



asia

fast, clean, safe
flow chemistry

technical note

System :	Asia
Module :	Microreactors
Version :	1.0
Date :	27 th February 2012
Created/ Revised by :	Maxime Drobot

Asia Microreactors Datasheet

This document provides specifications and information for Syrris Asia Microreactors.

1. Description

The Microreactor Chips are glass microfluidic devices designed for mixing and reaction of two or three liquid reagent streams. The main application is solution phase chemistry experiments including compound synthesis and reaction kinetics studies. The chips are supplied in a chip holder. A chip header is also available (part number 2100147) allowing quick connection to 1/16" fluid pipes.



Left: 250 µl and 62.5 µl Microreactor Chips without holder
Bottom right: Microreactor Chip in holder and Chip Header



Benefits

- Rapid mixing across a range of flow rates
- High visibility (excellent access for optics)
- 2 or 3 inputs
- Quick connect/disconnect
- Wide temperature and pressure range
- Excellent chemical compatibility

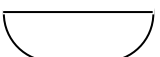
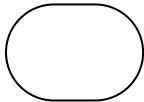
2. Technical information for Asia Glass and Quartz Microreactors

a. General specification

	Specification	Value
1	Number of inputs	2 - 3
2	Number of outputs	1
3	Reaction volume	62.5 µl, 250 µl, 1000 µl
4	Outside diameter of connection tubing	1.6 mm (1/16 inch)
5	Inside diameter of connection tubing	0.5 mm
6	Connection tubing material	PTFE, FEP

7	Surface roughness of channels (R_a)	5 nm
8	Chip size	90 mm x 28 mm
9	Chip thickness	4.5 mm
10	Max operating temperature	250 °C
11	Material	Glass
12	Fabrication process	HF etching and thermal bonding

b. Performance and geometry information

	Specification	Value		
1	Chip type	62.5 μ l Reaction chip	250 μ l Reaction chip	1000 μ l Reaction chip
2	Operating pressure	30 Bar	30 Bar	10 Bar
3	Back pressure with 100 μ l/min flow (water)	4 Bar	0.25 Bar	0.03 Bar
4	Preheating of reagents prior to mixing	No	No	No
5	Channel Cross-section			N/A
6	Mixing channel depth	85 μ m	250 μ m	N/A
7	Mixing channel width	220 μ m	300 μ m	N/A
8	Mixing channel length	532 mm	532 mm	536 mm
9	Reaction channel depth	85 μ m	250 μ m	N/A
10	Reaction channel width	370 μ m	400 μ m	N/A
11	Reaction channel length	1912 mm	2509 mm	1844 mm

c. Custom options

The microreactor chips may be customised in the following ways:

- The chips can be made in quartz to improve UV light transmission
- Hydrophobic surface coatings can be applied to the inside surface of the channels
- Metals layers may be deposited on the inside surface of the channels, examples include platinum and gold layers

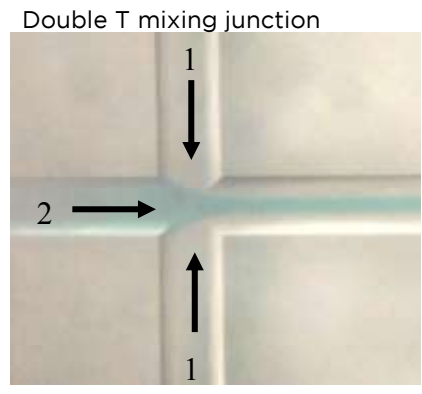
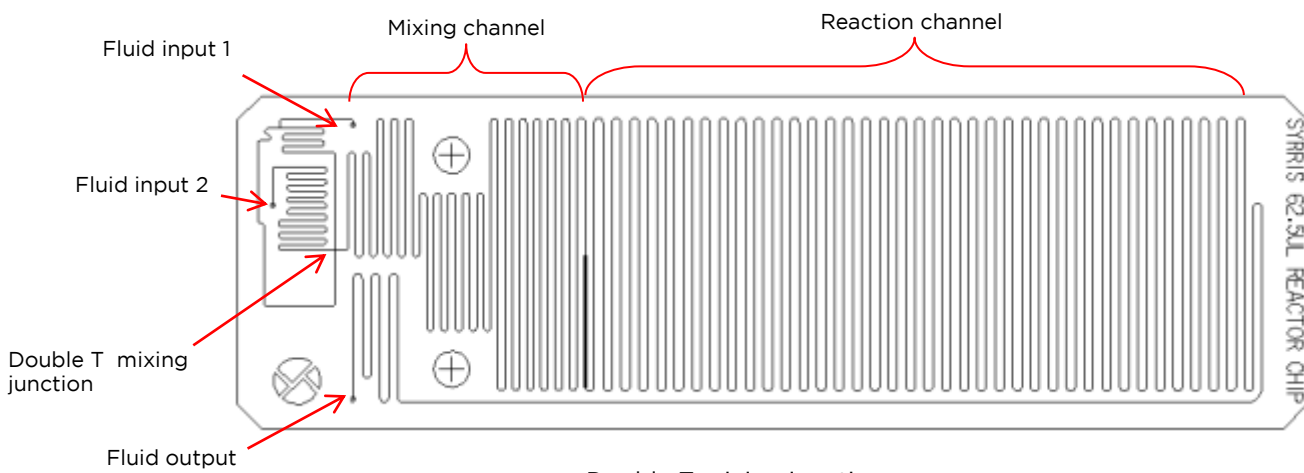


Microreactor Chip with platinum layer on channel surface

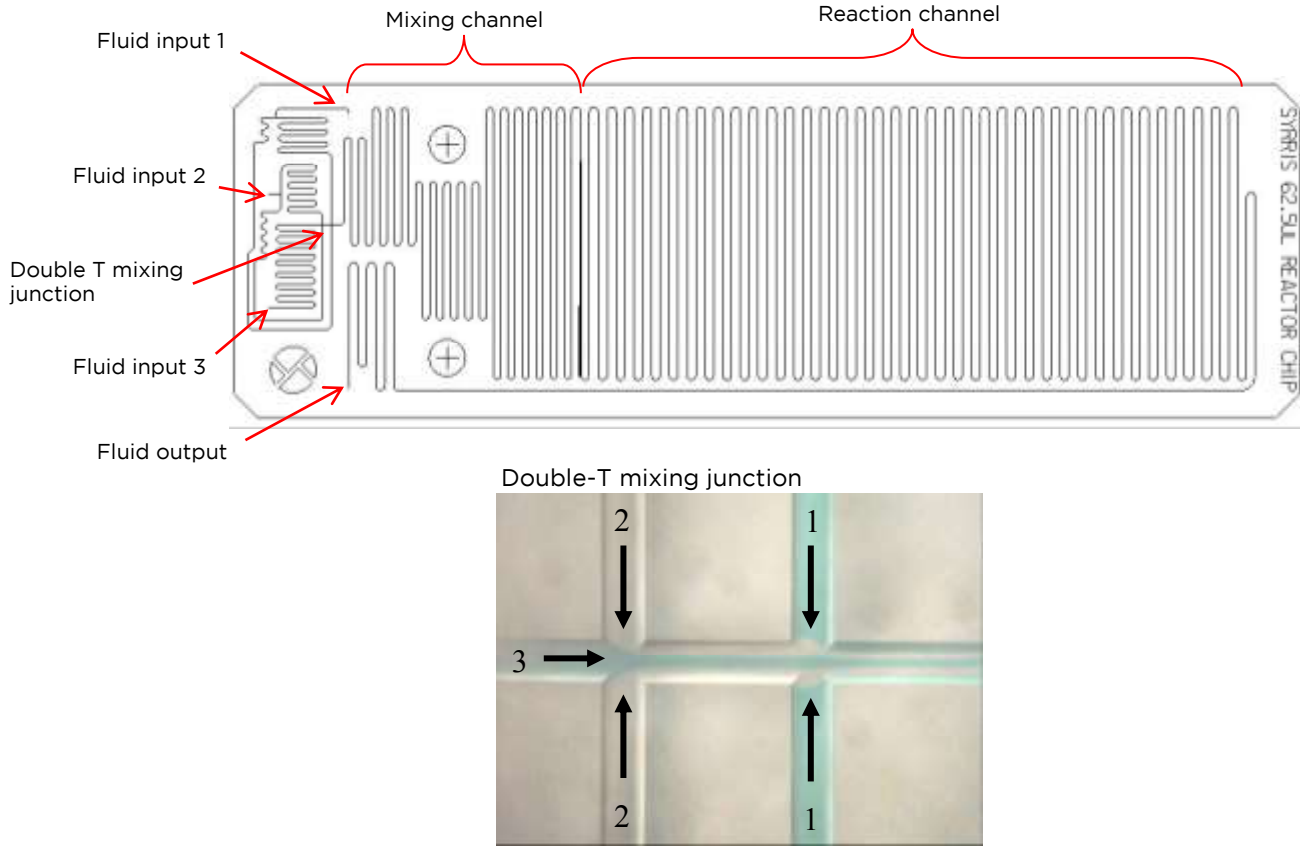
- Custom chip design can be provided to fulfill specific customer need (different channel diameter, different fluidic path, etc...). Email info@syrris.com to discuss.

3. Layout details

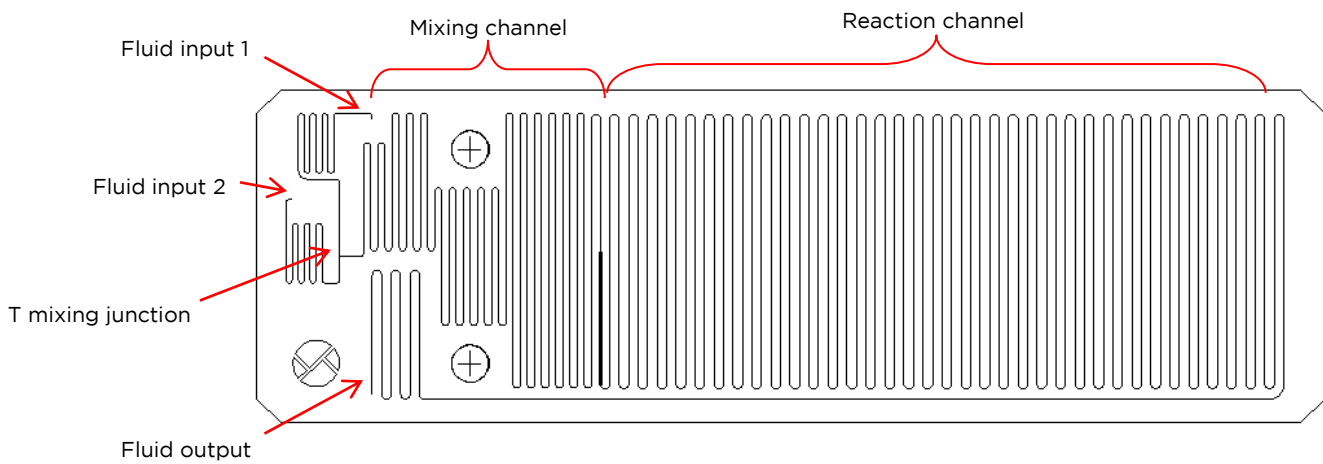
a. Channel layout for 62.5 μ l and 250 μ l 2-Input Reaction chips



b. Channel layout for 62.5 μl and 250 μl 3-Input Reaction chips



c. Channel layout for 1000 μl 2-Input Reaction chips



d. Channel layout for 1000 µl 3-Input Reaction chips



4. List of part numbers

Part description	Syrris part number
Asia 62.5 µl Glass Microreactor Chip 2 Input	2100141
Asia 62.5 µl Glass Microreactor Chip 3 Input	2100142
Asia 250 µl Glass Microreactor Chip 2 Input	2100143
Asia 250 µl Glass Microreactor Chip 3 Input	2100144
Asia 1000 µl Glass Microreactor Chip 2 Input	2100145
Asia 1000 µl Glass Microreactor Chip 3 Input	2100146
Asia 62.5 µl Quartz Microreactor Chip 2 Input	RD2200457
Asia 62.5 µl Quartz Microreactor Chip 3 Input	RD2200458
Asia 250 µl Quartz Microreactor Chip 2 Input	RD2200459
Asia 250 µl Quartz Microreactor Chip 3 Input	RD2200460
Chip Header	2100147
Chip Header FFKM Seals (Pack of 10)	2110721
Chip Header Blanking Plug	2100210

If you require assistance or further explanation, please contact support@syrris.com.