

Custom Synthesis

From milligram-scale to ton-scale



Why TCI?

1

Technologies

We will help you find the best solution with over 70 years of solid experience in organic synthesis.

- Oligosaccharide Synthesis
- Ultra Low Temperature Reaction
- Halogenation Including Fluorination
- Sublimation Purification
- High-pressure Reaction
- Asymmetric Synthesis
- Fermentation

2

Intermediates

TCI's wide variety of synthetic intermediates provides flexibility to design the most efficient synthetic route.

3

Facilities

We consistently handle multiple-step reactions and processes, using a wide variety of in-house equipment and facilities.

- TCI has more than one hundred types of manufacturing equipment availability at its disposal, equating to over three hundred individual pieces of apparatus.

TCI offers

Custom Synthesis

Custom synthesis is available upon request. If you can't find a compound in our catalog, please do not hesitate to contact us.

Product areas

- Organic Intermediates
- Functional Materials
- Premix of Drug Medicines and Intermediates, Investigational New Drugs (TCI complies with cGMP)
- Electronic Materials (Low Metal Concentration)
- Oligosaccharides
- Raw Materials for Cosmetics

Quantities

- From milligram-scale to ton-scale
- Continuous production

Scaling Up

Many compounds in our catalog are also available in larger quantities.

Strict confidentiality is assured for all projects. If an official agreement is required, we can prepare one upon request.

Manufacturing Facilities

Fukaya Factory granted ISO 9001:2000 Certificate (JQA-QM8374) and IQNet Certificate (JP-JQA-QM8374), and ISO 14001:2004 Certificate (JQA-EM5386) and IQNet Certificate (JP-JQA-EM5386)

Reaction Equipment



Reactor: 8000 L Glass-lined

• Main Reaction Equipment

Reactors: 50 L to 8000 L / Glass-Lined, Stainless Steel
Ultra Low Temperature Reactors (-80 °C): 200 L Hastelloy
Autoclaves: 1 L to 2000 L / Hastelloy, Glass-Lined, Stainless Steel / 20 kg/cm² to 200 kg/cm² / 150 °C to 300 °C

• Special Reaction Equipment

Continuous Hydrogenation Equipment
Electrolysis Equipment
Pipe-Reactor



Autoclaves: 100 L to 500 L
Glass-Lined, Stainless Steel



Fermentation Tanks:
2000 L Stainless Steel

Processing Equipment



Filter Dryer: 450 L Hastelloy

• Main Filters

Centrifuges:
12-inch to 48-inch / Aflon, Gum, Stainless Steel
Sharples Ultra Centrifuge
Pressure Filters:
0.28 m² to 3.15 m² / Hastelloy, Polypropylene, Glass-Lined, Stainless Steel



Conical Dryers

• Main Dryers

Rotary Vacuum Dryers:
up to 600 L / Glass-Lined, Stainless Steel
Conical Dryers:
up to 3000 L / Glass-Lined, Stainless Steel
Freeze Dryers:
up to 20 L / Stainless Steel
Drum Dryers:
2 m² / Stainless Steel



Sulzer-packed Rectification Towers:
1000 L Stainless Steel 24 plates,
2000 L Stainless Steel 36 plates

• Main Distillation Equipment & Main Concentrators

Single Distillation Equipment:
up to 1000 L / Pyrex Glass, Glass-Lined, Stainless Steel
Rectification Towers:
up to 2000 L / Pyrex Glass, Stainless Steel / up to 45 plates
Centrifugal Molecular Distillation Equipment
Centrifugal-Flow Thin-Film Vacuum Evaporator



Centrifugal-Flow Thin-Film Vacuum Evaporator

Quality Control (Quality Test and Quality Maintenance)

High quality products through well-documented methods and procedures

Analytical Equipment

- ICP-MS • GC-MS • LC-MS
- ICP-AES • TOF-MS • NMR
- UPLC-CAD



ICP-MS



NMR

Clean Room

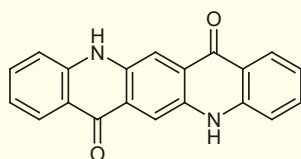


Sublimation Purification

We offer sublimation purification for both ready-made and customized compounds. Please feel free to contact us.

Benefits of TCI

- Fully integrated custom synthesis service
- An extensive range of unique sublimation apparatus
 - capable of purifying various compounds by sublimation
 - scalable from milligrams to kilograms
- Ability to analyze residual metals
- Low-moisture and/or low-oxygen packaging options



Comparison between colors of quinacridone before and after sublimation purification

How to Order Custom Synthesis

We are ready to cater to your needs. Please contact us!

- Production of bespoke compounds
- Scale-up production of existing materials
- Small-scale synthesis for initial screening
- Continuous multi-ton scale production

Please, feel free to ask any inquiry at the below address.

Pledge of Confidentiality

TCI is always committed to our confidentiality policy, however, we will also be pleased to sign any non-disclosure or confidentiality agreement if you wish.

Technical Information

Provided that your synthetic route can be disclosed, we will estimate a total cost based on the disclosed technical information. When additional information or analytical testing is required, we will discuss this with you before adding any extra work to the quotation.

Quotation

Customer Acceptance and Commitment of Manufacture

Ordering and Customer Service

TCI AMERICA

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