

ISOLUTE® Si Propylsulfonic Acid (SCX-2)

Metal Scavenger/Scavenger



Key Facts



Specifications

Chemical Name:	Silica Propylsulfonic Acid (Si-propylsulfonic acid; SCX-2)
Solid-Support Type:	Silica
Appearance:	Free flowing off-white powder
Application:	Scavenger of amine, Catch-and-Release, Acid catalyst
Typical Conditions:	Stir crude reaction mixture with 2–4 equivalents for 1 h and filter
Compatible Solvents:	Methanol (MeOH), Dichloromethane (DCM), Acetonitrile (MeCN), Acetone, Ethyl Acetate (EtOAc), N,N-Dimethylformamide (DMF), Dimethylsulfoxide (DMSO)
Storage:	Cool (4 °C), dry location

ISOLUTE® Si-Propylsulfonic acid (SCX-2) belongs to a class of strong supported acids. As a bound sulfonic acid, it has a natural propensity to bind alkali and some transition metal group metals, which means that it can be used as a scavenger for metals with a +I or +II oxidation state, such as Na, K, Li, also Pd, Rh, and Ru. SCX-2 is typically used as a metal scavenger when the target product is not basic, to avoid the obvious acid/base product binding interactions with the scavenger. If the product is basic then Si-Tiol, SI TMT, MP-TMT or Si-Trisamine may be utilized instead. Other uses in chemistry include (a) scavenge (removing) amines and other bases from solution (b) as an acid catalyst in reactions or (c) catch and release purification of amines, to facilitate either solvent switching or amine purification. The advantage of using SCX-2 as a polymer supported acid is that it eliminates traditional laborious work-up steps.

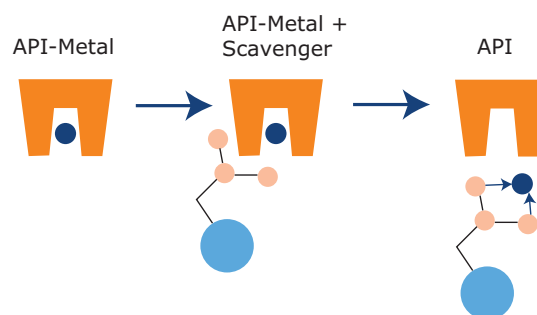


Figure 1. Metal Scavenging

Other Applications

Catch and Release Purification of Amines

When a solution containing an amine is passed through a SCX-2 column the amine is retained. Non-basic impurities are not retained and are removed by washing the column with an organic solvent, such as methanol, acetonitrile or THF. The product is subsequently released from the column by elution with a solution of ammonia in methanol.

SCX-2 columns can be used to isolate amines from solutions in DMF. After complete removal of the DMF using DCM or methanol, the retained amine is eluted with an ammonia/methanol solution. The amine is then isolated by removal of the more volatile ammonia/methanol solution by evaporation.

Scavenging of Basic Impurities

SCX-2 columns can also be used to scavenge basic impurities and thereby purify reaction mixtures. Passing a reaction mixture through an SCX-2 column will result in removal of all basic components in the mixture. If additional selectivity is required, the use of a more selective scavenger resin is recommended, for example, PS-Isocyanate¹ (for removal of primary and secondary amines), or PS-Benzaldehyde² (for selective removal of primary amines).

Other Applications

In Mitsunobu, Suzuki and Heck reactions, it is often challenging to isolate pure products from mixtures containing triphenylphosphine oxide and palladium. SCX-2 columns can be used to purify these products when they contain a basic functional group. The reaction mixture is applied to the column and the product is retained by SCX-2. The by-products can also be easily removed with a methanol or DCM wash step. The product can then be released by eluting with 2 M ammonia in methanol.

Ordering Information

Part Number	Quantity
9536-0010	10 g
9536-0025	25 g
9536-0100	100 g
9536-0500	500 g
9536-1000	1000 g

SCX-2 is included in a comprehensive metal scavenging screening tool kit, an essential tool to quickly and effectively find the right metal scavenger for the application in hand. With protocols, guidance and recommendations, this all in one kit showcases all of the key metal scavengers.

Part Number: K-MS-2.

References

1. PS-Isocyanate: Part Numbers 800495 (3 g); 800260 (10 g), 800261 (25 g), 800262 (100 g); 800311 (1000 g).
2. PS-Benzaldehyde: Part Numbers 800502 (3 g); 800360 (10 g), 800361 (25 g), 800362 (100 g); 800363 (1000 g).



FM 31206 EMS 640981

Biotage holds certification for both ISO9001 Quality Management and ISO14001 Environmental Management.

EUROPE

Main Office: +46 18 565900
 Toll Free: +800 18 565710
 Fax: +46 18 591922
 Order Tel: +46 18 565710
 Order Fax: +46 18 565705
 order@biotage.com
 Support Tel: +46 18 56 59 11
 Support Fax: + 46 18 56 57 11
 eu-1-pointsupport@biotage.com

NORTH & LATIN AMERICA

Main Office: +1 704 654 4900
 Toll Free: +1 800 446 4752
 Fax: +1 704 654 4917
 Order Tel: +1 704 654 4900
 Order Fax: +1 434 296 8217
 ordermailbox@biotage.com
 Support Tel: +1 800 446 4752
 Outside US: +1 704 654 4900
 us-1-pointsupport@biotage.com

JAPAN

Tel: +81 3 5627 3123
 Fax: +81 3 5627 3121
 jp_order@biotage.com
 jp-1-pointsupport@biotage.com

CHINA

Tel: +86 21 2898 6655
 Fax: +86 21 2898 6153
 cn_order@biotage.com
 cn-1-pointsupport@biotage.com

To locate a distributor, please visit our website www.biotage.com

Part Number: PPS373.V.1

© 2016 Biotage. All rights reserved. No material may be reproduced or published without the written permission of Biotage. Information in this document is subject to change without notice and does not represent any commitment from Biotage. E&OE. A list of all trademarks owned by Biotage AB is available at www.biotage.com/legal. Other product and company names mentioned herein may be trademarks or registered trademarks and/or service marks of their respective owners, and are used only for explanation and to the owners' benefit, without intent to infringe.