Default Methods

DEXTech Pure / DEXTech Heat
Default Methods

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Screen for freely parametrizable method input

Conditioning 1 = conditioning of column 1
Conditioning 2 = conditioning of column 1 + column 2
Conditioning 3 = conditioning of column 3
Conditioning 4 = conditioning of column 3
Default Methods

1. Introduction

The DEXTech Pure/Heat system is a very fast and flexible clean-up system for the PCB and Dioxin analysis. With the DEXTech Pure/Heat system you have the possibility to choose from two different kind of Alox clean-up methods, that differ in their fractionation pattern.

Alox Pure Clean-up

Fraction 1: non-orthos-PCBs, ndl-PCBs, mono-ortho-PCBs, PBDEs
Fraction 2: PCDD/Fs

Alox Plus Clean-up:

Fraction 1: ndl-PCBs, mono-ortho-PCBs, PBDEs
Fraction 2: non-orthos PCBs, PCDD/Fs

For samples where you are only interested in a dioxin or a PCB clean-up, the Alox Pure/Heat instrument also offers you the possibility of a 2 column Dioxin only or a “speedy” two column “PCB only” clean-up. This saves time, solvent and costs per sample.

LCTech provides different columns for the DEXTech Pure system depending on the individual requirements, matrix or the desired method.

1. Acidic silica column; depending on fat content (Universal, SMART) – column 1
2. Aluminium-oxide column 2
3. Carbon column; reusable – column 3

On the following pages, the four different DEXTech Pure Default/Heat methods depending on the chosen fractionation pattern for the clean-up of polychlorinated dibenzodioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs) are shown.

These methods are used successfully for different matrices in laboratories around the world.
Default Methods

Universal, SMART, Aluminium-oxide, and Carbon column as well as adapter for easy change between Universal and SMART column.
2. Method: Default Alox Plus

Default method using the Universal column (column 1) together with the Aluminium-oxide column (column 2) and a Carbon column (column 3).

Fractioning:

**Fraction 1:** ndl-PCBs, mono-ortho-PCBs, PBDEs  
**Fraction 2:** non-orthos-PCBs, PCDD/Fs

**Process time:** 65 min.

The process time includes the loading of 10 mL sample as well as the rinsing of the sample vial with 3 x 1 mL solvent.

**Solvent consumption:**

- n-Hexane: 308 mL
- n-Hexane /DCM: 24 mL
- Toluene: 10 mL
- Total: 342 mL
4. Method: Default Alox Plus SMART

Default method using the **SMART** column (column 1) together with the **Aluminium-oxide** column (column 2) and a **Carbon** column (column 3).

**Fractioning:**

**Fraction 1:** ndl-PCBs, mono-ortho-PCBS, PBDEs

**Fraction 2:** non-orthos-PCBS, PCDD/Fs

**Process time:** 45 min.

The process time includes the loading of 10 mL sample as well as the rinsing of the sample vial with 3 x 1 mL solvent.

**Solvent consumption:**

- n-Hexane: 168 mL
- n-Hexane / DCM: 24 mL
- Toluene: 10 mL
- Total: 202 mL
5. Method: Default Alox Pure

Default method using the **Universal** column (column 1) together with the **Aluminium-oxide** column (column 2) and a **Carbon** column (column 3).

**Fractioning:**
- **Fraction 1:** non-orthos-PCBs, ndI-PCBs, mono-ortho-PCBs, PBDEs
- **Fraction 2:** PCDD/Fs

**Process time:** 72 min.

The process time includes the loading of 10 mL sample as well as the rinsing of the sample vial with 3 x 1 mL solvent.

**Solvent consumption:**
- n-Hexane: 308 mL
- n-Hexane / DCM (50:50): 24 mL
- n-Hexane / DCM (80:20): 24 mL
- Toluene: 10 mL
- Total: 366 mL
6. Method: Default Alox Pure SMART

Default method using the SMART column (column 1) together with the Aluminium-oxide column (column 2) and a Carbon column (column 3).

Fractioning:
Fraction 1: non-orthos-PCBs, ndI-PCBs, mono-ortho-PCBs, PBDEs
Fraction 2: PCDD/Fs

Process time: 52 min.

The process time includes the loading of 10 mL sample as well as the rinsing of the sample vial with 3 x 1 mL solvent.

Solvent consumption:
- n-Hexane: 168 mL
- n-Hexane /DCM (50:50): 24 mL
- n-Hexane /DCM (80:20): 24 mL
- Toluene: 10 mL
- Total: 226 mL
**7. 2 Column Default Dioxin Only Method**

Default method using the *Universal* column (column 1) and a *Carbon* column (column 3). The *Dummy* column has to be placed on position 2.

**Fraction 2: PCDD/Fs**

**Process time:** 52 min.

The process time includes the loading of 10 mL sample as well as the rinsing of the sample vial with 3 x 1 mL solvent.

**Solvent consumption:**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Hexane</td>
<td>273 mL</td>
</tr>
<tr>
<td>Toluene</td>
<td>10 mL</td>
</tr>
</tbody>
</table>
8. 2 Column Default SMART Dioxin Only Method

Default method using the Smart column (column 1) and a Carbon column (column 3). The Dummy column has to be placed on position 2.

**Fraction 2:** PCDD/Fs

**Process time:** 32 min.

The process time includes the loading of 10 mL sample as well as the rinsing of the sample vial with 3 x 1 mL solvent.

**Solvent consumption:**
- n-Hexane: 140 mL
- Toluene: 10 mL
9. “Speedy” 2 Column PCB Only Method

Some laboratories are interested only in PCB analysis. In this case DEXTech Pure offers a 2-column-method in simply cutting the methods “Default Alox Pure” or “Default Alox Pure SMART”.

Set the values in the fraction steps “Pre-run F2” and “Fraction 2” to zero (0) and insert a dummy column in the column tower on position 3.

This leads to a reduced runtime of 18 mins for both default methods as well as 34 mL less in solvent consumption.