

JM

Product guide:
Catalyst
screening plates
(C-C and C-N coupling)



JM Johnson
Matthey

Johnson Matthey's precatalyst screening plates are designed to accelerate hit identification for Pd-catalyzed cross-coupling reactions.

Containing state-of-the-art precatalysts selected by our experts, JM's screening plates integrate seamlessly into high throughput experimentation and automation workflows for catalyst identification.

Catalyst screening plate overview

Johnson Matthey's 96-well catalyst screening plates contain 24 unique homogeneous precatalysts with 4 samples of each per plate. The homogeneous precatalysts included in each plate are selected from JM's expansive product portfolio and loaded at a standard 1 μmol quantity (customized loadings are available upon request) using chemical-coated glass beads (ChemBeads)¹. We provide specific catalyst loading data with your plate order.

The selected catalysts provide you with a broad range of electronically and sterically diverse phosphine ligands. The plates utilise JM's proprietary π -allyl precatalyst scaffold for optimal catalyst activation and accurate hit identification.

These screening plates are excellent for initial ligand and precatalyst hit identification. Hit validation and screening of additional reaction parameters is recommended following identification of a suitable catalyst system.

For samples and commercial quantities of catalysts identified in your screens, please send an inquiry to your account manager or to pharma@matthey.com



Catalyst overview

Product No.	Description	C-C plate	C-N plate
Pd-62	$\text{PdCl}_2(\text{MeCN})_2$	+	+
Pd-93	$\text{Pd}(\text{dba})_2$	+	
Pd-94	$\text{Pd}_2(\text{dba})_3$	+	+
Pd-100	$\text{PdCl}_2(\text{PPh}_3)_2$	+	
Pd-110	$[\text{Pd}(\text{allyl})\text{Cl}]_2$	+	+
Pd-111	$\text{Pd}(\text{OAc})_2$	+	+
Pd-117	$\text{PdCl}_2(\text{DPEPhos})$	+	
Pd-122	$\text{PdCl}_2[\text{P}(\text{tBu})_2(\text{Ph})]_2$	+	
Pd-123S	$\text{PdCl}_2(\text{S})\text{-BINAP}$		+
Pd-126	$\text{PdCl}_2(\text{dppp})$	+	
Pd-132	$\text{PdCl}_2(\text{AmPhos})_2$	+	
Pd-161	$\text{AmPhos Pd}(\text{crotlyl})\text{Cl}$	+	+
Pd-162	$\text{P}(\text{tBu})_3 \text{Pd}(\text{crotlyl})\text{Cl}$	+	+
Pd-166	$\text{PdCl}_2[\text{P}(\text{tBu})(\text{Cy})]_2$	+	
Pd-170	$\text{XPhos Pd}(\text{crotlyl})\text{Cl}$	+	+
Pd-171	$\text{RuPhos Pd}(\text{crotlyl})\text{Cl}$	+	+
Pd-172	$\text{SPhos Pd}(\text{crotlyl})\text{Cl}$	+	+
Pd-173	$[\text{BrettPhos Pd}(\text{allyl})]\text{OTf}$	+	+

Product No.	Description	C-C plate	C-N plate
Pd-174	$[\text{tBuXPhos Pd}(\text{allyl})]\text{OTf}$	+	+
Pd-175	$[\text{tBuBrettPhos Pd}(\text{allyl})]\text{OTf}$		+
Pd-177	$\text{XantPhos Pd}(\text{allyl})\text{Cl}$	+	+
Pd-178	$\text{PCy}_3 \text{Pd}(\text{crotlyl})\text{Cl}$	+	
Pd-181	$\text{P}(\text{o-tolyl})_3 \text{Pd}(\text{crotlyl})\text{Cl}$	+	
Pd-188	$\text{CyJohnPhos Pd}(\text{crotlyl})\text{Cl}$	+	
Pd-209	tBuXPhos Pd G6		+
Pd-210	$\text{tBuBrettPhos Pd G6}$		+
Pd-215	$[\text{RockPhos Pd}(\text{allyl})]\text{OTf}$		+
Pd-216	$[\text{Me}_3\text{OMetBuXPhos Pd}(\text{allyl})]\text{OTf}$		+
Pd-217	$\text{CPhos Pd}(\text{crotlyl}) \text{Cl}$		+
Pd-218	$[\text{EPhos Pd}(\text{allyl})]\text{OTf}$		+
Pd-219	$[\text{GPhos Pd}(\text{allyl})]\text{OTf}$		+
Pd-220	$[\text{AlPhos Pd}(\text{allyl})]\text{OTf}$		+
Pd-221	$[\text{MorDalPhos Pd}(\text{crotlyl})]\text{OTf}$		+
BPC-307	$\text{P}(\text{Ad})_2(\text{nBu}) \text{Pd G3}$	+	+
Ni-132	$\text{Ni}(\text{PPh}_3)_2(1\text{-naphthyl})\text{Cl}$	+	



Scan the QR code to view the plate configuration file.

Vial transfer instructions

Please consult the SDS for safety information regarding individual catalyst components. Handle under a fume or powder hood using the appropriate personal protective equipment (PPE). The catalyst screening plate is intended to store and transport the glass vials only.



Step 1

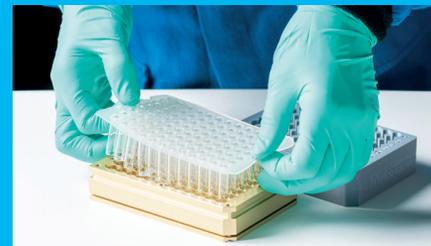
Ensure the silicone mat is fully secure by pressing down on the mat before transferring. Firmly grip the silicone mat in the middle of the shorter sides (fingers should be near row D).

Make sure the reaction block you are transferring to has the desired orientation. We recommend aligning each plate at the clipped edge.



Step 2

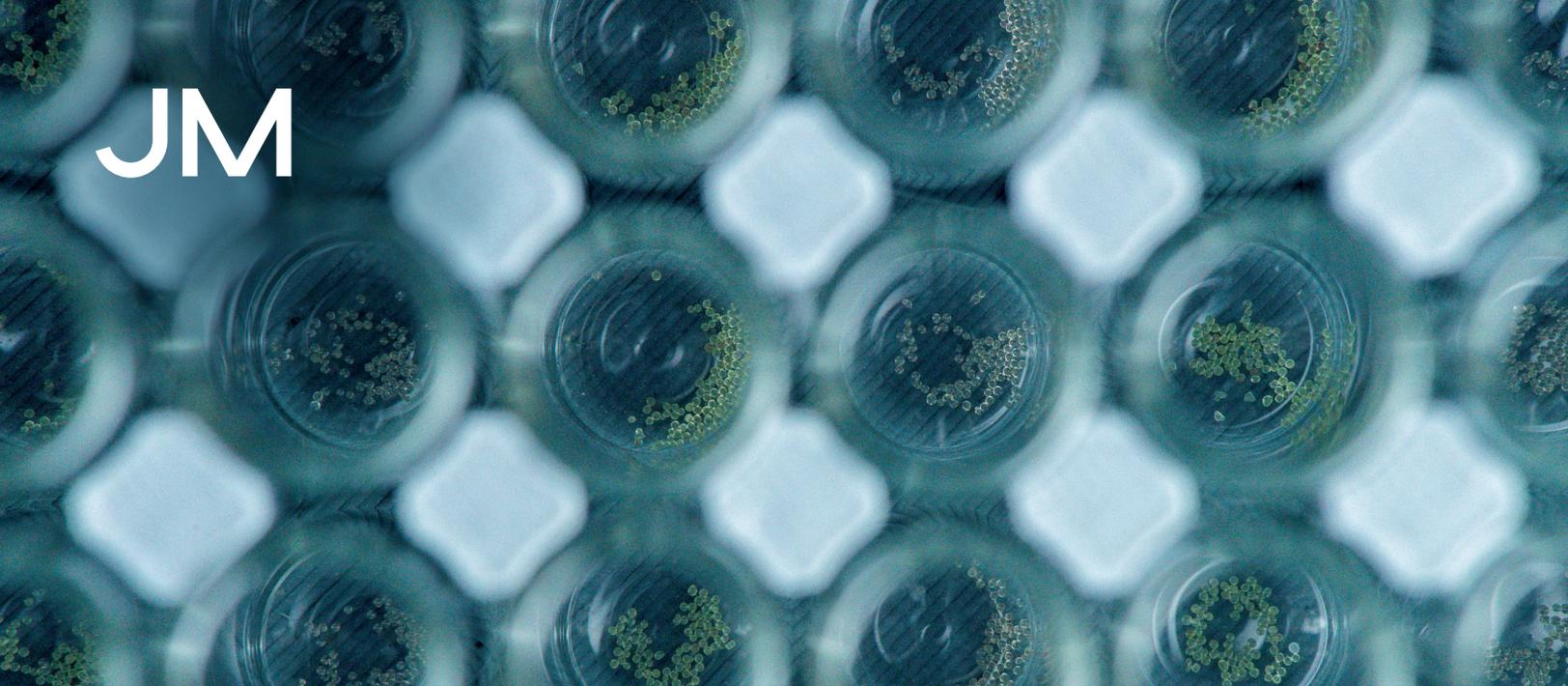
Lift the silicon mat gently from the plate to ensure all vials remain attached to the mat.



Step 3

Gently place the first column of vials loosely into the destination block wells. Then place the remaining columns of vials into the wells. Keep the plate as close to flat as possible.

The catalyst screening plates are NOT packed under nitrogen. If experimentation under inert atmosphere is required, we recommend removing the silicone mat from the vials and flush the vials with an inert gas. A suitable gas-permeable cover should be used to ensure catalyst does not escape the vials upon vacuum cycling.



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Scan here to learn more
about our homogeneous
catalyst portfolio

