

# VOC Emissions Test report

L isolante K-Flex S.r.l

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Date  
07/02/2012  
Your ref.

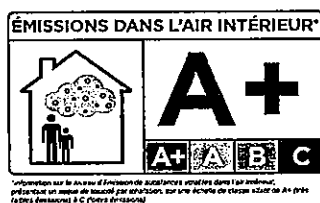
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## 1. Sample Information

|                               |                         |
|-------------------------------|-------------------------|
| Sample identification         | K-Flex ST               |
| Product type                  | Insulation              |
| Batch no.                     | -                       |
| Production date               | -                       |
| Date when sample was received | 11/11/2011              |
| Testing (start - end)         | 14/12/2011 - 11/01/2012 |

## 2. Resulting VOC Emissions Class Label

This recommendation is based on French regulation as published on 25 March 2011 (décret DEVL1101903D) and on 13 May 2011 (arrêté DEVL1104875A). For details please see [www.eurofins.com/france-voc](http://www.eurofins.com/france-voc)



## 3. Conclusion on CMR emissions

The tested product fulfills the requirements of the French regulation DEVP0908633A of 30 April 2009 and DEVP0910046A of 05 May. For details please see [www.eurofins.com/france-voc](http://www.eurofins.com/france-voc).

The results are only valid for the tested sample(s).

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#### 4. Test Method

| Method  | Principle        | Parameter                                      | Detection limit                            | Uncertainty                         |    |
|---|------------------|--|--|-------------------------------------|----|
| ISO 16000 parts -3, -6, -9, -11<br>Internal method numbers: 9810,<br>9811, 9812, 2808, 8400   | GC/MS<br>HPLC/UV | VOC<br>Volatile aldehydes                      | 5 µg/m <sup>3</sup><br>5 µg/m <sup>3</sup> | 22% (RSD)<br>Um = 2 x RSD =<br>45 % |    |
| <b>Test chamber parameter</b>   |                  |  |  |                                     |    |
| Chamber volume (L):   | 119              | Temperature (C):                               | 23   | Relative humidity (%):              | 50 |
| Air change rate (per hour):   | 0.5              | Loading ratio(m <sup>2</sup> /m <sup>3</sup> ) | 1  |                                     |    |
| <b>Test condition: Sample stayed in test chamber during the whole 28 days testing period.</b> |                  |  |  |                                     |    |
| <b>Sample preparation</b>   |                  |  |  |                                     |    |
| Stainless steel frame   |                  |  |  |                                     |    |

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## 5. Results

|                                     | Concentration after<br>28 days<br>$\mu\text{g}/\text{m}^3$ | C                                 | B     | A     | A+    |
|-------------------------------------|--|-----------------------------------|-------|-------|-------|
| TVOC                                | 94   | >2000                             | <2000 | <1500 | <1000 |
| Formaldehyde                        | 5.9  | >120                              | <120  | <60   | <10   |
| Acetaldehyde                        | <3   | >400                              | <400  | <300  | <200  |
| Toluene                             | <2   | >600                              | <600  | <450  | <300  |
| Tetrachloroethylene                 | <2   | >500                              | <500  | <350  | <250  |
| Ethylbenzene                        | <2   | >1500                             | <1500 | <1000 | <750  |
| Xylene                              | <2   | >400                              | <400  | <300  | <200  |
| Styrene                             | <2   | >500                              | <500  | <350  | <250  |
| 2-Butoxyethanol                     | <2   | >2000                             | <2000 | <1500 | <1000 |
| Trimethylbenzene                    | <2   | >2000                             | <2000 | <1500 | <1000 |
| 1,4-Dichlorobenzene                 | <2   | >120                              | <120  | <90   | <60   |
| <b>CMR compounds</b>                |  | Maximum allowed air concentration |       |       |       |
| Benzene                             | <0.2   | <1                                |       |       |       |
| Trichloroethylene                   | <0.2   | <1                                |       |       |       |
| Dibutylphthalate<br>(DBP) *         | <0.2   | <1                                |       |       |       |
| Diethylhex-<br>ylphthalate (DEHP) * | <0.5   | <1                                |       |       |       |

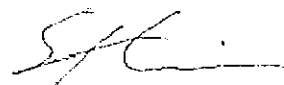
< Means less than

> Means higher than

\* Not a part of our accreditation (EN ISO/IEC 17025:2005) by DANAK (no. 522))



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