# MEGAColumns

## Typical Test Report

**MEGA-WAX**
**MEGA-5MS**
**FAST MEGA-5**

MEGA CAPILLARY COLUMNS LABORATORY — Gas Chromatography made in Italy — since 1980

### COLUMN INSTALLATION, STORAGE AND CHEMICAL CAPABILITY GUIDE

**1 PRELIMINARY CHECK**
Check the septa, gas traps for expiration and the flows of the makeup and detector gases. Clean or replace the injector liner, if needed.

**2 INSTALL THE COLUMN INTO THE INJECTOR**
Your column is sealed immediately after the MEGA final test. Cut 2-3 cm from both ends, preferably using a knife for glass or a ceramic wafer to obtain a clean square end. Place a column nut and the ferrule over one end of the column. Ferrule I.D. is selected based on the capillary column. Cut the end of the column after ferrule placement. Install the column into the injector. The optimal insertion distance of the column into the injector is different for each model of GC. Consult your GC's manual for the proper insertion distance and technique.

**3 CARRIER GAS AND FLOW CHECKS**
Turn on the carrier gas. Adjuste the head pressure to obtain a reasonable flow rate of carrier gas. Check the column flow by dipping the column end into a small vial containing a solvent. A stream bubbles should be observed. If not, check the possible leaks in the injector or for any sign of damage to the column. High purity helium, hydrogen or nitrogen are the preferred carrier gases for capillary columns. Use gas purity traps on the carrier gas lines to extend column lifetime and to minimize background noise.

**4 INSTALL THE COLUMN INTO DETECTOR**
Install the column into detector following all of the installation precautions as stated in the previous injector installation section (step 2). Inspect the GC system for leaks before heating the column for the first time.

**5 COLUMN CONDITIONING**
Once the column has been checked for proper installation and absence of leaks, it is ready for conditioning. Heat the column to its isothermal upper temperature limit or to a temperature 10-20°C above the highest operating temperature of your particular analytical method for 2-4 hours. Do not exceed the upper limit temperature indicated on the column label, or column damage will results.

**6 GROB TEST (OR DEDICATED TEST MIXTURE)**
A test mixture should be injected to further determine column installation and performances. Inject the GROB Test Mixture (or the Dedicated Test Mixture that you find in the column box) following the instructions on the capillary column Quality Assurance Test sheet included into the package.

**7 COLUMN STORAGE**
When a column is not in use, MEGA recommends the column ends be sealed. Seal the column ends with GC septa and return the column to its original box. Upon re-installation, cut ends to insure that small pieces of septum has not be left inside the column tubing.

**8 COLUMN CLEANING**
If chemical damage to the stationary phase does occur, try to remove the 0.5 – 1 m of the column (injection side). This will often restores column performance. The CROSSBOND columns are solvent proof. When you see a lost of efficiency or peaks tailing it is possible to clean the column to solve the problem. Use Nitrogen (or another inert gas) to send into the column solvent through the detector side. Usually you should use solvents with different polarity in the following order: hexane>methylene chloride>methanol<methylene chloride<hexane. Dry the column under Nitrogen flow and follow the step 5 for a new conditioning. Don't wash the column "NOT CROSSBOND" with solvent, it will destroy the stationary phase film.

**9 RETENTION GAP**
When you must analyse "dirty" and non-volatile samples, MEGA recommends to use a Retention Gap: this device blocks the non-volatile compounds saving the column from contamination thus extending the column lifetime. The Retention Gap is connected to the column through Press-Fit Unions. When you see a lost of efficiency or peak tailing the Retention Gap must be changed.



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### QUALITY ASSURANCE TEST

Dear Customer,

Thank you for choosing a MEGA product.

You can find in the box all the instructions for column's installation and testing. Attached you can also find the Quality Assurance Test Chromatogram and the Test Mixture Sample.

| COLUMN SPECIFICATIONS | |
|---|---|
| STATIONARY PHASE: | MEGA-WAX |
| FILM THICKNESS: | 1.00 µm |
| INTERNAL DIAMETER: | 0.32 mm |
| LENGTH: | 30 m |
| | Crossbond |
| TEMPERATURE MAX: | 250°C |
| COLUMN ID #: | 12177 |
| CATALOG CODE: | S-WAX-032-100-30 |

### CHROMATOGRAPHIC CONDITIONS

| | | | |
|---|---|---|---|
| **Temperature Program:** | 40°C | 2.5°C/min | 220°C |
| **Injector:** | Split | 250°C | |
| **Injection Volume:** | 2 µL | **Split Flow:** | 40 mL/min |
| **Detector:** | FID | 250°C | |
| **Carrier Gas:** | Hydrogen | 60 kPa | Constant Pressure |

### PEAK IDENTIFICATION AND DATA

| Sample: | GROB TEST MIXTURE # 2 (FLUKA Catalog # 86501) |
|---|---|
| **Peak** | **Name** |
| 10 | Decane |
| 12 | Dodecane |
| A | 2,6-dimethylaniline |
| Am | dicyclohexylamine |
| D | 2,3-butanediol |
| E10 | Methyl Decanoate |
| E11 | Methyl Undecanoate |
| E12 | Methyl Laurate |
| Ol | 1-Octanol |
| P | 2,6-dimethylphenol |
| S | 2-ethylcaproic acid |

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MEGA CAPILLARY COLUMNS LABORATORY

**MEGA-WAX**

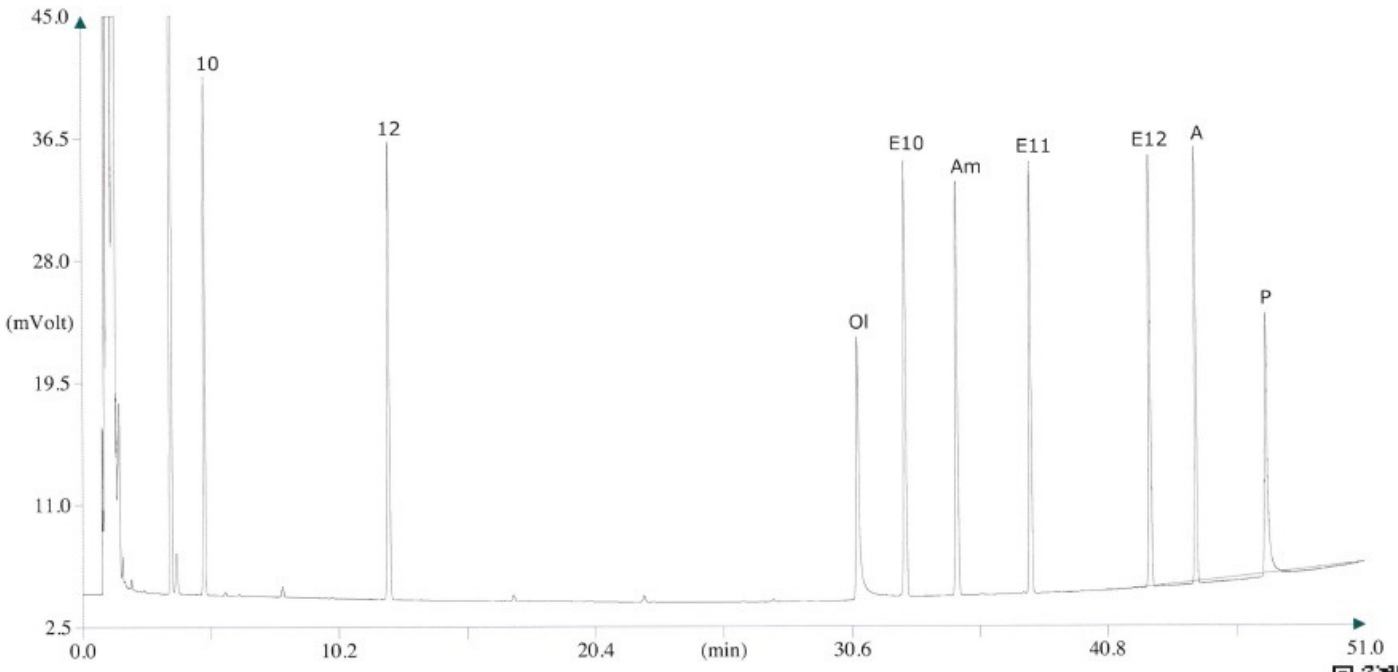
MEGA CAPILLARY COLUMNS LABORATORY

## Quality Assurance **Test**

***Date:*** 12.04.2012

***Sample Test:*** Grob Test Mixture # 2 (Fluka Catalog # 86501)

***Column ID #:*** 12177

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*Gas Chromatography made in Italy*

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# COLUMN INSTALLATION, STORAGE AND CHEMICAL CAPABILITY GUIDE

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# QUALITY ASSURANCE TEST

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| COLUMN SPECIFICATIONS | |
|---|---|
| STATIONARY PHASE: | **MEGA-WAX** |
| FILM THICKNESS: | **1.00 µm** |
| INTERNAL DIAMETER: | **0.32 mm** |
| LENGTH: | **30 m** |
| | **Crossbond** |
| TEMPERATURE MAX: | **250°C** |
| COLUMN ID #: | **12177** |
| CATALOG CODE: | **S-WAX-032-100-30** |

## CHROMATOGRAPHIC CONDITIONS

| | | | |
|---|---|---|---|
| **Temperature Program:** | 40°C | 2.5°C/min | 220°C |
| **Injector:** | Split | 250°C | |
| **Injection Volume:** | 2 µL | **Split Flow:** | 40 mL/min |
| **Detector:** | FID | 250°C | |
| **Carrier Gas:** | Hydrogen | 60 kPa | Constant Pressure |

## PEAK IDENTIFICATION AND DATA

| Sample: | GROB TEST MIXTURE # 2 (FLUKA Catalog # 86501) |
|---|---|

| Peak | Name | | | |
|---|---|---|---|---|
| 10 | Decane | | | |
| 12 | Dodecane | | | |
| A | 2,6-dimethylaniline | | | |
| Am | dicyclohexylamine | | | |
| D | 2,3-butanediol | | | |
| E10 | Methyl Decanoate | | | |
| E11 | Methyl Undecanoate | | | |
| E12 | Methyl Laurate | | | |
| OI | 1-Octanol | | | |
| P | 2,6-dimethylphenol | | | |
| S | 2-ethylcaproic acid | | | |

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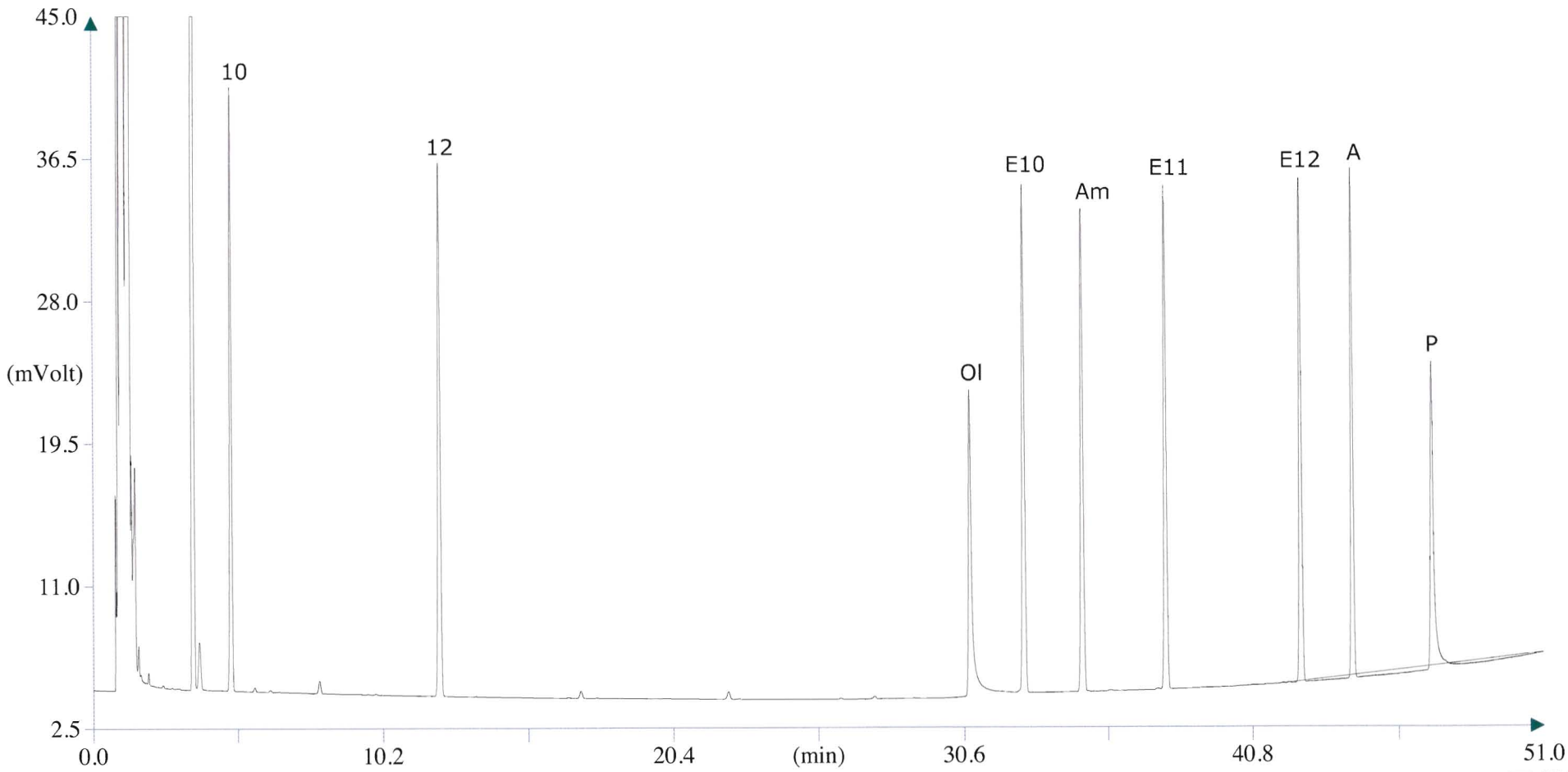
# Quality Assurance **Test**

***Date:*** 12.04.2012

***Sample Test:*** Grob Test Mixture # 2 (Fluka Catalog # 86501)

***Column ID #:*** 12177

**MEGA-WAX 30 0.32 1.0040 2.5C/min 220C,60KPa**



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# QUALITY ASSURANCE TEST

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| COLUMN SPECIFICATIONS | |
|---|---|
| STATIONARY PHASE: | **MEGA-5 MS** |
| FILM THICKNESS: | **0.25 µm** |
| INTERNAL DIAMETER: | **0.25 mm** |
| LENGTH: | **30 m** |
| | **Crossbond** |
| TEMPERATURE MAX: | **330 - 350°C** |
| COLUMN ID #: | **12683** |
| CATALOG CODE: | **MS-5-025-025-30** |

## CHROMATOGRAPHIC CONDITIONS

| | | | |
|---|---|---|---|
| **Temperature Program:** | 40°C | 2.5°C/min | 220°C |
| **Injector:** | Split | 250°C | |
| **Injection Volume:** | 1.5 µL | **Split Flow:** | 40 mL/min |
| **Detector:** | FID | 250°C | |
| **Carrier Gas:** | Hydrogen | 60 kPa | Constant Pressure |

## PEAK IDENTIFICATION AND DATA

| Sample: | GROB TEST MIXTURE # 2 (FLUKA Catalog # 86501) |
|---|---|

| Peak | Name |
|---|---|
| 10 | Decane |
| 12 | Dodecane |
| A | 2,6-dimethylaniline |
| Am | dicyclohexylamine |
| D | 2,3-butanediol |
| E10 | Methyl Decanoate |
| E11 | Methyl Undecanoate |
| E12 | Methyl Laurate |
| OI | 1-Octanol |
| P | 2,6-dimethylphenol |
| S | 2-ethylcaproic acid |

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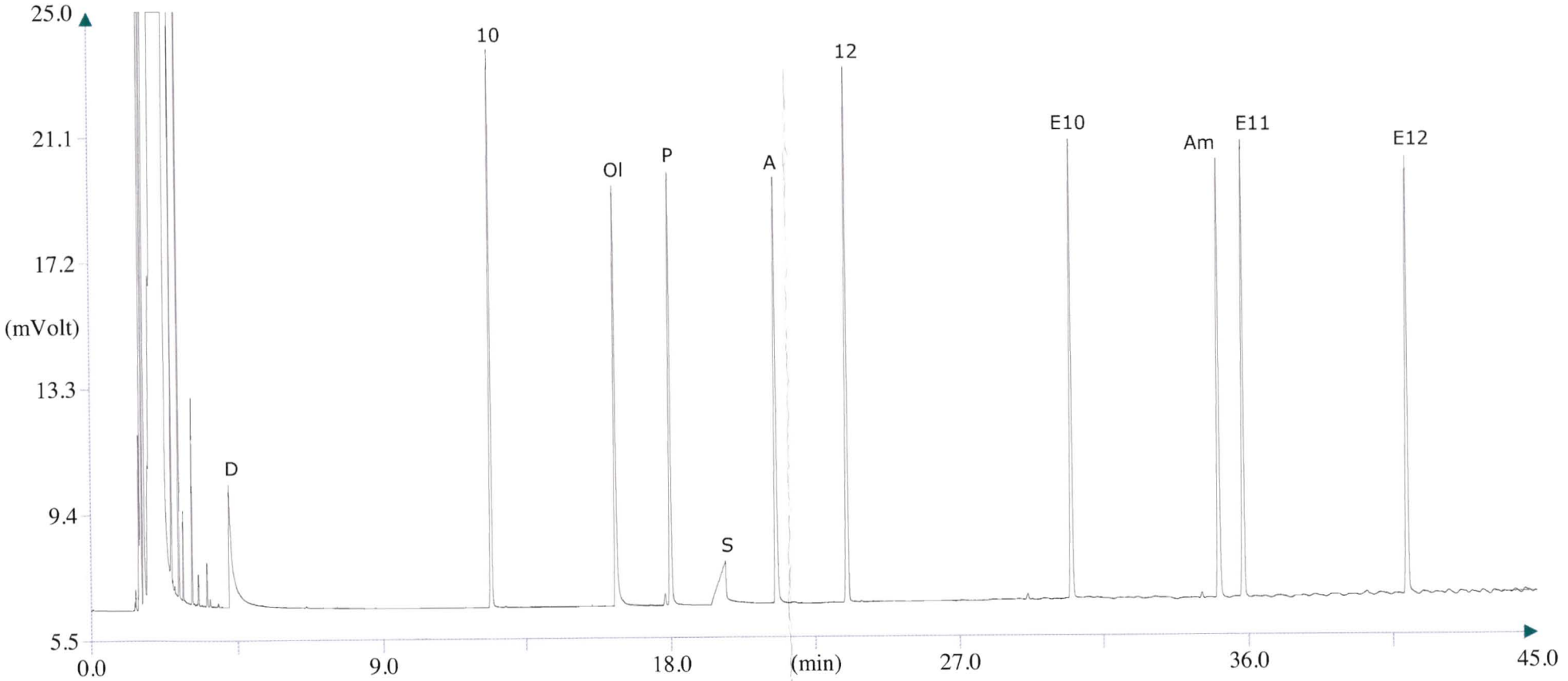
# Quality Assurance **Test**

**MEGA-5MS**
**30 0.25,0.25**
**40 2.5C/min 220C, 60KPa**

***Date:*** 13.11.2012

***Sample Test:*** Grob Test Mixture # 2 (Fluka Catalog # 86501)

***Column ID #:*** 12683






**MEGA-WAX**

# QUALITY ASSURANCE TEST

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| COLUMN SPECIFICATIONS | |
|---|---|
| STATIONARY PHASE: | **MEGA-5 FAST** |
| FILM THICKNESS: | **0.10 µm** |
| INTERNAL DIAMETER: | **0.10 mm** |
| LENGTH: | **10 m** |
| | **Crossbond** |
| TEMPERATURE MAX: | **350°C** |
| COLUMN ID #: | **12175** |
| CATALOG CODE: | **F-5-010-010-10** |

## CHROMATOGRAPHIC CONDITIONS

| | | | |
|---|---|---|---|
| **Temperature Program:** | 40°C | 10°C/min | 220°C |
| **Injector:** | Split | 250°C | |
| **Injection Volume:** | 1 µL | **Split Flow:** | 60 mL/min |
| **Detector:** | FID | 250°C | |
| **Carrier Gas:** | Hydrogen | 180 kPa | Constant Pressure |

## PEAK IDENTIFICATION AND DATA

| Sample: | GROB TEST MIXTURE # 2 (FLUKA Catalog # 86501) |
|---|---|

| Peak | Name | | | |
|---|---|---|---|---|
| 10 | Decane | | | |
| 12 | Dodecane | | | |
| A | 2,6-dimethylaniline | | | |
| Am | dicyclohexylamine | | | |
| D | 2,3-butanediol | | | |
| E10 | Methyl Decanoate | | | |
| E11 | Methyl Undecanoate | | | |
| E12 | Methyl Laurate | | | |
| OI | 1-Octanol | | | |
| P | 2,6-dimethylphenol | | | |
| S | 2-ethylcaproic acid | | | |

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# Quality Assurance **Test**

FAST-GC

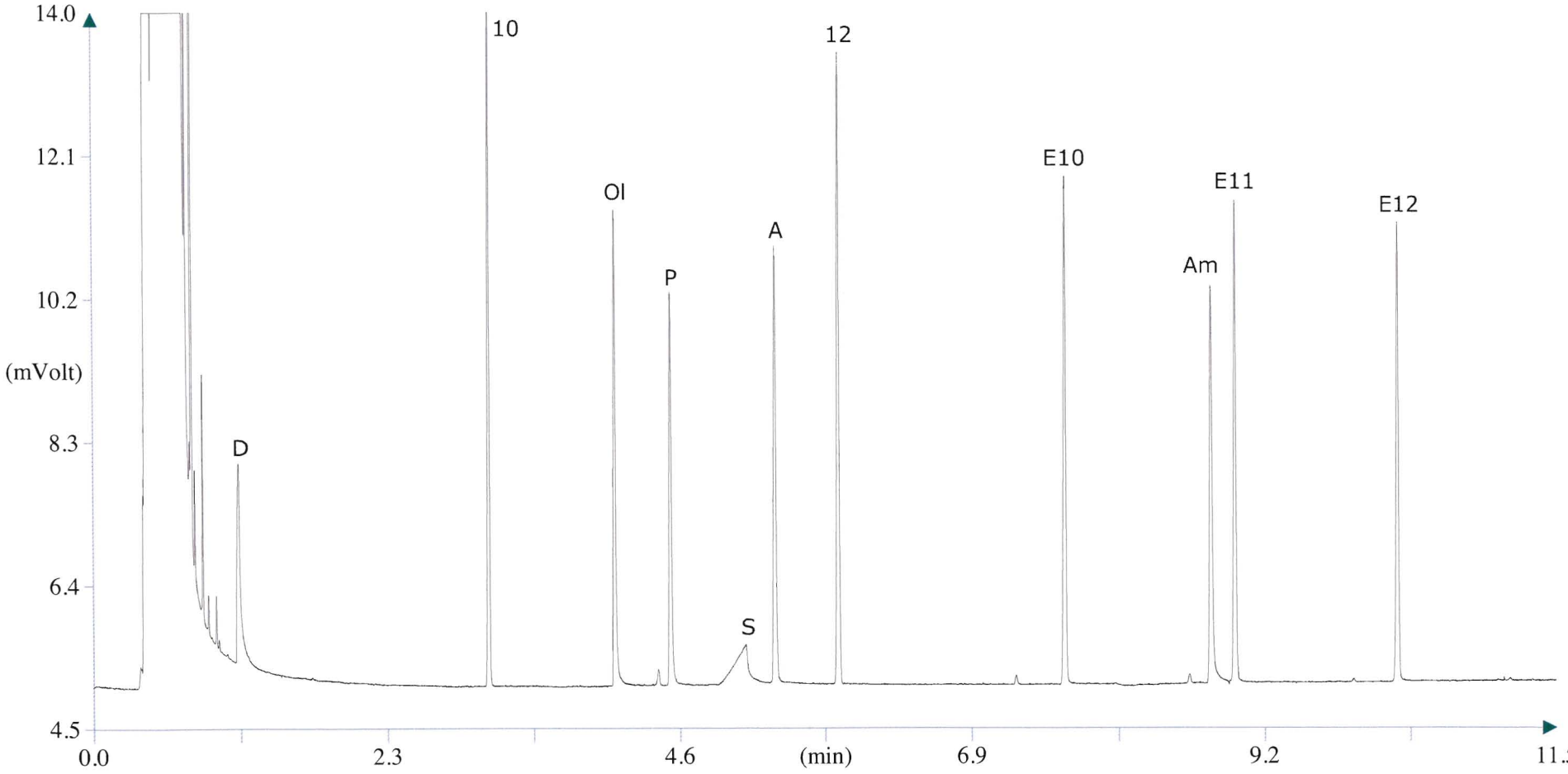
***Date:*** 11.04.2012

***Sample Test:*** Grob Test Mixture # 2 (Fluka Cat. # 86501)

***Column ID #:*** 12175

***N/m*** *(Theoretical plates per meter calculated on E12 peak in isothermal mode):* 9534

***FAST MEGA 5***
***10m 0.1mm 0.1um***
***40C 10C/min 220C, 180KPa***

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***MEGA-WAX***