



OQ Ruhrchemie site

Presentation

March 2, 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

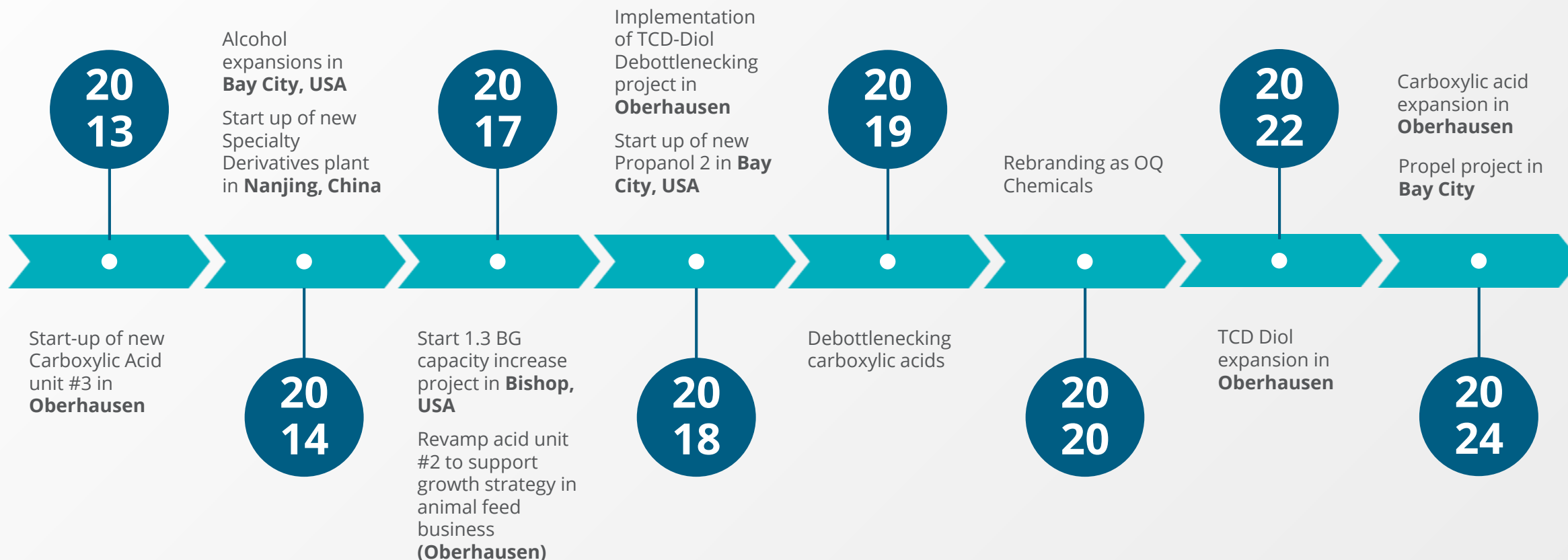
- OQ Chemicals is an **industry leader** in products like Propanol, 2-Ethylhexanol, Butanol, Butyl Acetate and 1,3 Butylene Glycol.
- OQ Chemicals is the **market leader in synthetic fatty acids** in the C3 to C9 acid range.
- We have **strong market positions** in Europe and the USA.
- We increase **capacities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





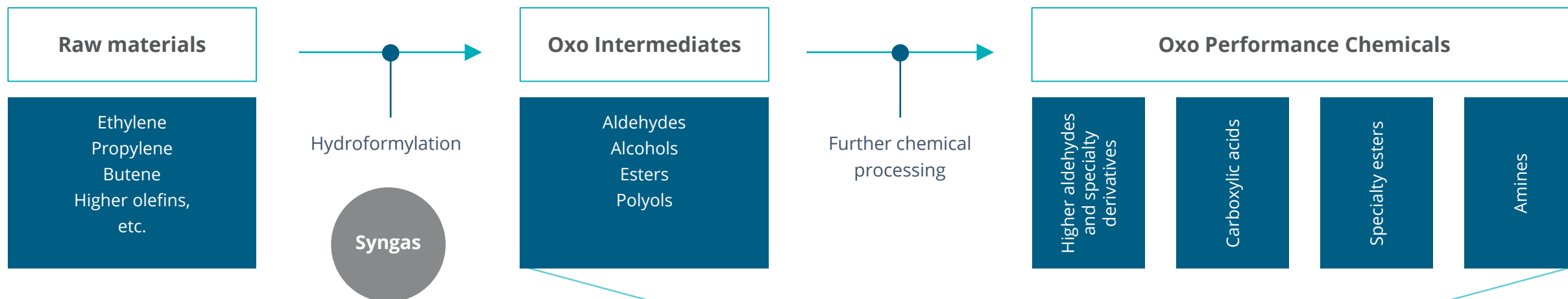
Strategic highlights

Continuing investments to remain a market leader

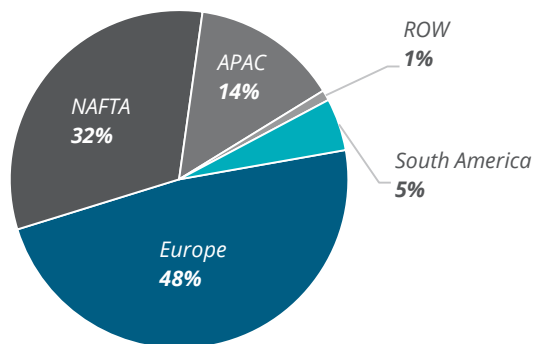




OQ Chemicals Value Chain



Sales by regions



OQ Chemicals products can be found in many everyday items





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

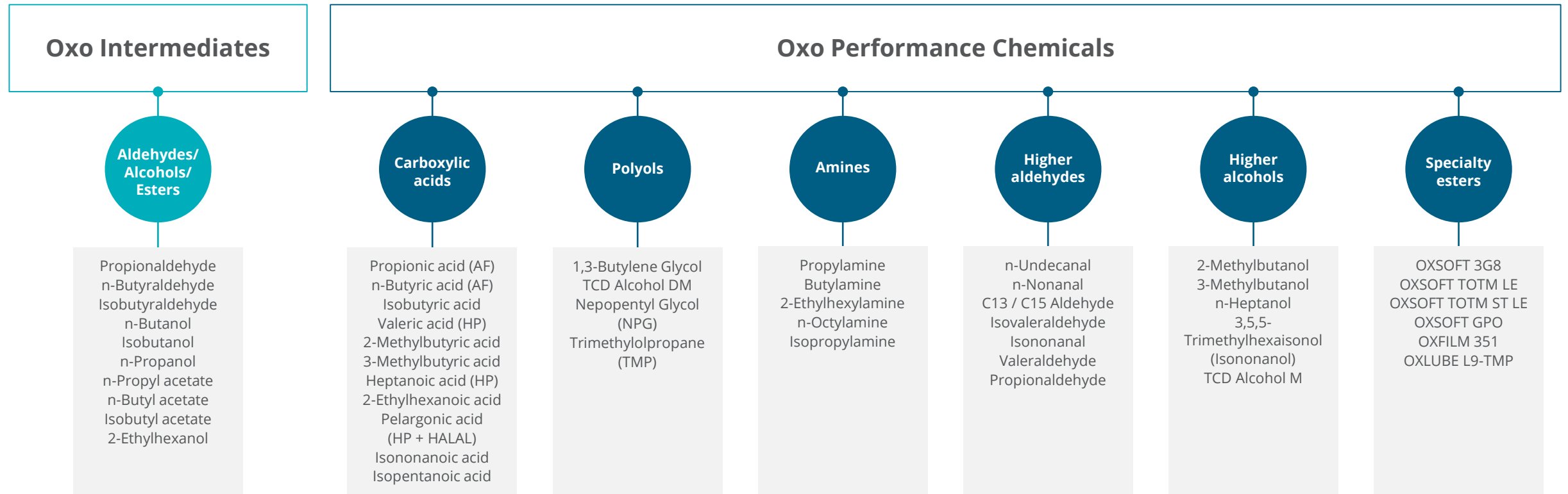
Applications:
Plasticizers, lubricants,
flavors and fragrances, surfactants



Diversified product portfolio

Applicable in a wide range of end uses

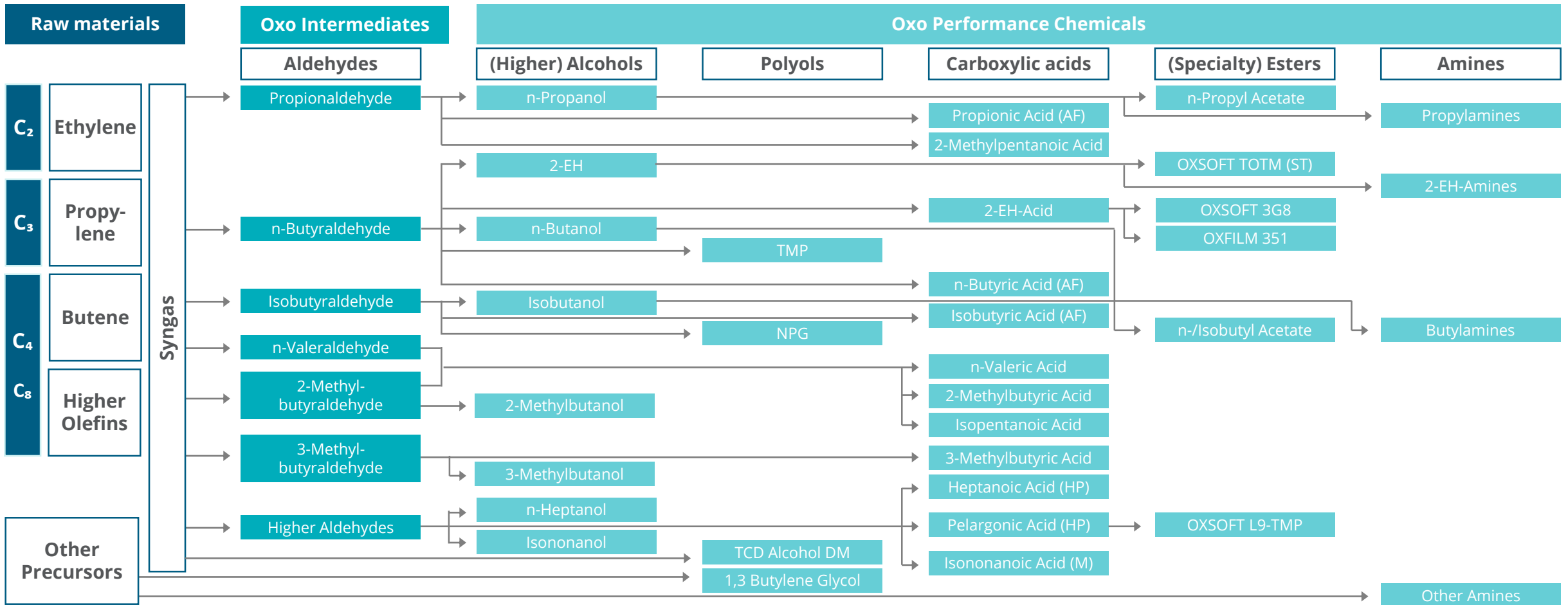
The product range of OQ Chemicals comprises more than 70 chemicals, which are subsequently processed by the industry. This diagram provides an overview of our general product portfolio (excluding customized products).





Integrated production platform

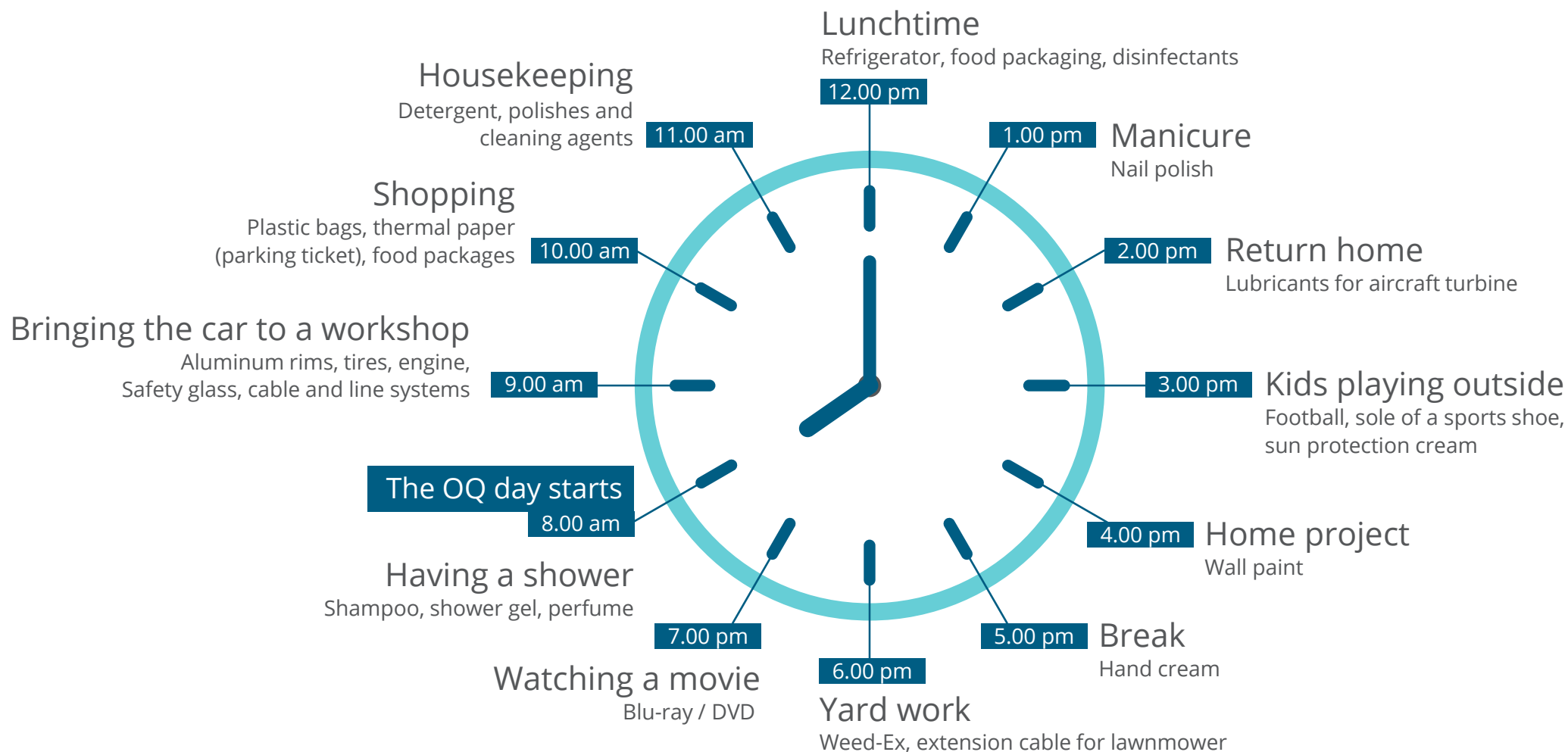
Overview of the process behind our products





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

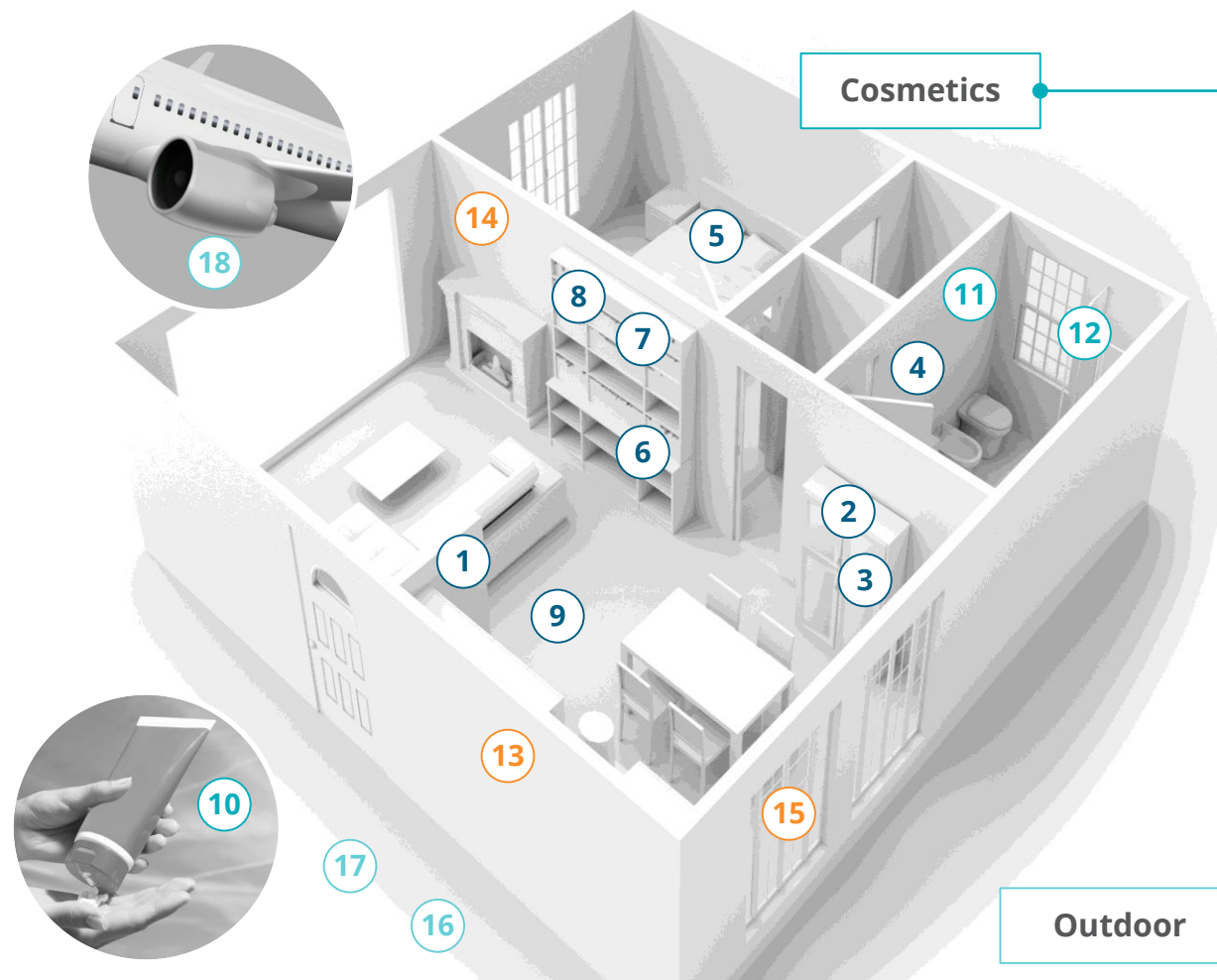
- ⑩ 2-Ethylhexanoic, Isononanoic Acids: **Sun care products**
- ⑪ 1,3-Butylene Glycol: **Skin cream**
- ⑫ Propionaldehyde, Isovaleraldehyde, Heptanol, Isononanol, Undecanal: **Perfume and fragrances**

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

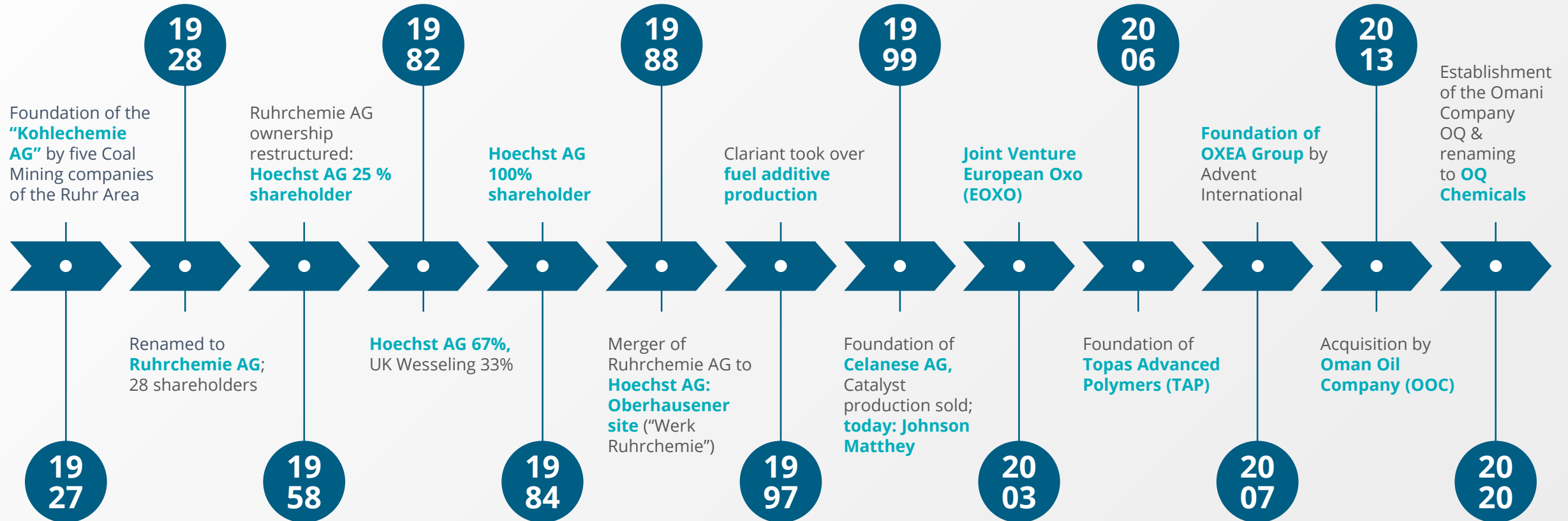


Overview over the plant





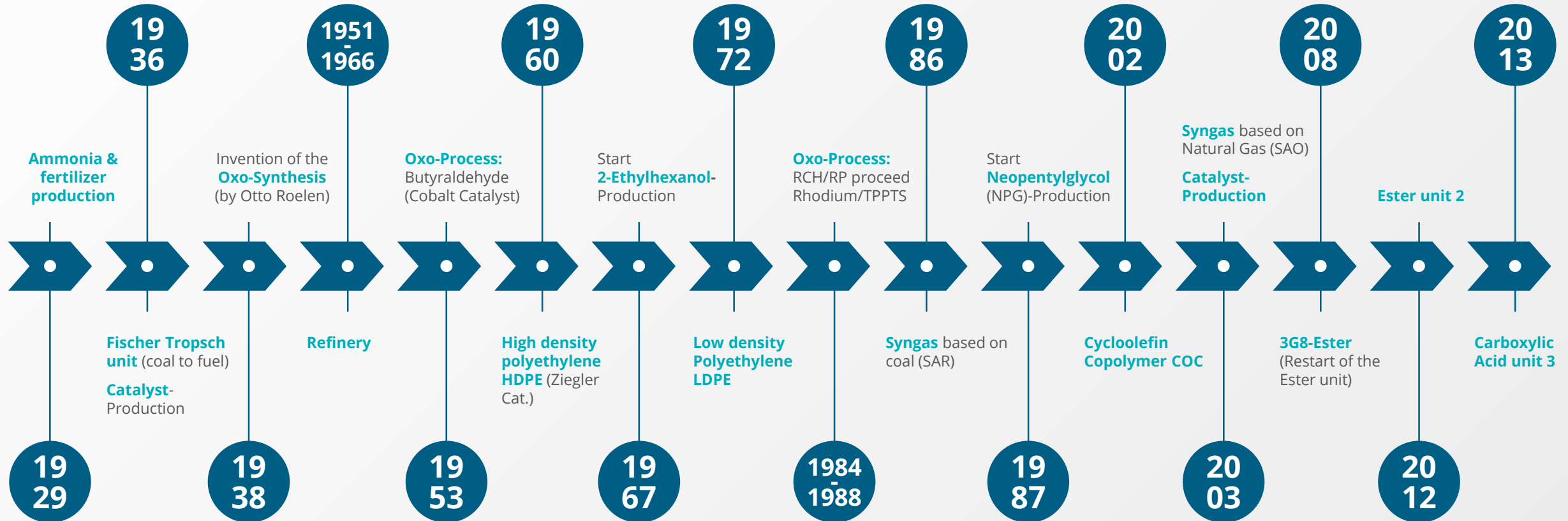
OQ Ruhrchemie site History





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	38	31	7
Lathe assistant IHK	3,5 years	1	1	-
Electronics Technician for Automation Technology IHK	3,5 years	4	4	-
Industrial mechanic IHK	3,5 years	5	5	-
Industrial Management Assistant IHK	3 years	3	1	2
Chemical Laboratory Technician IHK	3,5 years	5	3	2
Information technology Management Assistant IHK	3 years	-	-	-
Mechatronics Technician IHK	3,5 years	8	8	-
Summe		64	53	11

Update: February 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

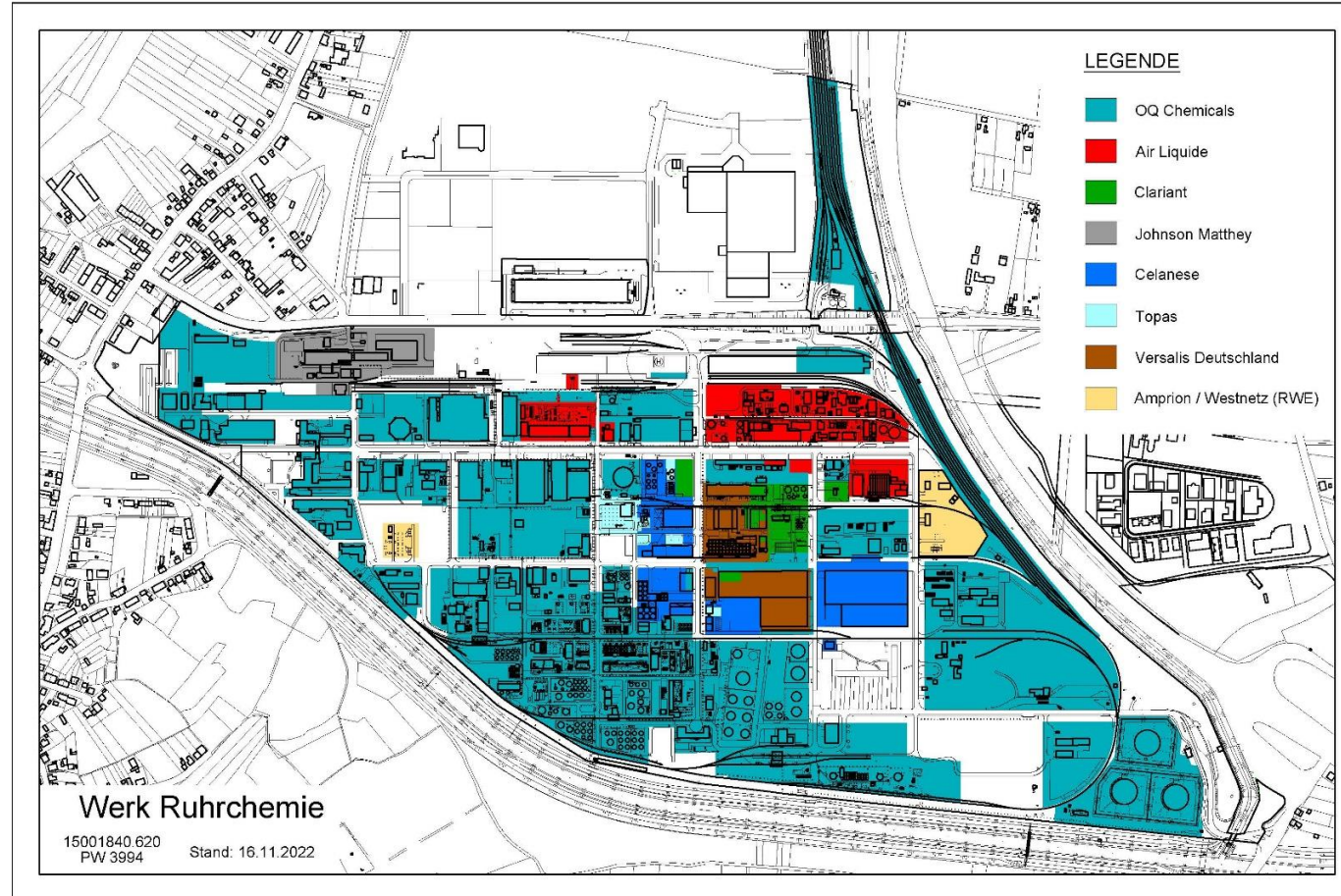


Site infrastructure

Streets, railways, waste-water channels



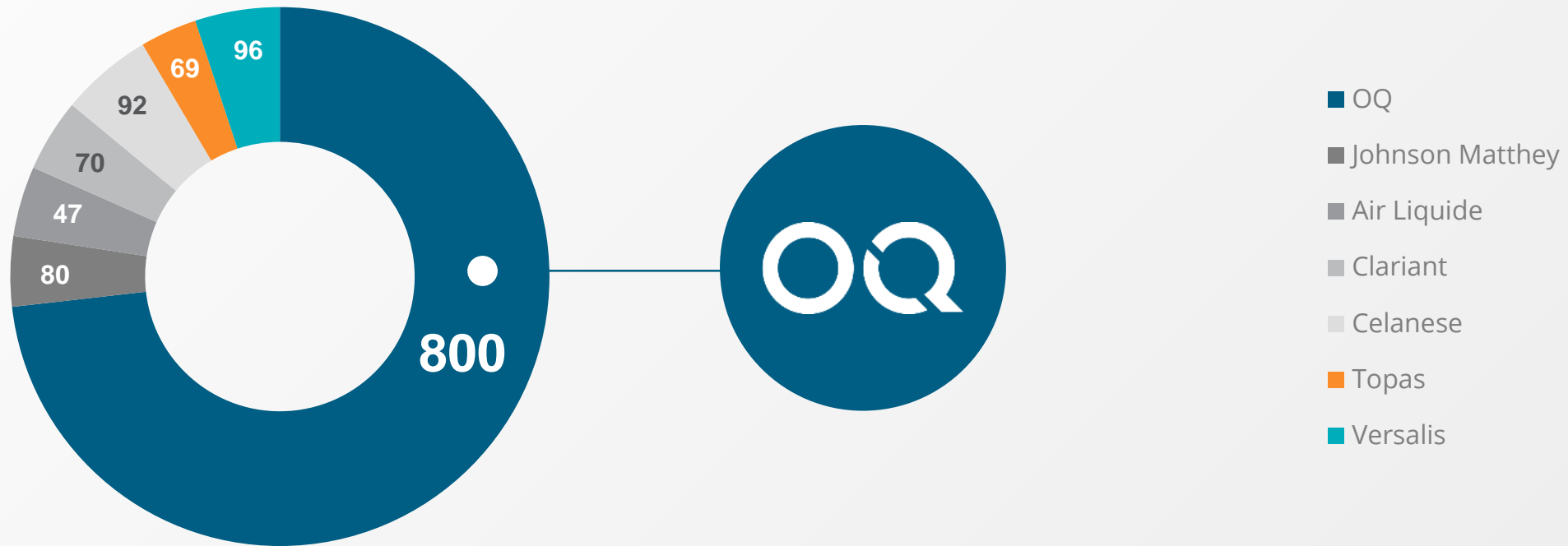
OQ and other site companies





Employees by site partners

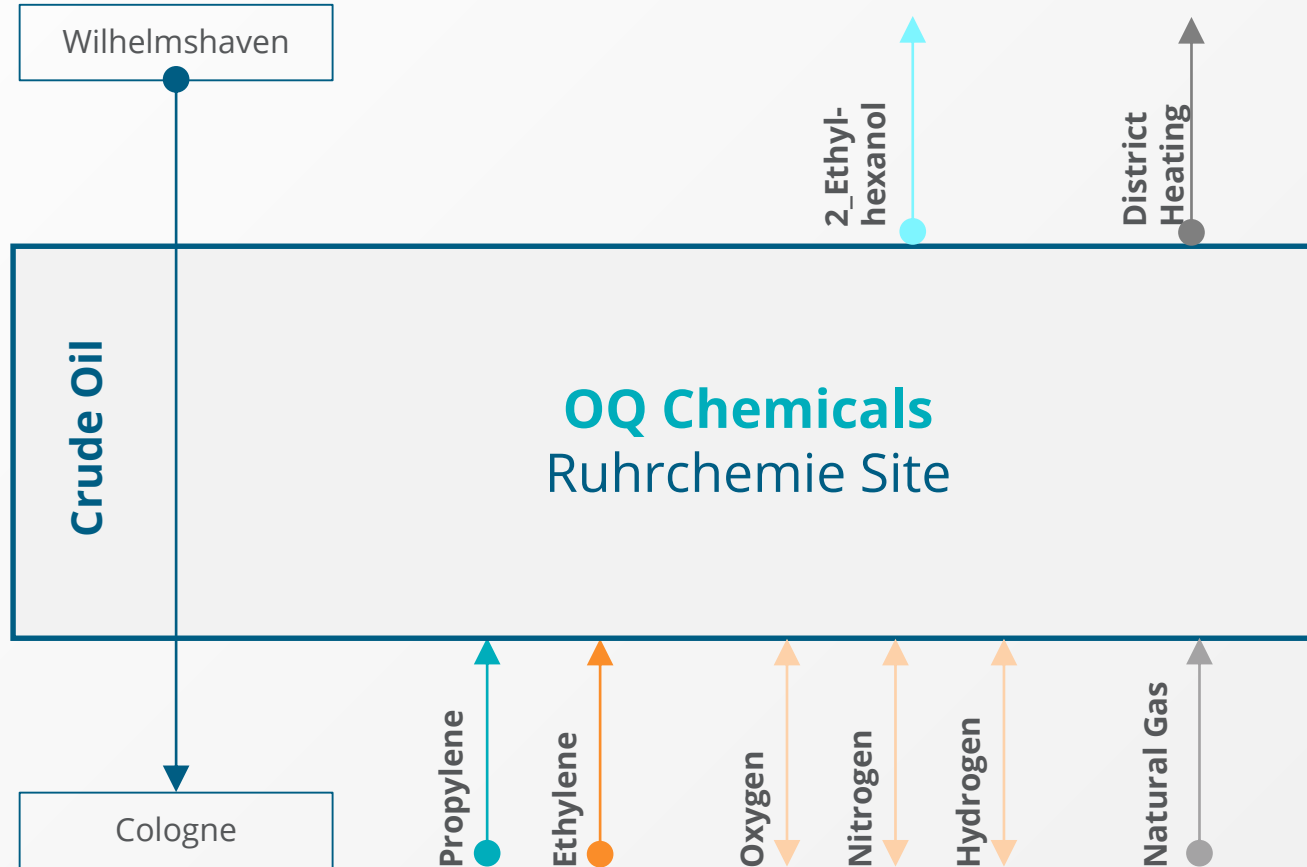
About 1,200 highly educated, experienced and motivated employees* (2/2023)



*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
- SCC^P
- 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...

