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Технические характеристики на инструменты, обеспечивающие синтез компании Sigma-Aldrich

Виды товаров: фотореакторы, электроды для электросинтеза, стеклоуглеродные электроды, алмазные электроды, графитовые электроды, электрододержатели, держатели электрода, магниевые электроды, алюминиевые электроды, цинковые электроды, стеклянные ячейки, наборы для высокопроизводительного скрининга, стеклянные шарики с каталитическим покрытием и др.

Photoreactors

Photoreactors provide an all-in-one platform to consistently and reproducibly conduct photoredox catalyzed reactions. Each photochemical reactor consists of a light source and a cooling system to maintain stability of the reactants and products.

Our photoreactors provide versatile and efficient means for performing photochemical reactions from screening to scale-up, with a range of wavelengths, and options allowing multiple photocatalytic reactions to be run in parallel.

- **SynLED Parallel Photoreactor 2.0** – next generation photoredox parallel synthesis
- **LightOx PhotoReact 365 Photoreactor** – photochemical and photobiological reactions
- **Penn PhD Photoreactor M2** – user-defined parameters including temperature, light intensity, fan speed and stirring

In addition, explore our broad portfolio of **photocatalysts**, including acridinium, iridium, and ruthenium catalysts, visible light metal complex photoredox catalysts, and metal-free organic catalysts, for all your photoredox chemistry needs.

Z744035
Penn PhD Photoreactor M2

Z744031
365nm Light Source

Z744032
420nm Light Source

Z188719
Wheaton sample vials
clear, volume 8 mL, cap size 15 - 425, diam. × H 17 mm × 61 mm

Z744037
Multi-Vial Holder Penta - 4mL

Z744038

Multi-Vial Holder Quad - 8mL

Z744061
LightOx PhotoReact 365

Electrosynthesis

Electrosynthesis, or electrochemical synthesis, is a synthesis technique that uses electrical energy to drive chemical reactions to form new compounds. There are many advantages of electrochemistry including novel reactivity, high functional group tolerance, chemoselectivity, and the ability to synthesize highly functionalized or complex compounds that may be difficult to produce by other means. Electro-organic synthesis can generate reactive intermediates that are unstable or difficult to isolate, and then use these intermediates to produce more complex molecules through further electrochemical reactions. In addition, the use of electricity replaces toxic and costly chemicals allowing the synthesis to be completed more efficiently, cleaner, and cheaper following the principles of green chemistry.

SynLectro™ Electrolysis Platform

Our portfolio of electrosynthesis products, including glass cells, PTFE stoppers and sleeves, electrode holders, and electrodes allows researchers to conduct electrochemical reactions safely and efficiently. Our SynLectro™ platform of products is designed to simplify and standardize electrochemical organic synthesis, depending on the specific reaction desired and the scale of the reaction from research to production.

ESYNTH019
SynLectro™ Glassy Carbon Electrode
size 3 mm × 20 mm × 60 mm

ESYNTH022
SynLectro™ Graphite Felt Electrode
size 3 mm × 20 mm × 60 mm

☐
ESYNTH020
SynLectro™ Boron-doped Diamond Electrode
size 3 mm × 20 mm × 60 mm

☐
ESYNTH018
SynLectro™ Graphite Electrode
size 3 mm × 20 mm × 60 mm

☐
ESYNTH002
SynLectro™ 200 mL starter kit

☐
ESYNTH001
SynLectro™ 50 mL starter kit

☐
ESYNTH008
SynLectro™ Electrode Holder

☐
ESYNTH007
SynLectro™ PTFE Electrode Holder

☐
ESYNTH003
SynLectro™ 50 mL Glass Cell with PTFE stopper

☐
ESYNTH006
SynLectro™ 200 mL Jacketed Glass Cell with PTFE stopper

☐
ESYNTH004
SynLectro™ 50 mL Jacketed Glass Cell with PTFE stopper

☐
ESYNTH016
SynLectro™ Magnesium Electrode
size 3 mm × 20 mm × 60 mm

☐
ESYNTH017
SynLectro™ Aluminum Electrode
size 3 mm × 20 mm × 60 mm

☐
ESYNTH015
SynLectro™ Zinc Electrode

size 3 mm × 20 mm × 60 mm

ESYNTH005
SynLectro™ 200 mL Glass Cell with PTFE stopper

Automated Chemical Synthesis

Automated chemical synthesis performs the entire process of chemical synthesis using automated systems. A wide range of compounds, from small molecules to complex organic molecules, can be produced with increased speed and efficiency yet lower risk of human error.

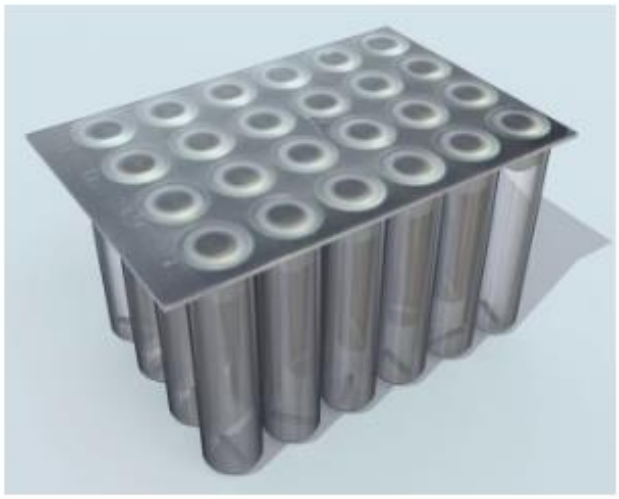
Through our partnership with Synple Chem, we provide chemistry automation to accelerate your research. The Synple automated synthesis platform consists of an automated chemical synthesizer and pre-filled reagent cartridges. Simply add your starting material and the appropriate reagent cartridge into the synthesizer. At the push of a button, the synthesizer generates, isolates, and purifies your products and performs an automated washing sequence to prepare for the next contamination-free synthesis.

Contact Us

Explore our wide selection of reagent cartridges featuring distinct reaction classes, with more than 40 different reagents:

- **N-Heterocycle formation (SnAP) –** converts a broad range of aldehydes into N-heterocycles
- **Reductive amination** – transforms aldehydes or ketones and primary or secondary amines into complex amines
- **Protein Degrader formation –** designed for PROTAC® synthesis with a variety of PEG linker lengths and either VHL or CRBN ligands
- **Biotin tags** – attaches Biotin tags to either aldehydes/ketones via reductive amination or amines via acylation
- **Mitsunobu** – forms carbon-carbon bonds through dehydrative coupling of a primary or secondary alcohol
- **Boc protection** – provices Boc protection of primary and secondary amines
- **Boc deprotection** – removes Boc protection of amines into free amine salts
- **Fluorination** – transforms primary and secondary alcohols into corresponding fluorinated product
- **Silyl deprotection** – removes silyl protecting groups
- **Amide formation** – couples amines and carboxylic acids
- **Suzuki Coupling** – couples aryl halides with aryl boronic acids
- **Nosyl Protection** – provides o-Ns protection of primary/secondary amines and amine salts
- **Cbz Protection** – provides N-Cbz protection of primary/secondary amines and amine salts

High-Throughput Screening



High-throughput 24-well plate
High-throughput screening (HTS) is a technique used to run many reactions simultaneously in parallel synthesis. Also known as high-throughput experimentation (HTE), this technique is especially useful for quick and efficient screening of compounds to find the ideal reactants for your reaction. High-throughput screening methods often use automated systems such as robotic plating systems, automated data collection/analysis, and computer programs to identify the potential reactants. HTS has revolutionized the drug discovery process and is used by pharmaceutical companies, academic institutions, and research laboratories to quickly identify new potential drug candidates.

We offer a variety of products to give researchers a one-stop shop for all their high throughput needs.

KitAlysis™- high-throughput screening kits

ChemBeads – catalyst coated glass beads designed for HTE to remove the issues with solid handling in automation

KITALYSIS™ SCREENING KITS

The KitAlysis™ screening kit platform allows for 24 unique chemical reactions to be performed with ~100 mg of user-provided substrate. While utilizing the KitAlysis™ Benchtop Inertion Box, these reactions can be conducted in an inert atmosphere without the use of a glovebox. KitAlysis™ screening kits are available pre-plated for seven different reaction types:

KitAlysis™ starter kit
Base Screening – 11 bases, 2 vials of each, and 2 open vials for additional bases to be added at the chemist's discretion to quickly and efficiently screen bases for cross-coupling reactions

Buchwald-Hartwig Amination Screening - 12 catalysts, 2 vials of each, for multiple base and solvent systems for quick screening of Buchwald-Hartwig C-N cross-coupling

Medium (5, 6, 7) Ring Closing Metathesis Screening - 6 catalysts, 4 vials of each, for quickly and efficient screening of 5, 6, and 7 membered ring forming reactions of two intramolecular terminal alkenes

Miyaura Borylation Screening - 6 catalysts, 4 vials of each, and 2 diboron compounds for favorable palladium-catalyzed borylation conditions

24 Pd Precatalyst Screening – 24 cross-coupling precatalysts allowing the researcher to narrow their selection to more specified kits

Copper C-N Cross-Coupling Screening – 6 catalysts, 4 vials of each, for multiple base and solvent systems for quick screening of Copper C-N cross-coupling reactions

Suzuki-Miyaura Cross-Coupling Screening –6 catalysts, 4 vials of each, for favorable cross-coupling conditions

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ChemBeads catalyst-coated glass beads in red.

CHEMBEADS

ChemBeads are catalyst-coated glass beads used for separation and purification processes in high-throughput experimentation. These catalyst beads are ideal for automated screening methods because sub-milligram amounts of solids can be accurately weighed and dispensed robotically. In addition, ChemBeads can be measured volumetrically to eliminate wasted material. ChemBeads have a high surface area-to-volume ratio and uniform size and shape, which ensures that the separation process is consistent and efficient, leading to reliable results.

Z742108
KitAlysis™ 24-well Reaction Block and Inertion Box Combination Starter Set

925470
Calibrated ChemBeads Scoop

Z742107
KitAlysis™ 24-well Reaction Block and Screwdriver Set

927775
XPHOS PD G2 ChemBeads

932175
Potassium hexachloroplatinate(IV) CHEMBEADS

928291
Platinum(IV) oxide ChemBeads

928356
Xantphos ChemBeads

927759
Bis(triphenylphosphine)palladium(II) dichloride ChemBeads

931055
tBuXPhos Pd G3 ChemBeads

927805
Zinc Acetate ChemBeads

932213
XantPhos Pd G3 ChemBeads

932183
Hexaammineruthenium(III) chloride ChemBeads

928364
XPhos ChemBeads

931063
PEPPSI™-IPr catalyst ChemBeads

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