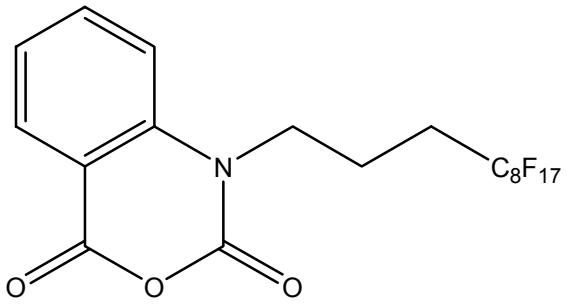


1-[3-Perfluorooctyl)propyl]-(1H-benzo[d][1,3] oxazine-2,4-dione

Chemical Formula:	$C_{19}H_{10}F_{17}NO_3$
Formula Weight:	623.27
Description:	Scavenger for nucleophiles
Appearance:	Off white solid
Soluble in:	Methanol, THF, dichloromethane, ethyl acetate, acetone
Stability:	Store in brown bottle at ambient temperature

DESCRIPTION AND USES:

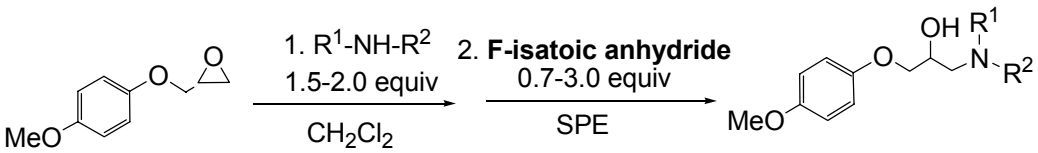
- Fluorous isatoic anhydride is a solution phase nucleophile scavenger.
- Used in solution-phase parallel synthesis of urea, thiourea and β–hydroxyamine analogs.[1] The resulting fluorous-quenched derivatives are readily separated from the desired product by fluorous solid-phase extractions (F-SPE) over Fluoro*Flash*® cartridges (see application note for Fluoro*Flash*® SPE) to give products with good purity.[2,3,4]

TYPICAL PROCEDURE:

Typical procedure for the reaction of **1a** with amines: To a solution of phenyl isocyanate **1a** (1.0 equiv, 0.2 mmol) in CH_2Cl_2 (0.5-1.0 mL) was added an excess amount of amine (1.5 equiv, 0.3 mmol). The resulting solution was stirred at 60 °C for 6-12 h in a capped vial. Upon completion of the reaction, fluorous isatoic anhydride was added (1.0 equiv, 0.2 mmol) and the reaction mixture was stirred for 2.5 h at 60 °C. The reaction mixture was concentrated to 0.2-0.5 mL and loaded under vacuum onto a 5g Fluoro*Flash*® SPE cartridge pre-conditioned with 80:20 MeOH-H_2O on an SPE manifold. The cartridge was eluted with 10 mL of 80:20 MeOH-H_2O. The MeOH-H_2O fraction containing the desired product was evaporated in a Speedvac to give the corresponding urea **2** in quantitative yield. The F-SPE cartridge can be reconditioned by first washing with 100% MeOH followed by THF or acetone to remove the fluorous compounds from the cartridge and then re-equilibrated with 80:20 MeOH-H_2O for the next round of SPE. The cartridge can typically be reused up to 10 times, depending on the nature of the substrate applied.

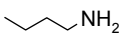
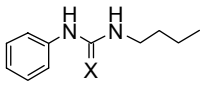
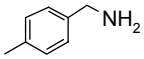
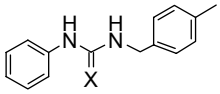
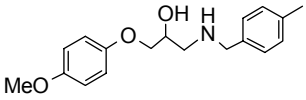
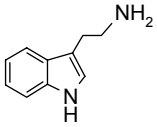
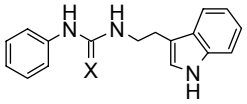
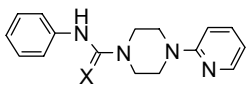
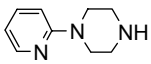
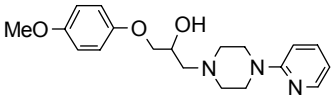
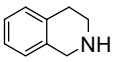
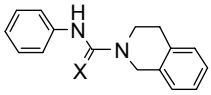
1a (X = O)
1b (X = S)

2



3 **4**

Representative reaction results using fluorous isatoic anhydride as a scavenger for excess amines

substrate	amine	product	X	yield	purity[a]
1a			O	100%	>95%
1b			S	75%	95%
1a			O	100%	>95%
1b			S	72%	>95%
3				67%	95%
1a			O	100%	>95%
1b			S	95%	>95%
1a			O	100%	>95%
1b			S	100%	95%
3				62%	>95%
1a			O	100%	>95%
1b			S	100%	95%

[a] purity was assessed by ^{1}H NMR.

REFERENCES:

1. Zhang, W.; Chen, C. H.-T.; Nagashima, T. *Tetrahedron Lett.*, **2003**, *44*, 2065.
2. For related scavenger work, see: (a) Lindsley, C. W.; Zhao, Z.; Leister, W. H. *Tetrahedron Lett.* **2002**, *43*, 4225; (b) Lindsley, C. W.; Zhao, Z.; Leister, W. H. ; Strauss, K. A. *Tetrahdron Lett.* **2002**, *43*, 6319 (c) Zhang, W.; Curran, D. P.; Chen, C. H.-T. *Tetrahedron*, **20023**, *58*, 3871.
3. Curran, D. P. *Synlett*, **2001**, 1488.
4. Please refer to FTI Application Note "Fluorous Solid Phase Extraction"