



PARTNER FOR COOPERATION

VUOS



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VUOS - KEY TECHNOLOGIES

ORGANOMETALLIC AND CRYOGENIC CHEMISTRY

- Organolithium Chemistry
- Organozinc Chemistry
- Reactions with Grignards reagents

TRANSITION-METAL CATALYSIS

- Homogeneous and Heterogeneous Transition-Metal Catalysis
- Cross Couplings (Suzuki, Kumada, Heck, etc.)

HAZARDOUS AND UNPLEASANT CHEMISTRY

- Phosgenation
- Halogenation (PCl_3 , POCl_3 , SOCl_2 , BCl_3 , BBr_3 , etc.)
- Reactions with Nitroalkanes
- Nitration
- Sulfonation

REDUCTION AND HIGH-PRESSURE REACTIONS

- Reduction with Sodium borohydride, Red-Al, Superhydride, etc.
- Reductive Alkylation
- Reductive Amination
- Hydrogenolysis
- Dehalogenation

PRODUCTION CAPACITY

KILOLAB, SEMI-PILOT UNIT AND PRODUCTION UNIT

- 52x glass lined reactors, total vol. 85 000 L (500-6 000 L)
- 16x stainless steel reactors, total vol. 29 000 L (1 000-6 000 L)
- 8x high performance rectification columns
- Sufficient filtration capacity (nutsches, centrifuges)
- Computer controlled
- Many different types of small equipment in Kilolab and Semi-Pilot Unit

CLEAN ROOM CLASS D

- Glass-lined vessels 400 and 630 L
- Stainless steel vessels 400 and 630 L
- Filtration, Centrifuging and Drying

PHOSGENATION

- Reactors up to 1 600 L
- 2x high performance rectification columns
- Laboratory phosgenation units from 1 to 30 L
- In mother company Synthesia reactors up to 10 000 L

LOW TEMPERATURE, RLi, RMgX

- Reactors up to 400 L, cooled down to $-80\text{ }^\circ\text{C}$ and 630 L, cooled down to $-60\text{ }^\circ\text{C}$

HYDROGENATION

- Autoclaves up to 1 000 L
- Temperature max. $200\text{ }^\circ\text{C}$
- Pressure max. 130 bar

BIOLOGICAL EVALUATION OF MEDICAL DEVICES

According to the ISO 10993 in accredited testing laboratory according to EN ISO/IEC 17025

TOXICOLOGICAL ASSESSMENT OF COSMETICS

NONCLINICAL TOXICOLOGICAL STUDIES FOR THE REGISTRATION OF PHARMACEUTICALS FOR HUMAN USE

According to the ICH, OECD or FDA testing guidelines

CHEMICALS

REACH

According to Regulation (EC) No.1907/2006

VUOS has valuable experience from two previous periods of registration. The third registration deadline for substances from 1 to 100 tons per year is on 31 May 2018.

Be ready for the 2018 deadline and start preparing now.

CLP

According to Regulation (EC) No.1272/2008

CLP Regulation introduces the United Nations Globally Harmonized System (UN GHS) for classification and labeling into EU law. Deadline for reclassification of mixtures is 31 May 2015.

VUOS helps you...

TESTING OF BIOCIDAL PRODUCTS AND PLANT PROTECTION PRODUCTS

Biocidal products according to Regulation (EC) No. 528/2012 as amended - in vitro and in vivo methods

Plant protection products according to Regulation (EC) No. 1107/2009 as amended - in vitro and in vivo methods

SCOPES

TESTING SERVICES

- Toxicology
- Ecotoxicology
- Analytics
- Physico-chemical properties

EXPERT SERVICES

QUALITY ASSURANCE SYSTEMS

GLP, GMP, ISO 17025, ISO 9001

