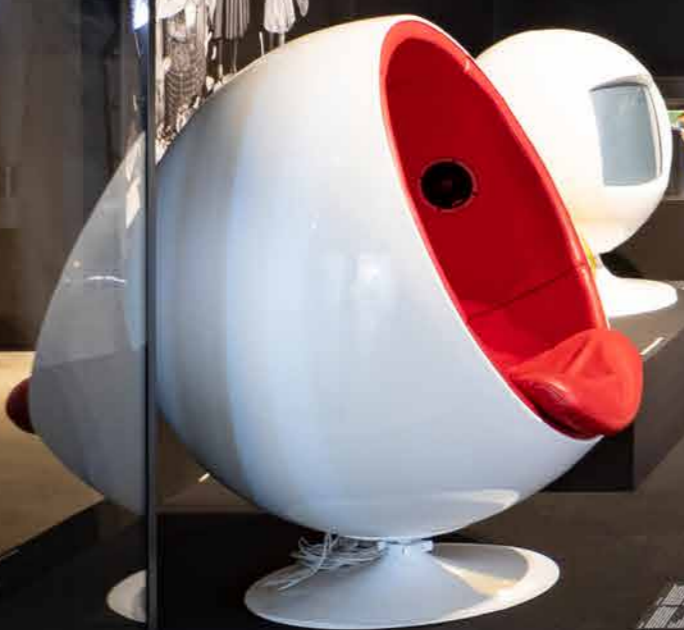






PETROMODERNITY

PLASTICENE





Sortierstation

An dieser Sortierstation können verschiedene Kunststoffabfälle mit einem Lichtspektroskop gescannt, erkannt und anschließend sortiert werden.

Sorting Station

At this sorting station, various plastic waste can be scanned with a light spectroscope to be identified and then sorted.

PET



Polylethylen-terephthalat
Polyethylens-Terephthalat



HDPE



Polylethylen mit hoher Dichte
High-Density Polyethylene



PVC



Polvinylchlorid
Polyvinyl Chloride



LDPE



Polylethylen mit geringer Dichte
Low-Density Polyethylene



PP



Polypolypropylen
Polypropylene



PS



Polystyrol
Polystyrene



OTHER

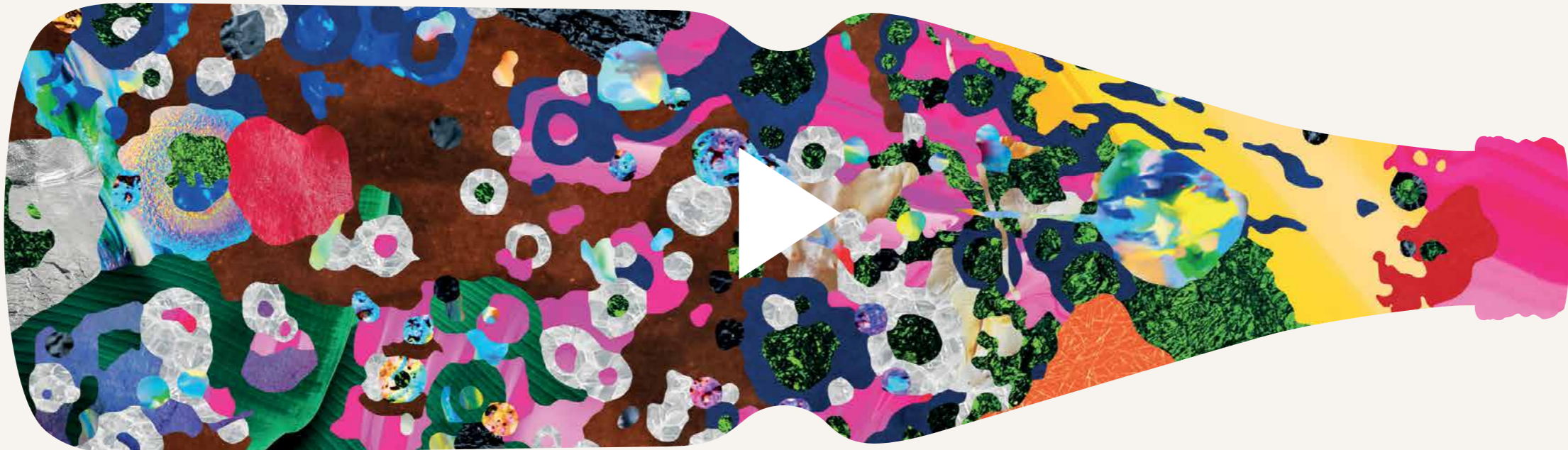


Sonstige Kunststoffe
All Other Plastics



Plastic Remaking Our World

Vitra Design Museum
26.03.2022 – 04.09.2022





Mandy Barker, EVERY... Snowflake is Different, Archival pigment print, 2011

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