

SOLUTIONS BY



Sample Composition DEXTech Product Family

Content

1. Introduction	3
2. Sample Composition DEXTech Plus and DEXTech Pure	3
2.1 DEXTech Plus: Default Florisil Method	3
2.2 DEXTech Plus and DEXTech Pure: Default Alox Plus and Default Alox Pure Method	3
3. Sample Composition DEXTech Heat.....	4
3.1 DEXTech Heat: Default Alox Plus and Default Alox Pure Method	4
4. Sample Composition DEXTech 16	4
4.1 DEXTech 16: Default Alox Plus and Default Alox Pure.....	5

1. Introduction

Using the DEXTech product family the clean-up procedure of samples for the PCB and dioxin analysis can be automatically processed. The variety of applied matrices is wide: from food samples (like eggs, oil, fish, meat, etc.), feed samples up to environmental samples (like sediments, fly ash, or sludge). The processing is independent of the extraction method. In order to prevent sample introduced process terminations some precautions have to be observed. To ensure an uncomplicated processing of the samples during the clean-up step with one of the DEXTech systems, the following content shows the recommended way of preparing the samples before.

2. Sample Composition DEXTech Plus and DEXTech Pure

Sample composition and sample volume depends on the used method and sample loop.

Two different sample loops are available:

- The standard 15 mL sample loop with a max. sample volume of 12 mL
- 20 mL sample loop (P/N 15710) with a max. sample volume of 17 mL.

Maximum fat capacity for Universal, Standard, and Environmental column: 5 g
Maximum fat capacity for SMART column: 1.5 g

2.1 DEXTech Plus: Default Florisil Method

For the Default Florisil method, the extracted sample should be dissolved in n-hexane with the addition of 2 mL toluene.

For example, 3 g of fat are mixed with the internal standard and 2 mL of toluene and are filled up to a total volume of 10 mL with n-hexane.

The amount of toluene should not be changed as this might influence the fractionations and the recovery of the target analytes.

2.2 DEXTech Plus and DEXTech Pure: Default Alox Plus and Default Alox Pure Method

For the Default Alox Plus and the Default Alox Pure method, the sample should be dissolved in n-hexane. Other solvents like toluene, methanol or acetone are tolerated to a maximum volume of 1 mL in a 10 mL sample.

For example, 3 g of fat are mixed with the internal standard and are filled up to a total volume of 10 mL with n-hexane.

3. Sample Composition DEXTech Heat

The DEXTech Heat system was developed based on the DEXTech Pure system. The instrument includes heated parts (sample vial holder, sample loop and different tubings) for the processing of difficult samples and fats that harden at room temperature. These include for example samples like palm oil, palm fatty acid distillates (PFAD), palm stearin, stearic acid or palmitic acid as well as different animal fats.

The DEXTech Heat has in contrast to the DEXTech Plus and Pure system a 20 mL sample loop by default. The maximum sample volume is 17 mL with a rinsing volume of the sample vial of 1 x 1 mL.

3.1 DEXTech Heat: Default Alox Plus and Default Alox Pure Method

The maximum fat/oil content in a DEXTech Heat sample is 3 g.

To prepare the sample melt the fat sample at about 80 °C and weigh 3 g of the liquefied sample into the sample vial. Add 1 mL of Toluene, 1 mL of Methanol and the internal standards to the sample and fill up the vial to an end volume of 17 mL with n-hexane. By adding the cold n-hexane, the sample can harden again. Put the sample vial into the heated sample vial holder of the DEXTech Heat system and melt the sample again. Keep the sample vial in the sample vial holder to keep the sample liquefied.

4. Sample Composition DEXTech 16

All sample matrices that can be processed on the DEXTech Plus or DEXTech Pure system without any problems can also be handled on the DEXTech 16 system. Samples that have the tendency to clog up parts of the DEXTech Plus/Pure system (column frits, needle, tubing) or increase the system pressure strongly (> 4,9 bar) during the sample loading process should not be processed on the DEXTech 16 system. Samples that harden or show an increased precipitation standing at room temperature are not applicable on the DEXTech 16 system.

Examples of samples that should not be processed on the DEXTech 16 system are shown here.



Figure 1 and 2:: Sample with a high amount of precipitation

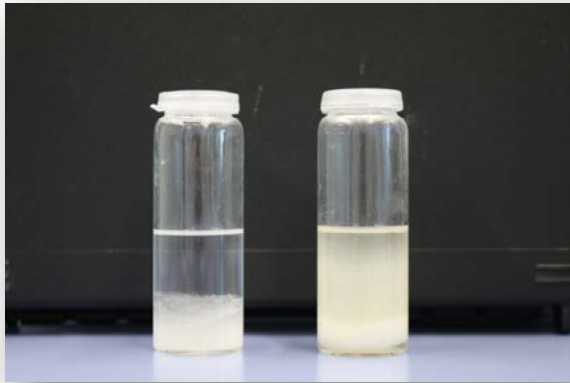


Figure 3: Samples that harden at room temperature after dissolving them in n-hexane

Please note:

To ensure the smooth operation of the DEXTech 16 system, sample matrices should be tested first on a DEXTech Plus or Pure system.

4.1 DEXTech 16:

Default Alox Plus and Default Alox Pure

The sample is dissolved in n-hexane. The maximum sample volume is 10 mL. The sample can contain a maximum of 1 mL toluene.

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