



Molecular Trap™ Scavenging Packets

Product Fact Sheet

Usage:

Molecular Trap packets (“*Traps*”) are shipped fully activated, in individual vacuum sealed foil packages and are ready for immediate use.

Recommended Usage:

Molecular Trap Size	< 50ml of Solvent	< 100ml of Solvent	< 500ml of Solvent	< 2000ml of Solvent	< 4000ml of Solvent
1 Gram	X				
2 Grams		X			
5 Grams			X		
10 Grams				X	
20 Grams					X

This usage assumes that the user has added the Molecular Trap to the Solvent to maintain a low water condition (<50 ppm). If you are trying to produce a low water solvent from Reagent Grade or “old” solvent, use 2 packets per bottle and wait a minimum of 48 hours.

Quality Assurance:

Each manufactured lot is use tested by qualifying water removal from a “spiked” sample of Acetonitrile (using Karl-Fisher titration). The end user should insure product quality by inspecting the package to make sure that the vacuum integrity is intact. Any loss of vacuum indicates that air has entered the package which will reduce the performance of the Molecular Trap. Also, prior to use, after opening the foil pouch, inspect the inside of the foil package for any signs of powder which would indicate that the Molecular Trap package has leaked.

Materials:

Molecular Traps are designed and manufactured to withstand long-term, in-situ solvent exposure while maintaining full filtration of molecular sieve particulates. The packet is manufactured from a micro-porous, electronics grade, hydrophobic membrane material. The effective filtration of the membrane is 0.2u. This membrane material is tested safe for long term exposure to the solvents shown in the chart in this document.

Applications Suitability:

Molecular Traps are designed for safe use in automated instrumentation and have been functionally tested in Applied Biosystems, BioLytic Lab Performance, and Perceptive Biosystems automatic oligo synthesizers. For synthesis of oligos the Molecular Traps have been tested and shown to be effective in performing synthesis performance when used in the Acetonitrile Wash, Activator, Acetonitrile for dissolving amidites and in dissolved amidites.

Molecular Traps are ideal for maintaining low water levels in anhydrous solvents used in NMR. The high capacity Molecular Traps continuously absorb water and maintain dry solvents even through repeated exposure to air. This allows one to purchase solvents in larger more economical bottles.



General Solvent Exposure Table

Solvents Suitable for Extended Exposure (> 1 month*)	Solvents Suitable for Exposure up to One Month
Acetone	Chloroform
Acetonitrile	Methylene Chloride
Benzene	Tetrahydrofuran
Diethyl ether	Toluene
Dimethylformamide (DMF)	
Dioxane	
Ethyl Acetate	
Ethanol (Anhydrous)	
Hexane / Heptane	
Methanol (Anhydrous)	
Methylethyl Ketone (MEK)	
N-Methylpyrrolidinone (NMP)	

* No more than 3 months of continuous use is recommended to preserve the integrity of the Molecular Trap scavenger packet in solution.

Disposal:

Molecular Traps are non-hazardous as received. Once used however, the Molecular Trap becomes contaminated with the solvent it is used in and becomes contaminated waste which may be hazardous. The Molecular Trap takes on the contamination level of the solvent(s) it is used in and must be disposed of based on the requirements for that solvent(s). Care should be taken to avoid tearing the membrane pouch because Molecular Sieve dust can be irritating to the eyes and mouth.

Note:

Molecular Traps are extremely hygroscopic and are designed specifically to be used in low water solvents and solutions. Their capacity will be quickly exhausted if placed in solvents containing more than 0.1% water and should never be used in aqueous solutions.

Use care when placing Molecular Traps in solvents with unknown water content as exposure to solvents with high water content may produce heat which can cause pressure to build up in sealed bottles.



Coulometric Determination of Water on Acetonitrile

