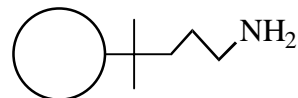


CombiZorb S-Monoamine Structure:



Characterization:

Spherical, ultra-pure silica; Density: 1.3 g/ml; Particle Size: 20-80 μm ; no swelling.

Capacity:

0.6-0.9 mmol/g (determined by acid/base titration and confirmed by reaction with 4-chlorobenzoyl chloride).

Application:

Scavenging acids, acid chlorides, acid anhydrides, chloroformates, isocyanates^{1,3}, aldehydes², and many other electrophiles.

Typical Conditions:

2-3 equivalents relative to acids and, isocyanates, 3-5 equiv relative to acid chlorides, anhydrides, chloroformates and aldehydes; 0.5-2 h, 20-30°C (except for aldehydes with which mild heating and a small amount of acid catalyst may be needed); shake or gentle agitation; compatible with any solvents used for your reactions, no swelling needed. In general, there is no need to quench the reaction mixture with water when using scavengers, however, if water is used, this scavenger is compatible with an aqueous solution.

Recommended Storage:

Keep under N_2 in a dry and cool place.

Table 1. Scavenging of a Variety of Electrophiles

Electrophile	CombiZorb S-monamine (equiv.) ^A	Solvent	Conditions	Scavenged (%) ^B
4-chlorobenzoyl chloride	4	CH_2Cl_2	1h, 20°C	>99%
2-phenylbutyryl chloride	4	CH_2Cl_2	1h, 20°C	>99%
Phenyl chloroformate	4	CH_2Cl_2	1h, 20°C	>99%
Chloroacetic anhydride	4	CH_2Cl_2	1h, 20°C	>99%
Cyclohexyl isocyanate	2	CH_2Cl_2	1h, 20°C	>99%
Phenyl isocyanate	2	CH_2Cl_2	1h, 20°C	>99%
Benzaldehyde	3	THF/MeOH (1:2)	1h, 60°C	>99%

A) Relative to electrophiles without use of additional base

B) Determined by GC

Reference:

For general use of solid-supported amines as scavengers, see:

1. R. J. Booth & J. C. Hodges J. Am. Chem. Soc., 1997, 119, 4882.
2. D. L. Flynn, et al. J. Am. Chem. Soc., 1997, 119, 4874.

For the application of this unique scavenger, see:

3. L. A. Thompson, et al. at Lake Tahoe Symposium on Molecular Diversity, Lake Tahoe, CA. 1999, Jan. 28.
4. Q. Wang et al. at ACS National Meeting at New Orleans, 1999, Aug. 22-26, Organic Div.; Paper # 337



Agilent Technologies

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Certificate of Analysis

Product Name **CombiZorb S-Monoamine**

Lot Number _____

Functional Groups **-NH₂**

Test	Specification	Result
Appearance	Off-white	Pass
Capacity	> 0.6 mmol/g	
Particle Size	> 80% at 30 to 70 μm	Pass
Extractible	< 0.2 AU/g/mL	Pass

FOR RESEARCH AND DEVELOPMENT USE ONLY

Certified By _____ **Quality Control Date** _____