

MagSi-Tools 600, 1.0, 2

Product Description



Product nr: MDXXX03 - MDXXX09

Technical Data

Product Name	MagSi-Tools		
	600	1.0	2
Size	600 nm	1.0 µm	2 µm
Concentration	10 mg/ml		
	beads/ml		
	$7-12 \cdot 10^9$	$3-8 \cdot 10^9$	$0.8-2 \cdot 10^9$
Supplied product volume	2 ml, 10 ml, 100 ml		
Material	Magnetic silica beads with activated surface		
Size Distribution	CI 90%		
	500 - 900 nm	0.7 - 1.3 µm	0.8 - 3.5 µm
Magnetic Particle Content (per gram dry solid)	30-40%		
Solution additives	MagSi-Tools, surface activated: PBS (pH 7.4), 0.05% Sodium Azide (NaN ₃ , Toxic!) MagSi-S, unmodified silica beads: water, 0.05% Sodium Azide		
Storage	Store at 4-8°C		

Material Supplied

- Vial with MagSi beads suspended in PBS buffer containing 0.05% Sodium Azide. Unmodified MagSi-S beads are stored in water and 0.05% sodium azide

Application

General Information

MagSi-Tools are magnetic silica beads with different surfaces to best suit your needs. Surfaces:

Surface activated	Formula	Example Applications
Silica	SiOH	-Nucleic acid isolation
Carboxyl	COOH	-Protein immobilization -Nucleic acid isolation
Aldehyde	CHO	-Protein immobilization
Amine	NH ₂	-Protein immobilization
Hydrophobic	C6-C18	-Protein capturing
Sulfhydryl	SH	-Protein immobilization

The magnetic properties allow easy and quick rinsing steps during modification and in their application.

The beads can be used to immobilize your own protein or molecule to the surface. Or you can use the positive or negative charge to separate molecules by controlling the pH.

Bead Usage

This product is stable at least 1 year after production date when stored at 2-8°C, unless mentioned otherwise on the label. Store beads in well closed vial and in upright position to prevent drying of the beads since this makes them more difficult to resuspend. Do not freeze the product! Vortex bead suspension well before use. If you

expect iron interference in downstream applications, we strongly advise you to rinse the beads before usage.

The MagSi-Tools are suspended in PBS buffer or water with 0.05% sodium azide added as a preservative. Before using the beads it's important to rinse them with water or PBS to remove the NaN₃ that could interfere with your test and for safety reasons since NaN₃ is toxic! MSDS of our products can be found at our site (www.magnamedics.com)

Additional materials needed

Depending on the application, some buffers and materials are needed.

- Magnets for bead separation/collecting.
- Mixer/vortex to mix samples and resuspend beads

Protocols

Protein immobilization

Bead Surface	Chemicals needed	Protein binding	Treatment	Comments
Carboxyl ¹ (COOH)	EDC/NHS	Amine groups (from lysine and/or as unblocked N-termini)	No treatment needed	Can be used to couple most proteins
Aldehyde (CHO)	Aldehyde/Amine reaction	Amine groups	No treatment needed	Add reducing agent to stabilize amide bond
Thiol (SH)	EDC/NHS followed by PDEA to introduce a reactive disulphide group	Free cysteine	Reduce disulphides under non-denaturing conditions to generate free cysteine.	Useful for proteins containing cysteines. Risk of multiple coupling
Amine ² (NH ₂)	Gluteraldehyde	Amine/aldehyde	No treatment needed	Add reducing agent to stabilize amide bond

¹ The first step is to activate the functional groups with N-hydroxysuccinimide in order of creating a highly reactive succinimide ester which reacts with amine groups contained in protein.

² Gluteraldehyde gives more stable protein binding than the carbodiimide reagents used with carboxylate beads.

Abbreviations: EDC, N-ethyl-N'-(dimethylaminopropyl) carbodiimide; NHS, N-hydroxysuccinimide; PDEA, 2-(2-pyridinyldithio) ethane-amine.

Additional Information

Internet

- www.magnamedics.com

Disclaimer

For R&D use only. Not for drug, household or other uses. Product contains 0.05% Sodium Azide which is toxic. Avoid contact with the suspension buffer. When disposing the suspension buffer, flush with large amounts of water. Material Data Sheet (MSDS) is available on our website at www.magnamedics.com.

Order Information

Product	Volume	Product number
MagSi-S 600	2ml 10ml 100ml	MD16009 MD18009 MD19009
MagSi-S 1.0	2ml 10ml 100ml	MD01003 MD02003 MD04003
MagSi-S 2	2ml 10ml 100ml	MD06003 MD08003 MD09003
MagSi-S-COOH 600	2ml 10ml 100ml	MD16004 MD18004 MD19004
MagSi-S-COOH 1.0	2ml 10ml 100ml	MD01004 MD03004 MD04004
MagSi-S-COOH 2	2ml 10ml 100ml	MD06004 MD08004 MD09004

Product	Volume	Product number
MagSi-S-NH2 600	2ml 10ml 100ml	MD16005 MD18005 MD19005
MagSi-S-NH2 1.0	2ml 10ml 100ml	MD01005 MD03005 MD04005
MagSi-S-NH2 2	2ml 10ml 100ml	MD06005 MD08005 MD09005
MagSi-S-SH 600	2ml 10ml 100ml	MD16006 MD18006 MD19006
MagSi-S-SH 1.0	2ml 10ml 100ml	MD01006 MD03006 MD04006
MagSi-S-SH 2	2ml 10ml 100ml	MD06006 MD08006 MD09006
MagSi-S-CHO 600	2ml 10ml 100ml	MD16007 MD18007 MD19007
MagSi-S-CHO 1.0	2ml 10ml 100ml	MD01007 MD03007 MD04007
MagSi-S-CHO 2	2ml 10ml 100ml	MD06007 MD08007 MD09007

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