

# Custom Synthesis



Contract  
Development and  
Manufacturing



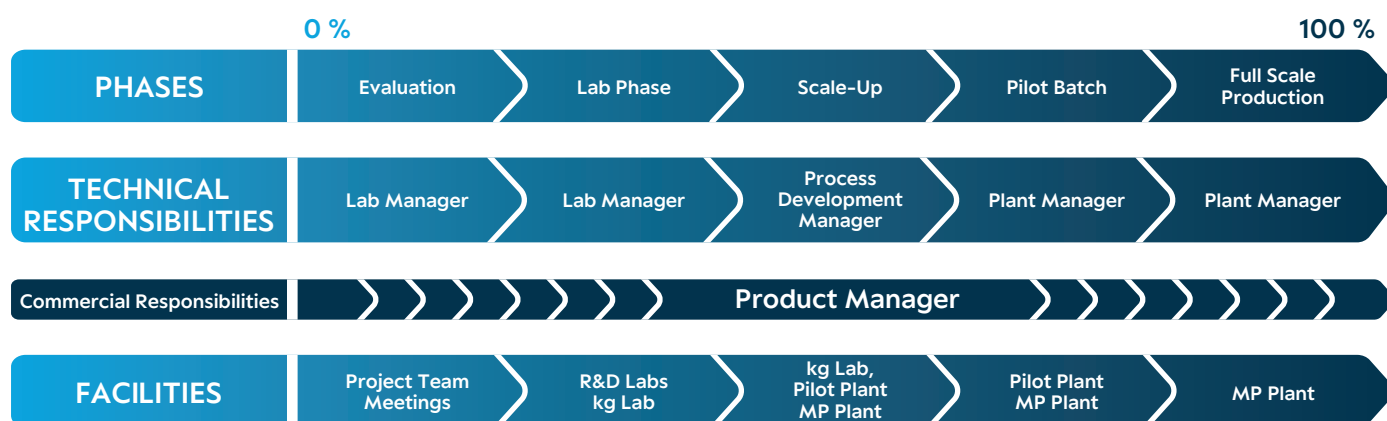
alzchem  
group

## CORE TECHNOLOGIES

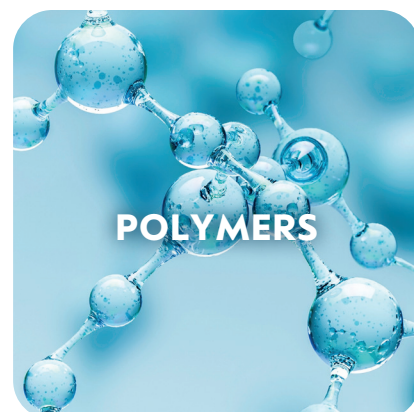
- Large scale Grignard reactions
- Gas phase reactions (ammonoxidation/ ammonolysis)
- Synthesis of N-C-N Heterocycles (pyrimidines, triazines, triazoles)
- Guanylation
- Moisture and oxygen-free conditions
- Air sensitive/organometallic reactions
- Multi-step synthesis

## CHALLENGING CHEMICALS

- Diethyl Ether
- Cyanamide
- Oxalyl chloride
- Isocyanates
- Highly "active" ingredients
- Reactive silanes
- Transition metal organics



## Active ingredients (AI) and intermediates on



# You have an idea,

a simple synthesis recipe or do you already have a technically elaborated synthesis procedure, but not the necessary plant capacity?

## REACTION TYPES & SUBSTANCES

- Dangerous substances
- Air sensitive/organometallic reactions
- Titanium- and aluminum- -halides and -alkyls
- Substances with low ignition point (e.g. diethylether)
- Highly toxic substances
- Intermediates and active substances

## EQUIPMENT

- 43 Reactors with a total reactor volume of 340 m<sup>3</sup>
- Glass-lined, hastelloy, stainless steel
- Temperature range from -30 °C to +250 °C
- 13 Solid/Liquid separation units (centrifuges, pressure nutsches up to 6 m<sup>2</sup>)
- 12 Dryers (paddle and nutsch dryers with 2–9 m<sup>3</sup>, up to 200 °C)
- 5 Distillation columns (+ short path distillation)
- Wiped film evaporator
- Exhaust gas incineration and waste water treatment

## Alzchem's expertise is your benefit

- **Know-how** over 100 years combined with innovation
- **Efficiency**, e.g. through tailor-made solutions, low emissions and minimized waste materials
- **Flexibility**, e.g. in quantities, packaging, logistics and individual requirements
- Each project is a **"joint collaboration"** including open discussions and full transparency regarding process development and production
- Alzchem is a reliable partner for you who values a **secure supply chain** and **high environmental standards**
- Alzchem has **long-standing experience** in many fields of organic synthetic chemistry
- Continuous Process Improvement – We develop an optimized process for your product

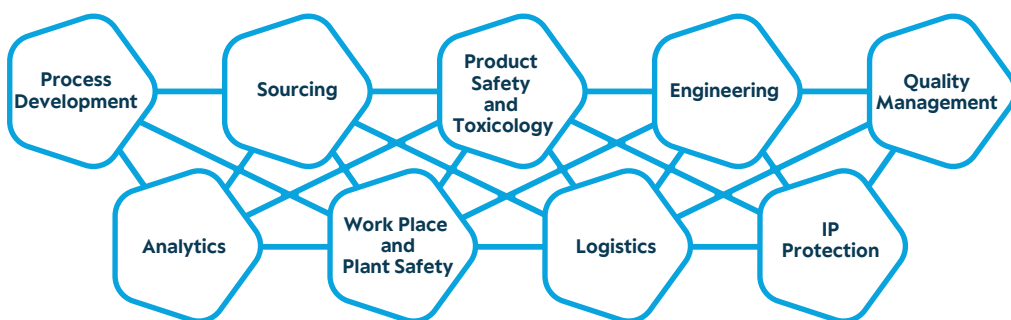
## a contract basis for various industries



# Successful growth through teamwork

		MULTIPURPOSE PLANTS		
UTILITIES		LARGE	MEDIUM	SMALL
Steam	6 bars / 160 °C	✓	✓	✓
Brine	-20 °C	✓	✓	✓
	-50 °C	✓	-	✓
Heat transfer oil	up to 200-250 °C	✓	✓	✓
MATERIALS				
Steel grades	1.4571	✓	✓	✓
	1.4539	✓	✓	✓
	Hastelloy	-	-	✓
Glass-lined steel		✓	✓	✓
Graphite Heat Exchanger		✓	✓	✓
REACTORS				
Number		8	6	9
Volumes	up to m <sup>3</sup>	22	8	2.5

## Support



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