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## Clean-Up® Metal Scavenging

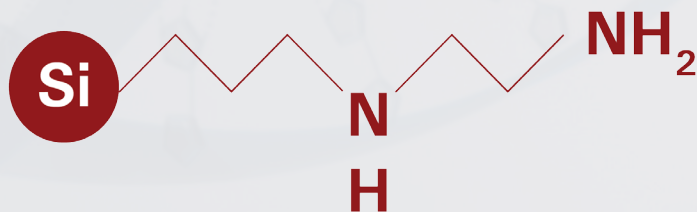
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Primary/Secondary Amine (PSA)

UCT's Clean-Up® Metal Scavenging Line is designed to retain excess organometallic catalysts commonly utilized in industrial synthesis enabling purification by simple filtration. Specific impurities are targeted including precious metals such as Pd, Pt, Ru and Rh to isolate the final desired product. Our Clean-Up® Metal Scavengers are highly selective in achieving the necessary purity levels for metal contamination, cost-effective, and available in cartridge format or bulk quantities.

# CLEAN-UP®- METAL SCAVENGING PRIMARY/SECONDARY AMINE (PSA)

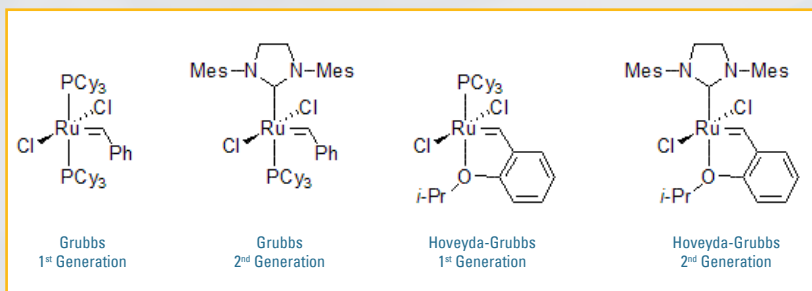
## UCT's Clean-Up® – Metal Scavenging Primary/Secondary Amine (PSA)



**Organic Loading:**  $\geq 0.80$  mmol/gm  
**Surface Area:** 500 m<sup>2</sup>/g  
**Average Pore Size:** 60Å  
**Pore Volume:** 0.77 cm<sup>3</sup>/g

**Metals Targeted**  
**Best Metals Scavenged:** Cr, Pd, Pt, Ru, W, & Z  
**Good Metals Scavenged:** Cd, Co, Cu, Fe, Hg, Ni, Pb, Se, & Sc

Olefin metathesis has become a well-established synthetic technique for the clean development of innumerable classes of chemical structures. Ruthenium-based catalysts are traditionally the go-to in the aforementioned reactions (ROM(P) and RCM), where a majority of the successful examples in the below reaction are achieved via Grubbs and Hoveyda-Grubbs catalysts. In order to successfully reach the maximum tolerated concentrations of residual ruthenium, various functionalized silica based sorbents were evaluated for their scavenger efficiency.



### Case Study: Removal of Residual Ruthenium Concentrations Using 3 Different Metal Scavengers

Initial Ru (ppm)	Scavengers	Conditions	# of treatment	Ru (ppm)	% Yield of API
2000	Competitor 1 - Diamine	20 wt%, THF, RT, 16 h	Pass 1	950	~95.4
			Pass 2	710	
			Pass 3	600	
2000	Nexgen PSA	20 wt%, THF, RT, 16 h	Pass 1	800	~99.8
			Pass 2	390	
			Pass 3	340	
2000	Competitor 2- Complex Amine Resin	20 wt%, THF, RT, 16 h	Pass 1	1300	~92.8
			Pass 2	1100	

7112-04-01



#### PRICES AND TERMS

Our prices are subject to change without notice. The price in effect when we receive your order will apply. All prices are in US Dollars and are F.O.B. Lewistown, PA 17044. Terms of payment are net 30 days.

#### MINIMUM ORDERS

We welcome all orders, therefore, we do not have a minimum order requirement. When ordering, please include your purchase order number, complete "Ship To" and "Bill To" address, catalog number, quantity, and description of product(s). Also include your name and a phone number where you can be reached should we have any questions concerning your order.

#### SHIPMENTS

Normal processing is within 24 hours after receipt of an order. Unless special shipping requests have been made, our trained staff will send all orders by UPS Ground service. The appropriate shipping charges (freight & insurance costs) will be added to the invoice, unless otherwise instructed by the customer.

#### SPECIAL PRICING

We offer special pricing for volume purchases and standing orders. These discounts apply to bonded phase extraction column purchases only. Please call a sales representative for more information on special pricing qualifications.

#### PLACING AN ORDER

Phone: 717.247.0896  
 800.541.0559  
 Fax: 717.247.0109

#### MAIL

UCT, LLC  
 2731 Bartram Rd.  
 Bristol, PA 19007

#### TECHNICAL SUPPORT

Phone: 215.781.9255  
 800.385.3153  
 Fax: 215.785.1226  
 Email: info@unitedchem.com  
 Forum: forums.unitedchem.com  
 Web: www.unitedchem.com

#### RETURN POLICY

Our Quality Manager will handle all returns. Before returning merchandise, please call to obtain a return authorization number from the quality manager. We will need to know the reason for the return, date of purchase, purchase order number and invoice number in order to issue a return authorization number. Return merchandise must be received before a credit can be issued. Returns will not be accepted after 90 days. A restocking fee of 25% of the price paid, or a minimum of \$25.00 (whichever is greater) will be charged on all returns.

#### WARRANTY

All products manufactured by UCT are guaranteed against defects in materials and workmanship for a period of 90 days after shipment. UCT, Inc. will replace any items that prove to be defective during this time period.

The exclusive remedy requires the end user to first advise UCT, Inc. of the defective product by phone or in writing. Secondly, the defective product must be returned within 30 days after proper approval from our Quality Manager. All returns must indicate the purchase order number, the lot number and the shipping date. UCT's total liability is limited to the replacement cost of UCT products.

This warranty does not apply to damage resulting from misuse.

