



# OQ Ruhrchemie site

Presentation

July 12, 2023





# OQ Chemicals footprint

## Production sites and offices across the globe



### Production sites

**Bishop**  
approx. 45 employees

**Bay City**  
approx. 180 employees

**Amsterdam**  
approx. 25 employees

**Oberhausen**  
approx. 800 employees

**Marl**  
approx. 70 employees

**Nanjing**  
approx. 50 employees



# OQ Chemicals

## World Market Leader

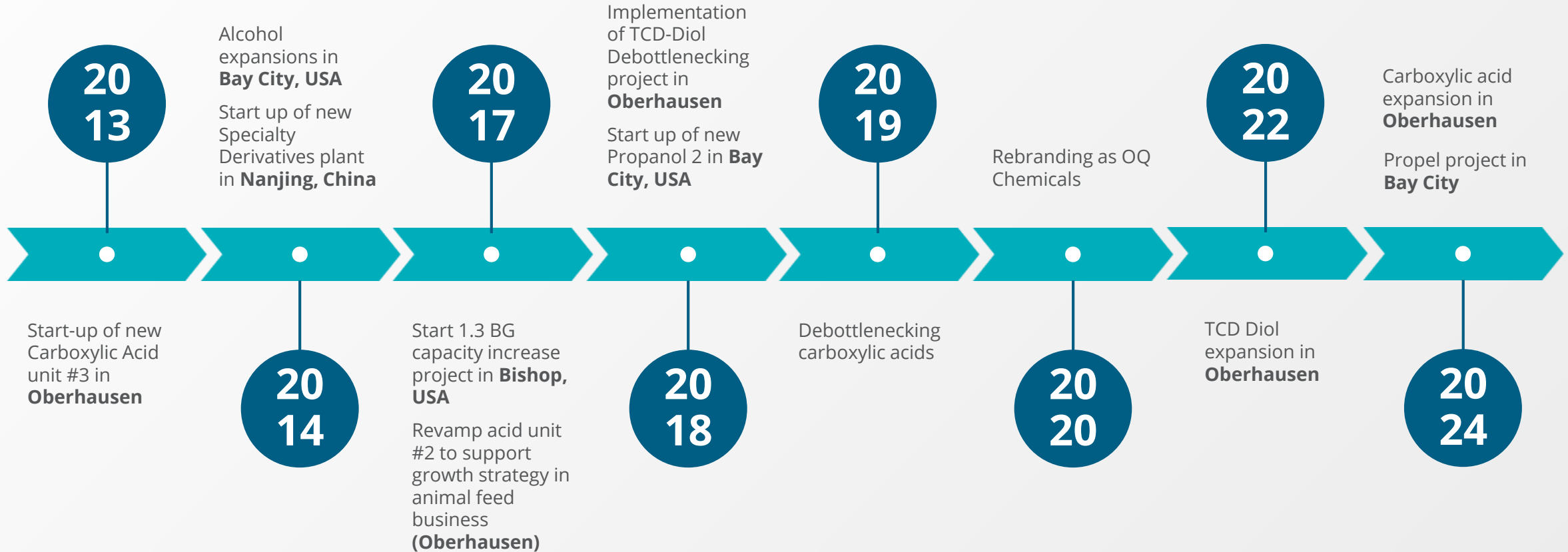
- OQ Chemicals is an **industry leader** in products like Propanol, 2-Ethylhexanol, Butanol, Butyl Acetate and 1,3 Butylene Glycol.
- OQ Chemicals is the **market leader in synthetic fatty acids** in the C3 to C9 acid range.
- We have **strong market positions** in Europe and the USA.
- We increase **capacities to strengthen our market position** and to facilitate our customers' growth.
- Our **1,000+ customers across different industries** guarantee our business stability and robustness.





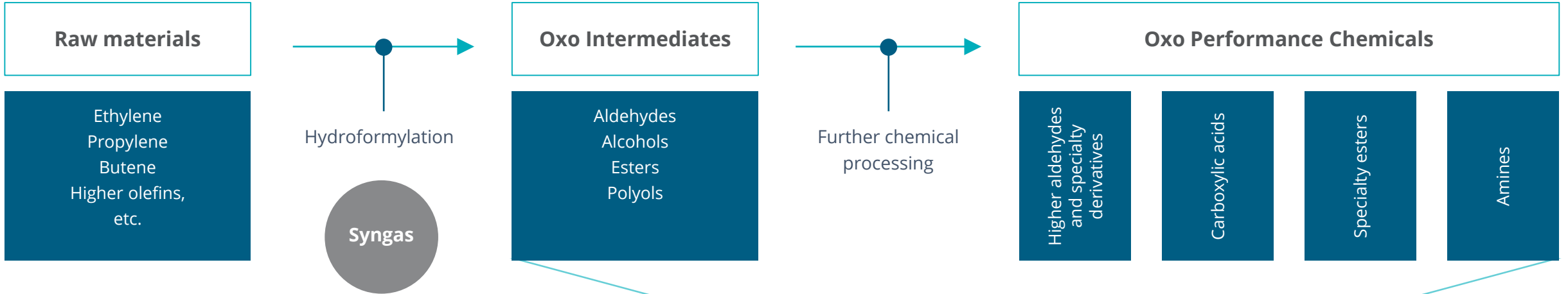
# Strategic highlights

## Continuing investments to remain a market leader



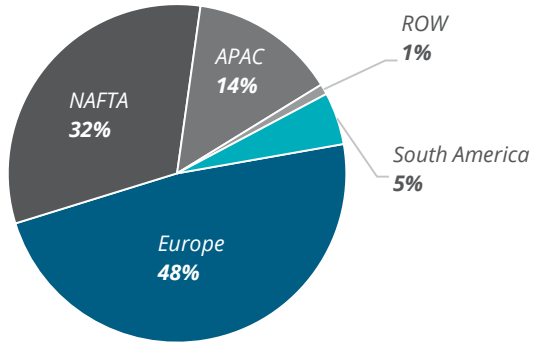


# OQ Chemicals Value Chain



OQ Chemicals products can be found in many everyday items

Sales by regions







# Diversified product portfolio

## Applicable in a wide range of end uses

### Oxo Intermediates

#### Aldehydes

**Applications:**  
Lacquers, polymer additives,  
flotation reagents,  
flavors and fragrances

#### Alcohols

**Applications:**  
Surface coatings,  
lacquers and paints, polymer  
additives, lubricants, solvents,  
disinfectants, printing inks

#### Esters

**Applications:**  
Chemical intermediates,  
cosmetics, paints and coatings,  
printing inks, pharmaceuticals,  
solvents, plasticizers

### Oxo Performance Chemicals

#### Higher aldehydes

**Applications:**  
Chemical intermediates,  
flavors and fragrances

#### Polyols

**Applications:**  
High solids coatings, powder  
coatings, cosmetics, lubricants,  
polymer additives

#### Carboxylic acids

**Applications:**  
Lubricants, siccatives, flavors and  
fragrances, polymer stabilizers,  
feed additives, corrosion inhibitors

#### Amines

**Applications:**  
Agrochemicals, rubber chemicals,  
polymer additives, pharmaceuticals,  
surfactants, dye intermediates,  
specialty chemicals, corrosion  
inhibitors

#### Specialty esters

**Applications:**  
Plasticizers, lubricants,  
coalescing agents

#### Higher alcohols

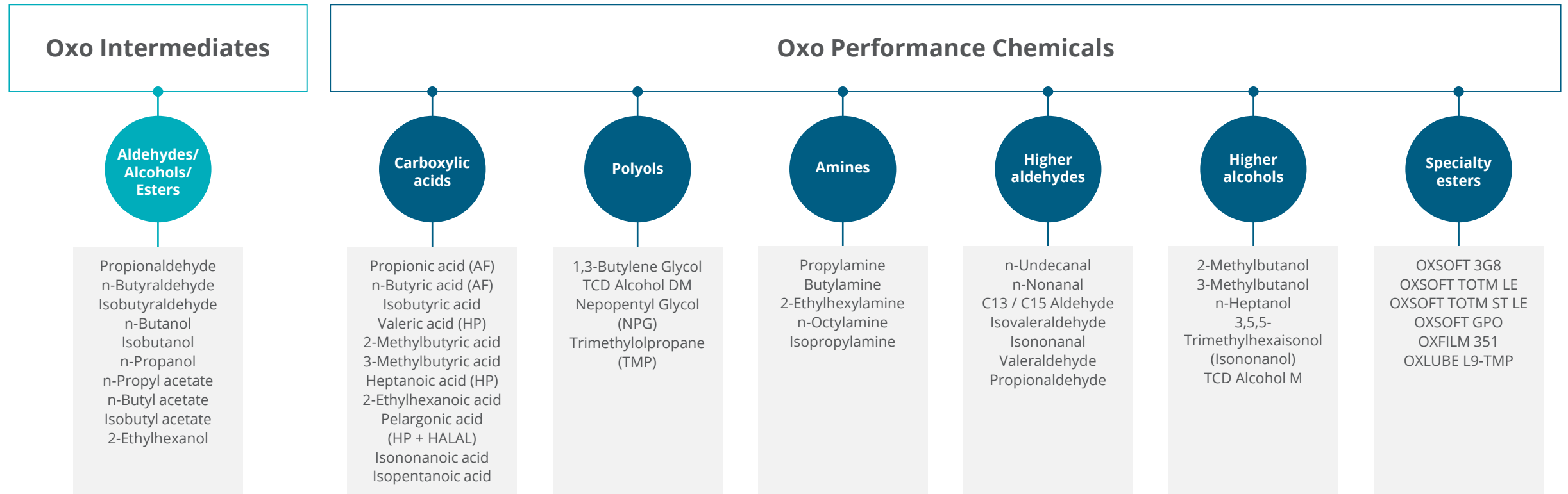
**Applications:**  
Plasticizers, lubricants,  
flavors and fragrances, surfactants



# Diversified product portfolio

## Applicable in a wide range of end uses

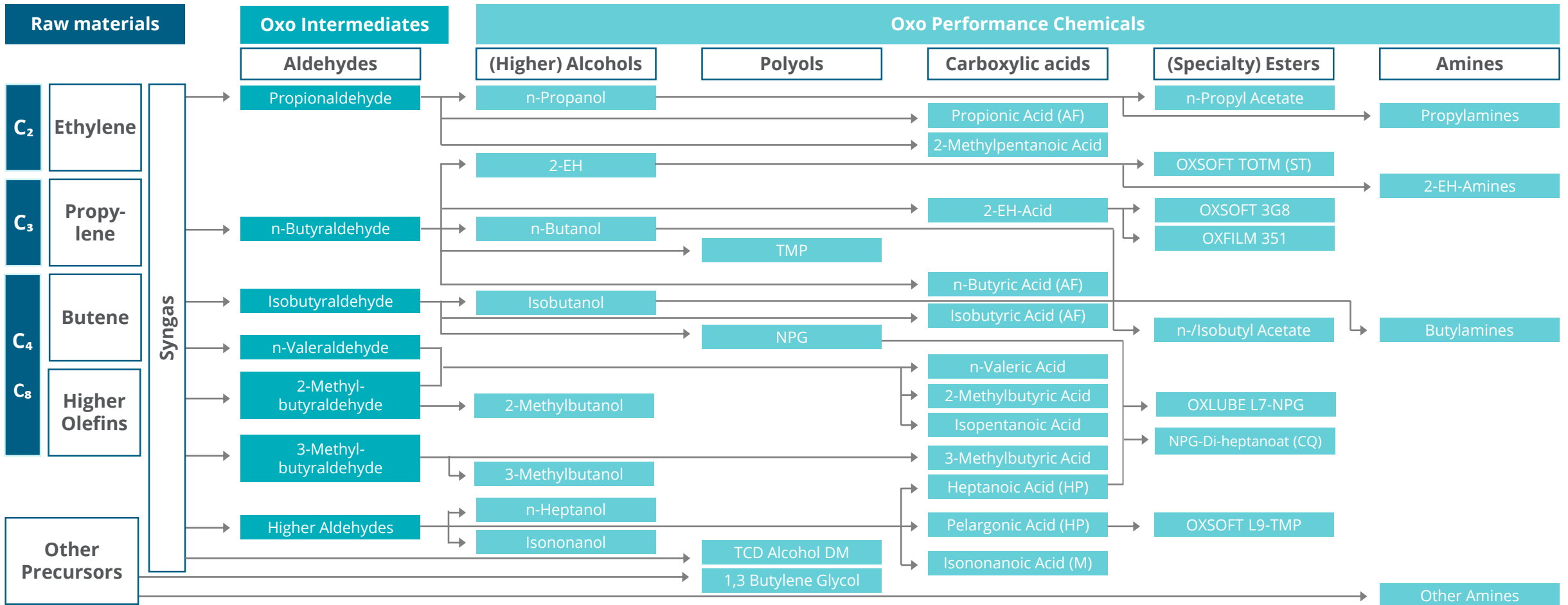
The product range of OQ Chemicals comprises more than 70 chemicals, which are subsequently processed by the industry. This diagram provides an overview of our general product portfolio (excluding customized products).





# Integrated production platform

## Overview of the process behind our products

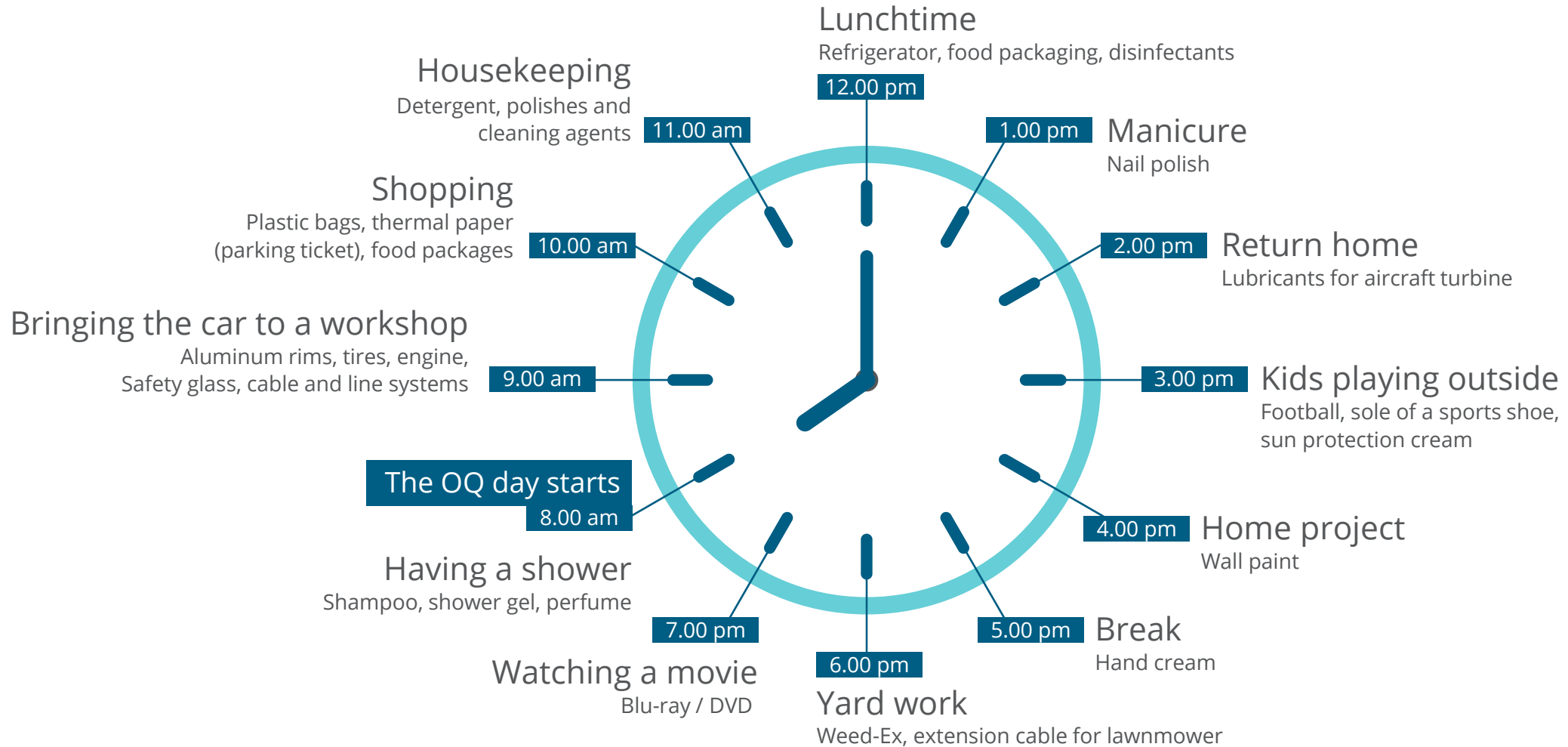






# A Day with OQ Chemicals

## We're with you every hour of the day



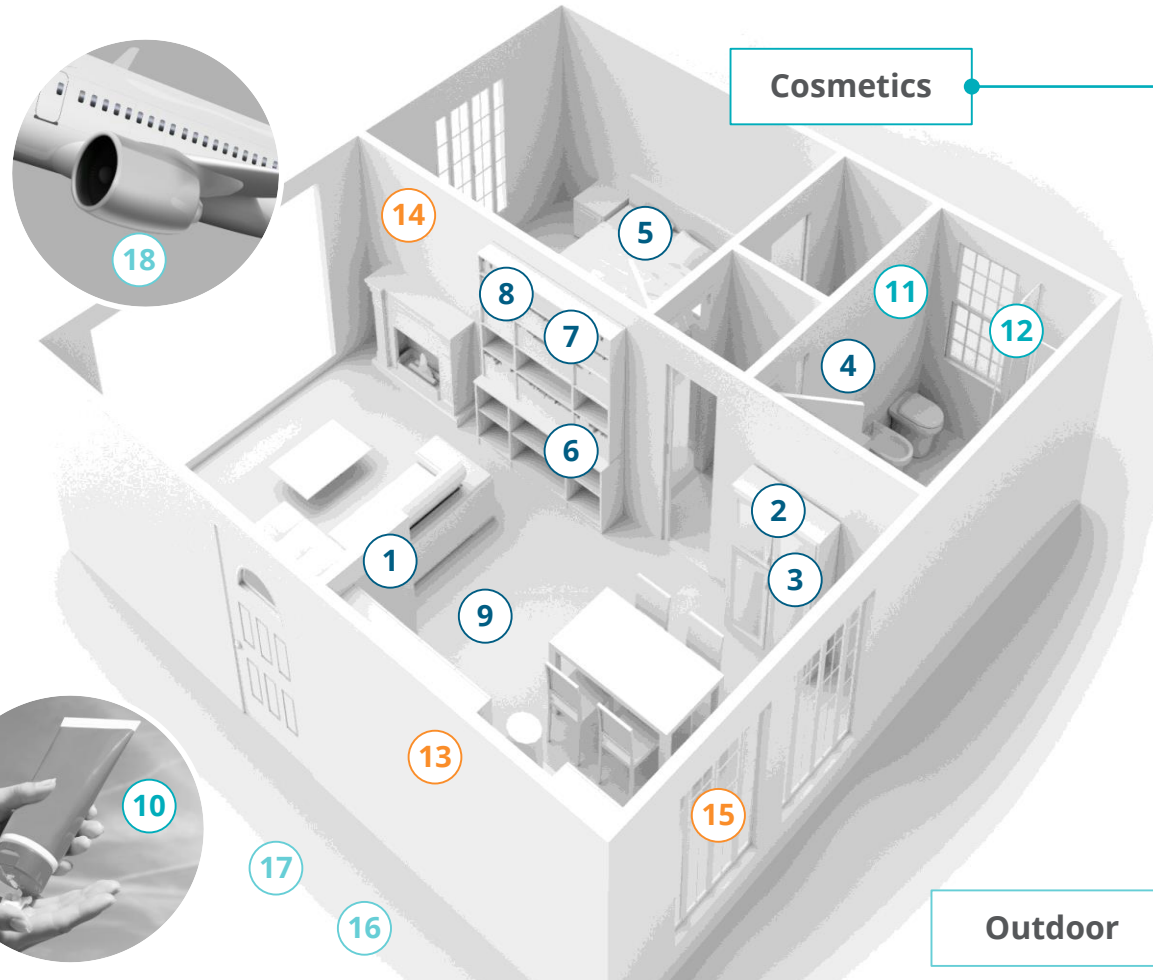


# OQ Chemicals in our daily lives

## Modern living

### Household

- ① Valeric, Heptanoic, Isononanoic Acids: **Refrigeration system lubricants**
- ② Propanol: **Disinfectants**
- ③ Neopentyl Glycol: **Appliance coatings**
- ④ Pelargonic Acid: **Detergents**
- ⑤ 2-Ethylhexanoic, Isononanoic Acids: **PU flexible foams**
- ⑥ 2-Ethylhexylamine: **Home pest control**
- ⑦ Oxsoft TOTM: **Cables**
- ⑧ TCD Alcohol DM: **Glass fiber, Blu-ray**
- ⑨ Pelargonic Acid: **Auxiliary in food production**



### Cosmetics

- ⑩ 2-Ethylhexanoic, Isononanoic Acids: **Sun care products**
- ⑪ 1,3-Butylene Glycol: **Skin cream**
- ⑫ Propionaldehyde, Isovaleraldehyde, Heptanol, Isononanol, Undecanal: **Perfume and fragrances**

### Buildings

- ⑬ n-Butanol: **Exterior architectural paints**
- ⑭ 2-Ethylhexanoic Acid: **Interior architectural paints**
- ⑮ 2-Ethylhexanoic, Isononanoic Acids: **PVC window frames**

### Outdoor

- ⑯ Pelargonic Acid: **Garden Herbicides**
- ⑰ Isobutyraldehyde: **Garden fertilizers**
- ⑱ Valeric-, Isononanoic, Heptanoic Acids: **Jet turbine lubricants**



# The OQ Ruhrchemie site



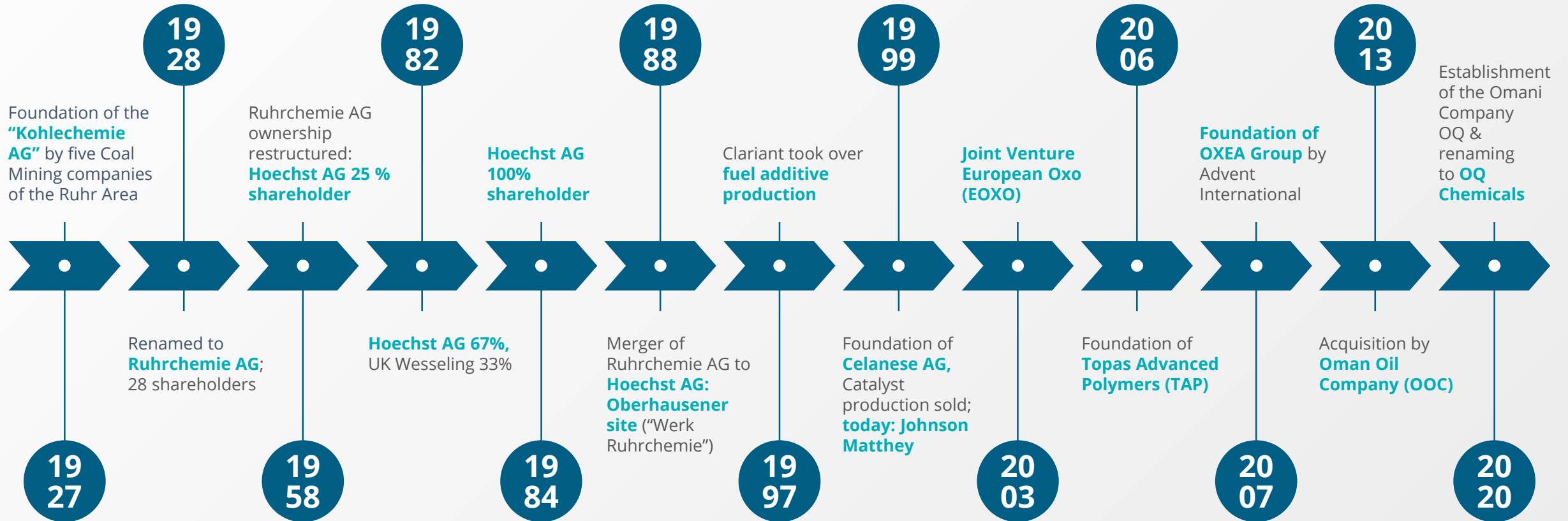


# Overview over the plant



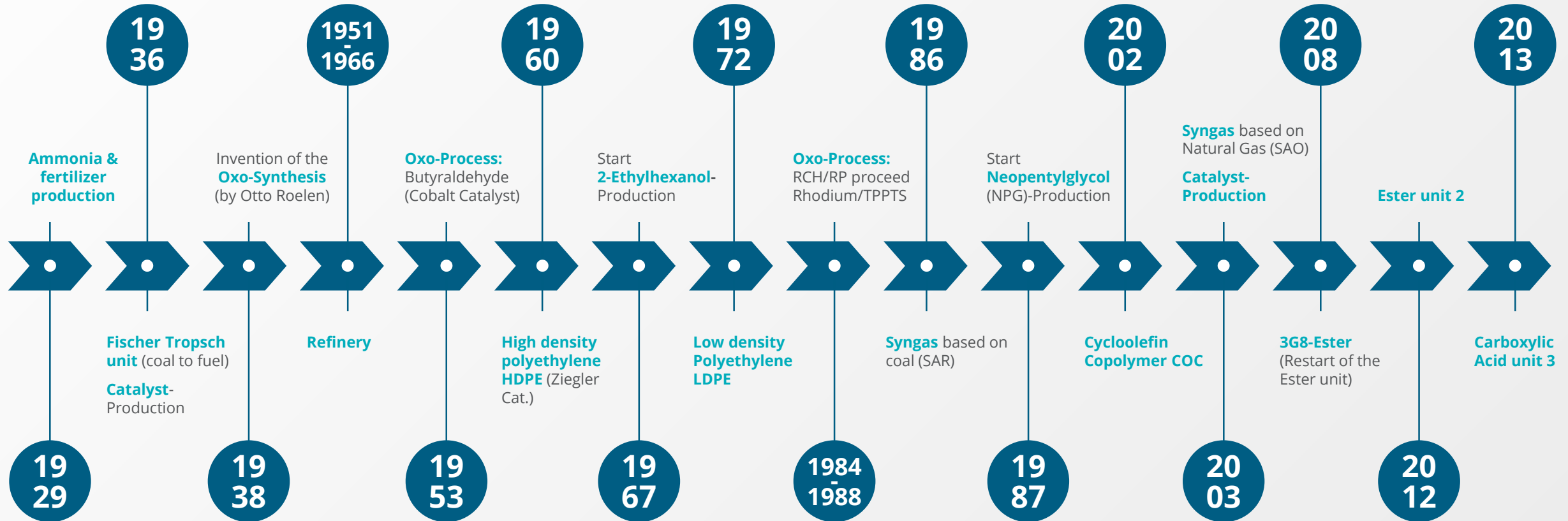


# OQ Ruhrchemie site History





# OQ Ruhrchemie site Technical Milestones







# Investments

## *Examples*

- New turbine in power plant
- New connection to the external energy network
- Renewal of the substations
- Connection to the new Emscher canal
- Improvement of site safety
- New carboxylic acid unit
- Extensions in the diol unit



*We invest continuously at the site in new units and expansion measures as well as in infrastructure and maintenance.*



# Success factors

**Term Sheets** for all services and utilities.  
Basic, mandatory and individually selectable services

**High reputation and continuous communication**  
with authorities, relevant stakeholders and the neighborhood

**Efficient Logistics**  
(pipelines, roads and railroads)

**Secure supply** of raw materials, energy and other services

Possibilities for further **extensions**

*The customer can concentrate on his core business:*

*The production of chemicals*



# Safety

## *Safety precautions include:*

- **Safety instruction** at the site gate. No one may work at the site without first having received this instruction
- **Investments** in safety equipment
- Our full-time **works fire department**
- A **task force on site** that, in the event of an accident, takes the required steps to protect people and the environment and to limit damage
- In-plant **safety campaign** (i=safety)



*Safety is our top priority at all times. Together with the authorities and consultant experts, we do our utmost every day to ensure the highest level of safety for our employees and for local people.*





# Apprenticeship

- Support for **site partners** in the selection of apprentices
- Apprenticeship in **various professions** :  
Chemical operator, process control electrician, industrial mechanic, cutting machine operator, mechatronics technician, information technology clerk, industrial clerk, laboratory assistant
- **Equipment:** training rooms, computer area, laboratories, workshops, special exercise rooms



*Development, organization and delivery of training as needed for us and our site partners.*



# Apprenticeship

## OQ Chemicals and site partners

Job	Duration of Apprenticeship	Apprentices	Thereof Men	Thereof Woman
Chemical Production Technician IHK	3,5 years	31	26	5
Lathe assistant IHK	3,5 years	1	1	-
Electronics Technician for Automation Technology IHK	3,5 years	3	3	-
Industrial mechanic IHK	3,5 years	5	5	-
Industrial Management Assistant IHK	3 years	3	1	2
Chemical Laboratory Technician IHK	3,5 years	4	2	2
Information technology Management Assistant IHK	3 years	-	-	-
Mechatronics Technician IHK	3,5 years	7	7	-
Summe		54	45	9

Update: July 2023



# Overview site partners

## Chemicals and Polymer Producer



**Specialty chemicals  
Oxo Products**  
(based on propylene)



**Industrial Gases**



**Flow improver**



**Catalysts**



**High Pressure  
Polyethylene**



**Low Pressure  
Polyethylene**



**Cycloolefine  
Copolymers  
(COC)**





# Scope of Services



## Environmental protection, safety, analytic

Environmental data, fire brigade, safety security etc.



## Energy, utilities

Electricity, steam, compressed air, condensates



## Communication

Information technology, Public Relations



## Crisis management,

Training, Providing a crisis team in the case of an incident



## Local contract management

Contracts with third parties, finance



## Technical Services

Assembling, maintenance, workshops, procurement

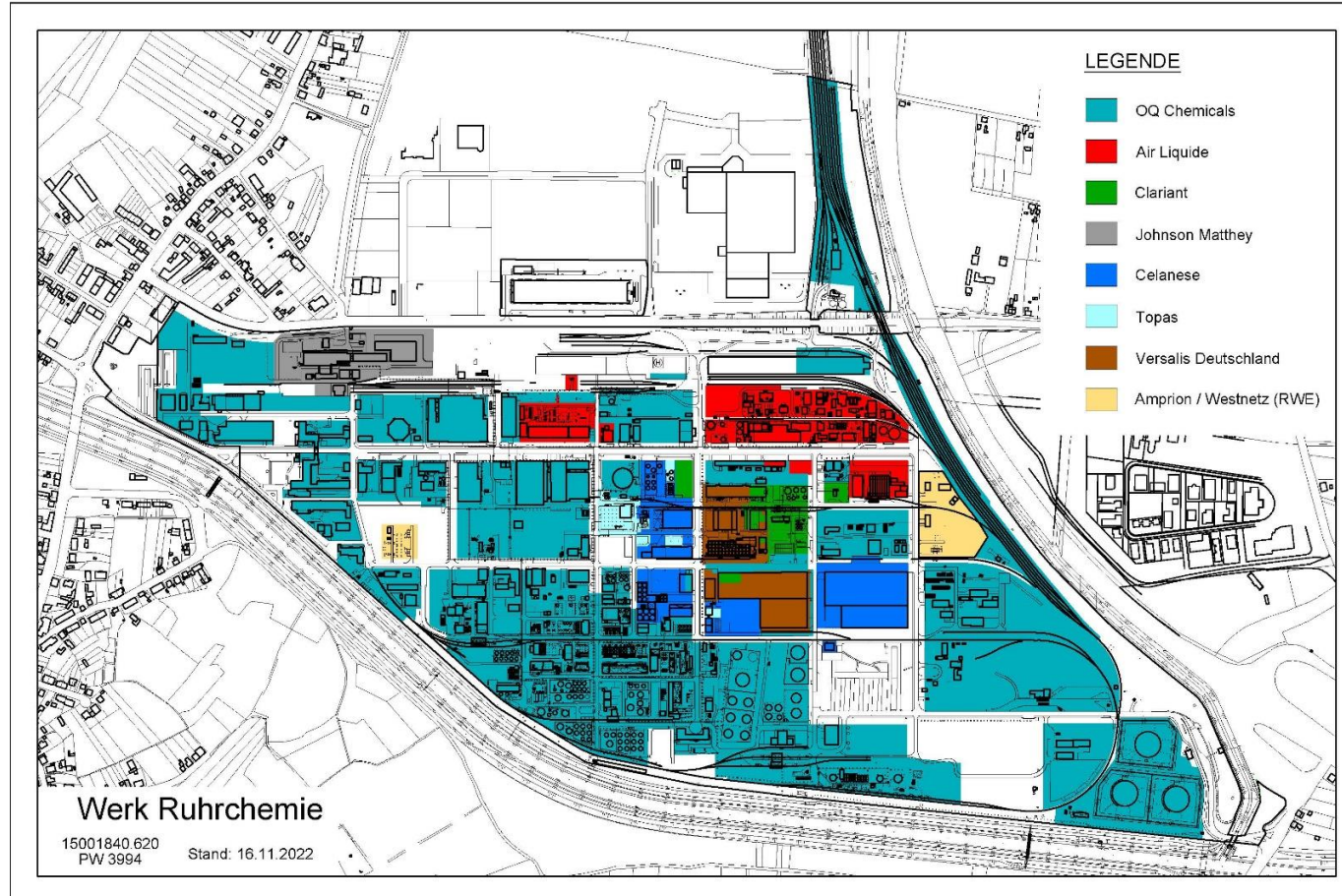


## Site infrastructure

Streets, railways, waste-water channels



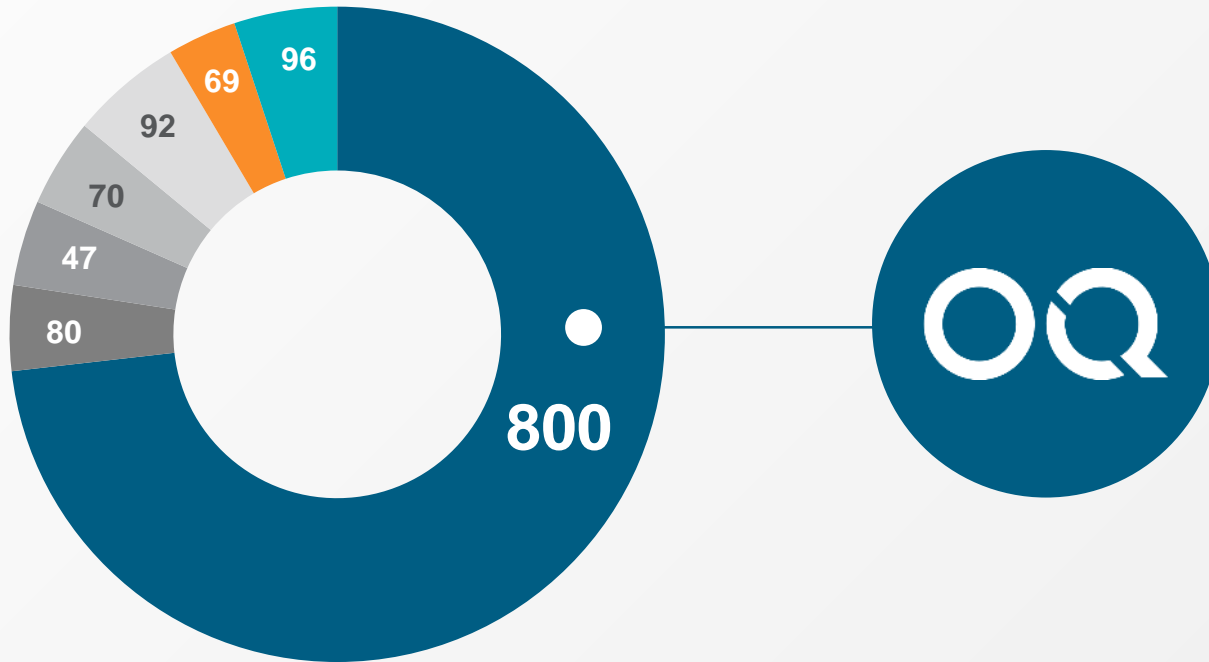
# OQ and other site companies





# Employees by site partners

About 1,200 highly educated, experienced and motivated employees\* (2/2023)

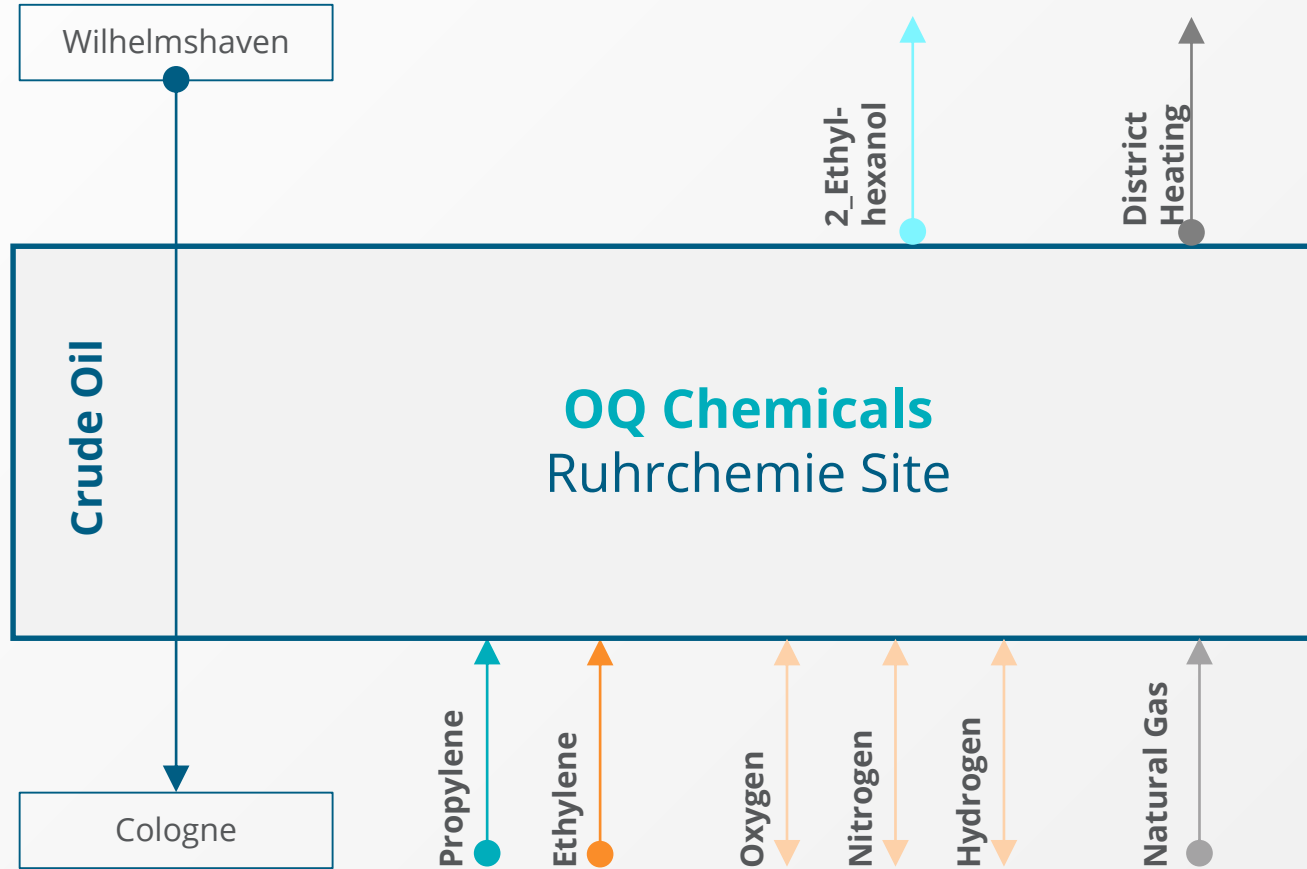


- OQ
- Johnson Matthey
- Air Liquide
- Clariant
- Celanese
- Topas
- Versalis

\*without Apprentices



# Pipelines



## Pipeline Legend

- Crude Oil  
Nord-West Oelleitung (NWO)
- Propylene  
Propylene pipeline Ruhr GmbH (PRG)
- Ethylene  
Äthylen-Rohrleitungsgesellschaft (ARG)
- District Heating  
Energie-Versorgung Oberhausen (EVO)
- Natural Gas  
Open Grid Europe (OGE)
- 2-Ethylhexanol  
OQ Chemicals
- Oxygen, Hydrogen, Nitrogen  
Air Liquide



# ISO Certificates of OQ Chemicals

## Certificates in **EUROPE**

- DIN EN ISO 9001
- DIN EN ISO 14001
- DIN ISO 45001:2018
- DIN EN ISO 50001
- HACCP
- ISCC PLUS
- SCCP
- GMP+ B1
- EcoVadis Rating Certificate 2021
- FAMI-QS
- Kosher Certification
- AEO-Certificate

## Certificates in **USA**

- ISO 9001:2015
- ISO 14001:2015
- Kosher Certification
- Halal Certification

## Certificates in **Asia**

- ISO 9001:2015
- ISO 14001:2015
- 45001:2018







**Site Partners**







# Air Liquide

## Industrial gases



**Air Liquide** operates several production plants, tank farms and logistics facilities on the OQ Ruhrchemie site. Two air separation units (ASUs) break ambient air down into its constituents of oxygen, nitrogen and argon.

In the partial oxidation (POX) plant, Air Liquide produces synthesis gas, pure hydrogen and steam for the OQ site grid from oxygen and natural gas. These products are important raw materials for the production operations of the companies located at the site.



# Clariant

## Flow improvers

### CLARIANT

**Clariant** uses high-pressure polymerization processes to produce a range of additives.

With around 70 employees at the Ruhrchemie site, we are a small, highly specialized Clariant facility that produces various substances that are added to diesel fuel and heating oil to improve their behavior at low temperatures.



# Johnson Matthey Catalysts



**Johnson Matthey** is among the world's leading providers of sustainable technologies. Together with our customers, we use our latest research findings to develop solutions that make a real difference for the planet. At the Oberhausen site, Johnson Matthey produces catalysts based on three metals: nickel, cobalt and copper. These catalysts are used in a wide range of specialty chemicals to make chemical processes selective, efficient and, in turn, more environmentally friendly.



# Versalis

## High Pressure Polyethylene



**Versalis Deutschland** produces LDPE (low-density polyethylene) and EVAC (ethylene vinyl acetate copolymer) at the Oberhausen site. This industrial facility was put into operation in 1972.

The products are suitable for a wide range of applications and are used by our customers for end products as diverse as packaging, food, hygiene and greenhouse films. They are also used for tubing, foams, injection moldings and compounds for the household goods, footwear, packaging, pharmaceutical, automotive and sports industries.



# Celanese

## Low Pressure Polyethylene



At the Oberhausen site, **Celanese** manufactures GUR®, an ultra-high molecular weight polyethylene and an important and versatile product from the company's engineering plastics division portfolio.

The uses of GUR® polyethylene are not limited to the automotive and medical industries. In the form of filters, fibers and membranes, sheets and profiles, it is also used for example in the manufacture of ski bases, drinking bottle filters and highlighter refills.





# Topas Advanced Polymers

## Cyclo-olefins – copolymers



**Topas Advanced Polymers** produces TOPAS®, a technical plastic with a wide range of applications. These include PE bottles used in the packaging industry and pillow packs for protecting fragile goods.

This transparent, glass-like and high-purity plastic is used in medical applications and in the optical and electrical industries.



**Thank you...**

