| 88-3 (2004) | Acetaldehyde |
|---|---|
| CAS Nº: 75-07-0 | EINECS Nº: 200-836-8 |
| EC-LV (8 h): -<br>Lowest European LV (8h): 37 mg/m³<br>Highest European LV (8h): 180 mg/m³ | EC-STLV: -<br>Lowest European STLV: 45 mg/m³<br>Highest European STLV: 92 mg/m³ |

| SUMMARY OF THE METHOD | |
|---|---|
| **Language:**<br>French | **Reference:**<br>**Aldéhydes:** MétroPol Fiche 001, INRS, Paris (2005). |
| **Summary:** The method is applicable to aldehyde vapours in air. The sample is collected by pumping air through a sorbent tube containing silica gel impregnated with 2,4-DNPH. After desorption with acetonitrile the sample is analysed by HPLC with UV detection on a C18 bonded silica column. | |
| **SAMPLING** | |
| **Sampler type** | Pumped sorbent tube |
| **Sampling substrate** | Silica gel impregnated with 2,4-DNPH (250 - 500 mg) |
| **Recommended flow rate** | 0,2 - 1 l/min |
| **Recommended sampling time** | 60 - 300 min |
| **Recommended volume** | 60 l |
| **TRANSPORT AND STORAGE** | |
| **Description/conditions of transport and storage incl. specific issues** | Samples have to be kept refrigerated and should be analysed as soon as possible. Rapid degradation is observed. |
| **ANALYSIS** | |
| **Sample preparation** | Transfer the sorbent and the glass wool into a crimp vial. Add acetonitrile (1 - 10 ml), the vial is closed and shaken for several minutes. |
| **Analytical technique** | Analysis by HPLC. An external standard (acetaldehyde DNPH-derivative) is used. |
| **METHOD EVALUATION DATA** | |
| **Range studied** | - |
| **Sampling bias** | - |
| **Analytical bias** | - |
| **Method bias** | - |
| **Sampling precision** | not applicable |
| **Analytical precision** | - |
| **Method precision** | - |
| **Limit of quantification** | - |
| **Overall uncertainty (EN 482)** | < 20 % (estimated; the description file gives insufficient data for calculation). |
| **Expanded uncertainty (prEN 482)** | Insufficient data for calculation. |

| INFORMATION IN RELATION TO THE VALIDATION | |
|---|---|
| **Is the sample dissolution procedure described widely applicable?** | yes |
| **Does the sample dissolution method include wall deposits, where applicable?** | not applicable |
| **Was a test gas atmosphere used, where applicable?** | Yes (dynamic test atmosphere). |
| **How was the recovery determined?** | not mentioned |
| **Was the sampler capacity or breakthrough volume determined?** | Yes, at a concentration of 234 mg/m$^3$ the breakthrough volume is 26 l. |
| **Was temperature and RH considered, where appropriate?** | no |
| **EVALUATION** | |
| **Rating category** | B |
| **Rationale for rating** | Up to date methodology, interlaboratory comparisons, published work, but partially validated, brief method description, insufficient validation data in the method. |
| **Observations** | In case of mixtures of aldehydes, addition of 0,03 % diethylamine to the eluent improves the chromatographic resolution.<br>This method has been developed for several aldehydes, before the publication of EN 482.<br>More back-up data exist for this substance but are not included in the MétroPol method description file. |
| **Similar methods** | DFG |