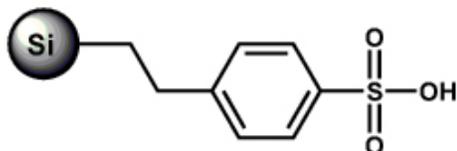
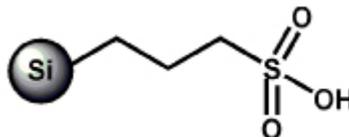




SiliaBond[®] SCX and SCX-2: Silicas of the Month for April and May 2007



SiliaBond[®] Tosic Acid (SCX)
R60530B

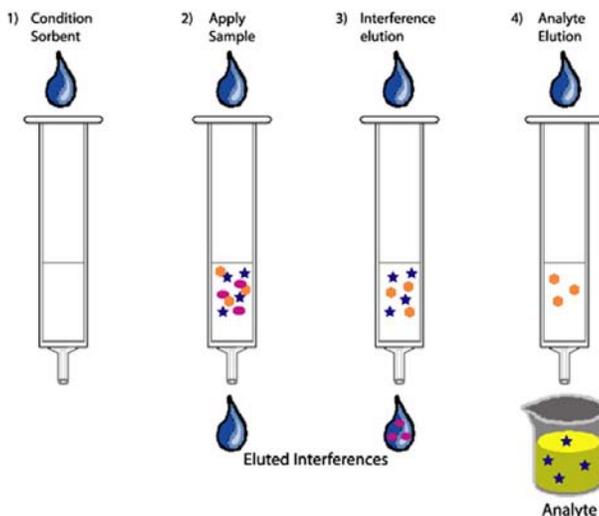


SiliaBond[®] Propylsulfonic Acid (SCX-2)
R51230B

Supported sulfonic acids are in a class of strong acids ($pK_a < < 1$) widely used in different fields of synthetic organic chemistry. Their applications are widely known and the various form of the products are used in a large number of settings going from the drug discovery laboratories up to the manufacturing processes. Among the applications we denote their use as acid catalysts, stationary phases for ion chromatography, and basic impurity scavengers. Meanwhile the most common use is probably as strong cation exchanger (SCX) for the "Catch and Release" purification of amines in SPE cartridges. This technique is becoming so popular that some Universities are introducing the use of SCX SPE purification in their undergraduate teaching laboratories.

SiliCycle offers the **SiliaBond[®] Tosic Acid (SCX)** and the **SiliaBond[®] Propylsulfonic Acid (SCX-2)**. The aromatic ring of the Tosic Acid makes it slightly more acidic than Propylsulfonic Acid. However, internal tests have demonstrated that they both have comparable strength. The difference between the two products is mainly in the selectivity.

Catch and Release of amine



SPE sample procedure

Amine (1 eq.) was dissolved in methanol (2500 ppm)

SPE cartridge: 0.5 g (2 eq.) or 1 g (4 eq.)

1 – Column conditioning: 10 mL of methanol

2 – Sample application

3 – Wash with 10 mL of methanol (1 mL/min)

4 – Release: 10 mL of 2 M ammonia/methanol

SiliaBond® Tosic Acid (Si-TsOH, SCX)

| Table 1 : Catch and release of amines with SCX | | | |
|-------------------------------------------------------|-------|-------|---------|
| Amine | # eq. | Catch | Release |
| Tributylamine | 2 | 98 % | 97 % |
| Tributylamine | 4 | 100 % | 100 % |
| Aniline | 2 | 100 % | 100 % |
| 2-Aminothiazole | 4 | 100 % | 100 % |
| 4-Nitroaniline | 4 | 100 % | 100 % |

SiliaBond® Propylsulfonic Acid (SCX-2)

| Table 2 : Catch and release of amines with SCX-2 | | | |
|---------------------------------------------------------|-------|-------|---------|
| Amine | # eq. | Catch | Release |
| Tributylamine | 2 | 98 % | 90 % |
| Tributylamine | 4 | 100 % | 100 % |
| Aniline | 2 | 100 % | 100 % |
| 2-Aminothiazole | 4 | 100 % | 100 % |
| 4-Nitroaniline | 4 | 100 % | 100 % |

| P/N | Volume (ml) | Mass (g) | #/box |
|------------------------------------|-------------|----------|-------|
| SiliaBond® Tosic Acid (SCX) | | | |
| SPE-R60530B-03G | 3 mL | 0.20 | 50 |
| SPE-R60530B-03P | 3 mL | 0.50 | 50 |
| SPE-R60530B-06P | 6 mL | 0.50 | 50 |
| SPE-R60530B-06S | 6 mL | 1.00 | 50 |
| SPE-R60530B-06U | 6 mL | 2.00 | 50 |
| SPE-R60530B-12U | 12 mL | 2.00 | 20 |
| SPE-R60530B-20X | 25 mL | 5.00 | 20 |

| SiliaBond[®] Propylsulfonic Acid (SCX-2) | | | |
|----------------------------------------------------------|-------|------|----|
| SPE-R51230B-03G | 3 mL | 0.20 | 50 |
| SPE-R51230B-03P | 3 mL | 0.50 | 50 |
| SPE-R51230B-06P | 6 mL | 0.50 | 50 |
| SPE-R51230B-06S | 6 mL | 1.00 | 50 |
| SPE-R51230B-06U | 6 mL | 2.00 | 50 |
| SPE-R51230B-12U | 12 mL | 2.00 | 20 |
| SPE-R51230B-20X | 25 mL | 5.00 | 20 |

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