

1 Introduction

MagIC MS is a "glue" software which links Agilent ChemStation or Agilent ICP-MS ChemStation to Metrohm MagIC Net.

With MagIC MS installed, sample data can be sent from your Agilent software to MagIC Net, a MagIC Net method can be started, and measured signals can be sent back to your Agilent software via an interface (see *chapter 3* for more information).

This document gives you the information needed to **use** the MagIC MS software:

- *Chapter 2 "Prerequisites" (p. 1)* explains what must be fulfilled before you can use MagIC MS.
- *Chapter 3 "How MagIC MS works" (p. 2)* illustrates the functional principle.
- *Chapter 4 "Directories" (p. 4)* helps you to locate the MagicMS.ini file.
- *Chapter 5 "Understanding the MagicMS.ini file" (p. 5)* contains detailed information about the role and contents of the MagicMS.ini file.
- *Chapter 6 "Using MagIC MS with Agilent ChemStation" (p. 8)* explains how to make MagIC MS work with Agilent ChemStation.
- *Chapter 7 "Using MagIC MS with Agilent ICP-MS ChemStation" (p. 10)* explains how to make MagIC MS work with Agilent ICP-MS ChemStation.

2 Prerequisites

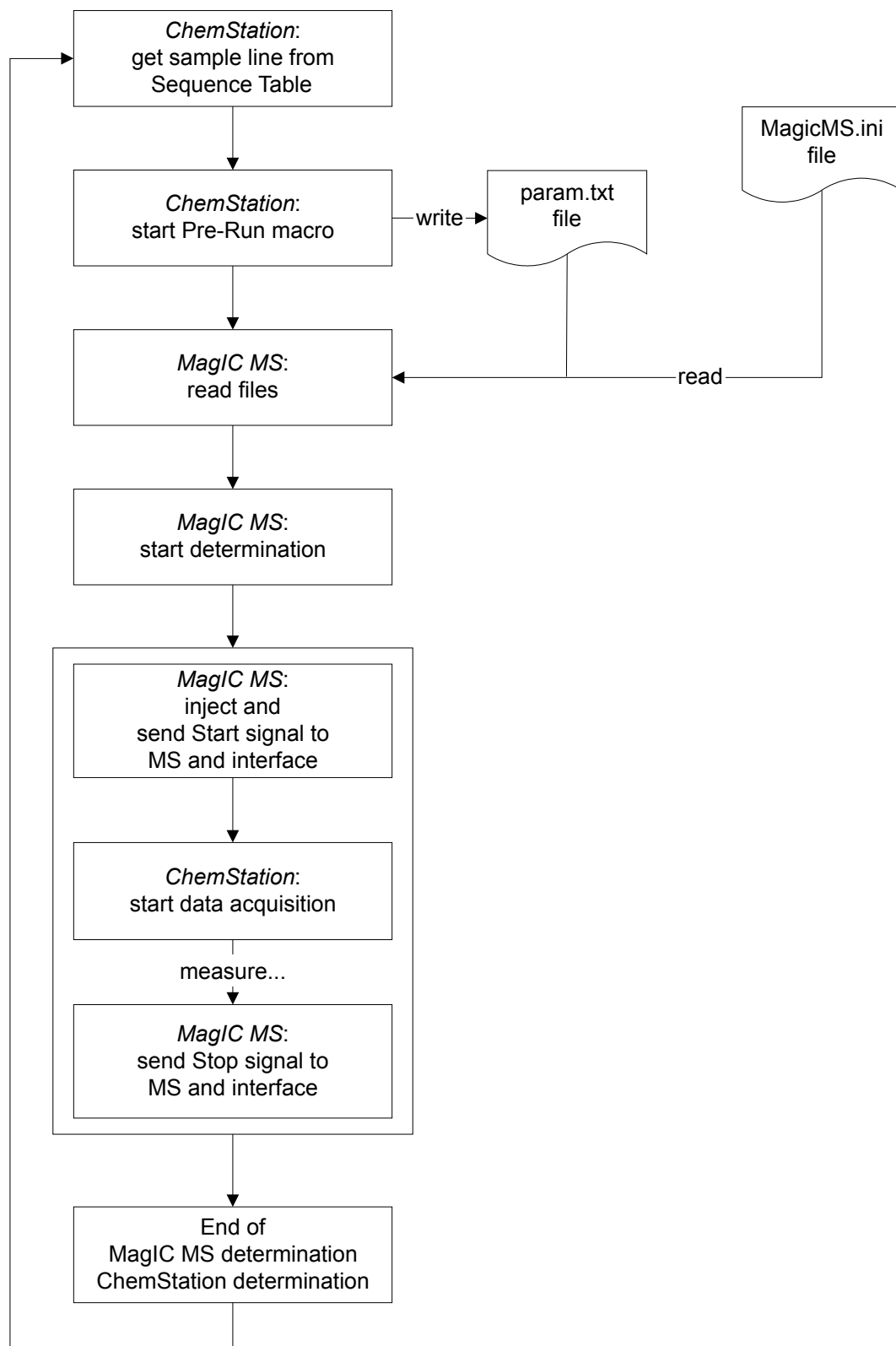
Before using MagIC MS, ensure that the following requirements are met:

- MagIC MS must be installed according to the MagIC MS Installation Guide. This implies that all the prerequisites described in the MagIC MS Installation Guide must also be fulfilled.
- On your Windows desktop, there should be a shortcut pointing to the **MagicMS.exe** program.
- In MagIC Net, under **Configuration ► Tools ► Options ► Dialog language**, the dialog language **English** must be selected.

3 How MagIC MS works

From the user's point of view, the Agilent software (ChemStation or ICP-MS ChemStation) is the master program, whereas MagIC MS runs in the background.

The following diagram illustrates what happens after starting the Sequence Table in ChemStation (or the Sample Log Table in ICP-MS ChemStation):



- The **Pre-Run macro** is a macro which the Agilent software starts before all other parts of the method. The macro is provided by Metrohm. It must be activated for a particular method as explained in *chapter "Activating the MagicMS Macro in the Method"* (p. 9) and *chapter "Activating the ICPGlue Macro in the Method"* (p. 10), respectively.

- The file **param.txt** is generated by the Pre-Run macro. It contains the sample data parameters for the next determination to be started in MagIC Net via MagIC MS. Do not attempt to modify this file; when read by MagIC MS it will be deleted automatically.
- The file **MagicMS.ini** is described in detail in *chapter 5, "Understanding the MagicMS.ini file"* (p. 5).

It is important to understand that MagIC MS **merges** the two files, **param.txt** and **MagicMS.ini**, by applying the following simple rules:



Note

1. Parameters which are not in **param.txt** are taken from **MagicMS.ini**.
2. If a parameter is found in both files, then the one in **param.txt** overrides the one in **MagicMS.ini**.

This means that parameters which do not change during a determination series should be specified in **MagicMS.ini**. This way, this information doesn't have to be specified for every sample in the Sequence Table (or Sample Log Table).

4 Directories

As a user of MagIC MS, you need to be aware of the directory where the file **MagicMS.ini** (see *Chapter 5, page 5*) is. We refer to this as the **[DataDir]**. The exact path to this directory depends on the version and language of the installed Windows operating system.



Note

For the sake of simplicity, this document considers only the **English** versions of **Microsoft Windows XP**, **Microsoft Windows Vista**, and **Microsoft Windows 7**. If a different version or language of Windows is installed, then some path names will be different.

Typical locations of the MagicMS.ini file

The first part of the path depends on the Windows version and language, whereas the second part is **Metrohm\MagicMS\MagicMS.ini**:

Microsoft Windows (English)	[DataDir]\MagicMS.ini
XP	C:\Documents and Settings\All Users \Application data\Metrohm\MagicMS\ MagicMS.ini
Vista and 7	C:\ProgramData\Metrohm\MagicMS\ MagicMS.ini

For more information about MagIC MS and Agilent directories see the MagIC MS Installation Guide.

5 Understanding the MagicMS.ini file

This chapter explains the role and the contents of the **MagicMS.ini** file. The location of this file is in the directory referred to as **[DataDir]** as explained in *chapter 4 (p. 4)*.

Contents of the MagicMS.ini file

MagicMS.ini contains 2 sets of parameters corresponding to the 2 main functions of this file:

- **Technical parameters** which control the behavior of **MagicMS.exe** (see *"Technical parameters", page 5*).
- **Sample data parameters**, typically those which do not change from sample to sample during a determination series. They correspond to sample data parameters in MagIC Net and are explained in more detail in section *"Sample data parameters" (p. 7)*.



Note

In the **examples** folder of the MagIC MS source directory (see MagIC Net CD-ROM) there is an example **MagicMS.ini** file which you can use as a starting point.

Editing the MagicMS.ini file

When editing **MagicMS.ini**, be sure to

- use a plain text editor (like Windows notepad). Do *not* use word processors like Microsoft Word in this case.
- write each parameter on a separate line.
- write parameters in the format **Name=Value** (on the same line), where **Name** is the name of the parameter and **Value** represents its value.



Note

MagicMS.exe reads **MagicMS.ini** only when it starts. Any changes to **MagicMS.ini** won't take effect until the next start of **MagicMS.exe**.

Technical parameters

These are configuration parameters which influence the behavior of **MagicMS.exe**. Some of them are for test purposes only, which means that users should not change them. Others need to be changed rarely, if ever.

AutoInit

For test purposes only. Users should not change the parameter value.

This parameter determines whether MagIC MS should automatically start the MagIC Net graphical user interface or not.

Selection	0 1
Default value	1

Blank

Users should not change the value of this parameter.

Input	The term "Blank", localized according to the currently selected language in MagIC Net.
Default value	Blank

CheckStandard

Users should not change the value of this parameter.

Input	The term "Checkstandard", localized according to the currently selected language in MagIC Net.
Default value	CheckStandard

MagICNetwindow

This parameter tells MagIC MS to either show, minimize, or hide the MagIC Net application window.

Selection	show minimize hide
Default value	show

MessageCheckTime

Time (ms) to wait for possible error messages after a MagIC Net method has been loaded.

Range	0 ... 10000 ms
Default value	500 ms

MethodLoadTime

Maximum time (ms) allowed for a MagIC Net method to load.

Range	0 ... 10000 ms
Default value	500 ms

Sample

Users should not change the value of this parameter.

Input	The term "Sampe", localized according to the currently selected language in MagIC Net.
Default value	Sample

Spiking

Users should not change the value of this parameter.

Input	The term "Spiking", localized according to the currently selected language in MagIC Net.
Default value	Spiking

Standard

Users should not change the value of this parameter.

Input	The term "Standard", localized according to the currently selected language in MagIC Net.
Default value	Standard

StartTime

Time (ms) to wait between reading the exported sample data (**param.txt**) and starting the MagIC Net method.

Range	0 ... 10000 ms
Default value	500 ms

Visible

For test purposes only. Users should not change the parameter value.

This parameter determines whether the MagIC MS information window should be visible or not.

Selection	0 1
Default value	0

Workplace

Name of the MagIC Net workplace to start the method in.

Input	Workplace
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Sample data parameters

The names of these parameters must correspond to sample data parameter names in the English (!) version of MagIC Net. That is the reason why MagIC Net must be configured to use English dialog texts, as explained in chapter 2, (p. 1).

More detailed information on the sample data parameters can be found in the MagIC Net manual (or online-help).

Amount

Correction factor for taking into account various initial weights for different samples.

Range	0.00001 ... 1000000.00000
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Dilution

Dilution factor for the sample.

Please note that in the case of Agilent ICP-MS ChemStation, Dilution is not defined the same way as in MagIC Net.

Range	0.001 ... 100000.000
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Ident

Optional user-defined, additional sample identification (not the sample name).

Input	max. 100 characters
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Info# (#=1,2,3,4)

Optional additional information concerning the sample.

Input	max. 100 characters
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Method

Name of the MagIC Net method to start.

Input	(name of any MagIC Net method)
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SampleType

Type of sample.

Selection	Sample Standard 1...n Spiking 1...n Check standard 1...n Blank
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Shutdown

This flag determines whether the hardware should be stopped (1) or not (0) after the method run.

Selection	0 1
Default value	0

Value# (#=1,2,3,4)

Optional additional values for the sample (numerical, up to 10 digital places).

Range	10⁻⁹⁹ ... 10⁺⁹⁹
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Vial

Sample position.

Range	1 ... 999
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Volume

Volume of the sample in µL.

Range	0.01 ... 1000000.00 µL
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Note

MagIC MS does not support the **Injections** parameter, i.e. with MagicMS, only 1 injection is possible per sample!

6 Using MagIC MS with Agilent ChemStation

If your Agilent software is **ChemStation** (*not* ICP-MS ChemStation), then follow the instructions in this chapter.

6.1 Activating the MagicMS Macro in the Method

The macro to use with Agilent ChemStation is **MagicMS** (the corresponding file is called **MagicMS.mac**, but the ".mac" extension must be omitted at this point):

Agilent ChemStation must be started. To activate the macro in a method, follow these steps:

- 1 From the menu of program part **Method and Run Control**, select **Method ► Run Time Checklist...**
- 2 In the section **Check Method Sections to Run**, activate the checkbox **Pre-Run Command / Macro**.
- 3 In the field to the right of the checkbox **Pre-Run Command / Macro**, enter the following text:
MagicMS
This is the name of the macro, but *without* the ".mac" extension.
- 4 Click the **OK** button to close the dialog.
- 5 Save the method.

6.2 Setting up the Sequence Table

When setting up the Sequence Table with the idea of sending sample data from Agilent ChemStation to MagIC Net via MagIC MS, there is one important point to be aware of:



Note

The following sample parameters known to MagIC Net (*see Chapter 5, page 5*) have *no* corresponding fields in ChemStation's Sequence Table:

- **Method**
Please note: the Method field in the Sequence Table refers to the Agilent ChemStation method, *not* the MagIC Net method!
- **Info#** (#=1,2,3,4)
- **Value#** (#=1,2,3,4)
- **Shutdown**

Two ways of specifying parameters of that kind

Choose one of the following options (or a combination of both) to specify such parameters:

- Parameters can be written into the **Sample Info** field for each line of the Sequence Table. This approach makes sense when parameters or parameter values vary between sample data lines (i.e. determinations). Each parameter must be written in the format **Name=Value;** where **Name** is the name of the parameter and **Value** represents its value. Note the semicolon (;) at the end of each parameter value.
- Parameters can be written to the **MagicMS.ini** file. This approach only makes sense for parameters whose values are valid for all sample data lines (i.e. determinations). See section *Understanding the MagicMS.ini file* on p. 5 for detailed information.

7 Using MagIC MS with Agilent ICP-MS ChemStation

If your Agilent software is **ICP-MS ChemStation** (*not* ChemStation), then follow the instructions in this chapter.

7.1 Activating the ICPGlue Macro in the Method

The macro to use with Agilent *ICP-MS* ChemStation is **ICPGlue** (the corresponding file is called **ICPGlue.mac**, but the ".mac" extension must be omitted at this point):

Agilent ICP-MS ChemStation must be started. To activate the macro in a method, follow these steps:

- 1 In the menu, select **Methods ► Edit Method Information....**
- 2 In the section **Check Method Sections to Run**, activate the checkbox **Pre-Run Command / Macro**.
- 3 In the field to the right of the checkbox **Pre-Run Command/Macro**, enter the following text:

ICPGlue

This is the name of the macro, but *without* the ".mac" extension.
- 4 Click the **OK** button to close the dialog.
- 5 Save the method.

7.2 Setting up the Sample Log Table

When setting up the Sample Log Table with the idea of sending sample data from Agilent ICP-MS ChemStation to MagIC Net via MagIC MS, there is one important point to be aware of:



Note

The following sample parameters known to MagIC Net (*see Chapter 5, page 5*) have *no* corresponding field in ICP-MS ChemStation's Sequence Table:

- **Method**

Please note: the Method field in the Sample Log Table refers to the Agilent ICP-MS ChemStation method, *not* the MagIC Net method!

- **Info#** (#=1,2,3,4)

- **Shutdown**

How to specify these parameters is described in *section "Two ways of specifying parameters of that kind" on page 9*.