



# Attestation

## LEED v4 and v4.1 BETA

On 17 September 2021, Eurofins Product Testing A/S received a sample of a chemical anchor with the product name:

### Chemfix 100/Chemfix 600

supplied by

### CHEMFX PRODUCTS LIMITED

The sample was supplied as being representative of the manufactured product, and it has been tested in accordance with the relevant ISO 16000, EN 16516, ISO 11890-2, and ASTM D2369 testing standards (See test report no. 392-2021-00459801\_A\_EN and no. 392-2021-00459803\_XG\_EN).

**The test results of the tested sample indicate that the product qualifies for LEED v4 and LEED v4.1 BETA (February 2021) projects outside the US by showing compliance with the specifications for VOC emissions and VOC content by complying with:**

#### VOC emissions specifications in LEED EQ credit "Low-Emitting Materials" for LEED projects outside the US:

- The requirements of LEED v4.1 BETA (February 2021) by not exceeding the LCI values mentioned in the German AgBB Testing and Evaluation Scheme (2018), showing an overall R-value below or equal to 1 and having a TVOC according to EN 16516 below or equal to 1,000  $\mu\text{g}/\text{m}^3$ , a sum of VOC without LCI less than 100  $\mu\text{g}/\text{m}^3$  and a formaldehyde emission below or equal to 10  $\mu\text{g}/\text{m}^3$ ; all after 28 days.
- The requirements of LEED v4 by complying with:
  - The requirements of Indoor Air Comfort Gold version 7.0 (May 2020).

#### VOC content specifications in LEED EQ credit "Low-Emitting Materials" for LEED projects globally:

- The requirements of LEED v4 and LEED v4.1 BETA (February 2021): South Coast Air Quality Management District (SCAQMD) Rule 1168 (2017) for Multi-Purpose Construction Adhesive having a VOC content below 70 g/L.

3 March 2022

  
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Date  
10 June 2014  
Our ref.  
392-2014-00095701A/Rev1



## Test Report – LEED 2009 EQ c4.1, SCAQMD rule 1168 (2005)

### Sample material

Sample identification	CHEMIFIX PURE EPOXY RESINS
Product type	Multipurpose construction adhesives
Product data, according to manufacturer	Density: 1.34 g/ml at 20 °C ** Water content: 0 g/l** Exempt compounds: none ***
Date received	28 May 2014
Analytical period	30 May 2014 – 10 June 2014

### Methods applied

Method	Principle	Parameter	Detection limit	Uncertainty, U <sub>m</sub> (%)
LEED 2009 EQ c4.1 (Modified)	Gravimetric	Total Volatiles, SCAQMD rule 304	1 g/l	10 %

20 cm sample was dispensed and discarded. Further sample was dispensed in a preweighed dish and allowed to sit for 1 hour (durometer reading > 80). Volatile content of the sample was determined gravimetrically by heating up to 110 °C for 60 minutes. The result is the average of double testing. The result was calculated as:

$$([g \text{ all volatiles}] - [g \text{ water}] - [g \text{ exempt compounds}]) / ([l \text{ material}] - [l \text{ water}] - [l \text{ exempt compounds}])$$

U<sub>m</sub> (%): The expanded uncertainty U<sub>m</sub> is equal to 2 x RSD%, see also [www.eurofins.dk/uncertainty](http://www.eurofins.dk/uncertainty).

### Analytical results

Solid content, % mass	Water content, % mass	Exempt compounds, % mass	VOC less water less exempt compounds, g/l	VOC limit g/l
99.9	0 % **	0 %***	1.2	70 *

\* VOC limit for "Multipurpose construction adhesives"

\*\* Given by the client

\*\*\* No information about exempt compounds. Set to zero.

Eurofins Product Testing A/S

Søren Ryom Villadsen  
Contact person

Morten Sielemann  
Analytical Chemist



# Confirmation

## LEED

On 28 May 2014, Eurofins Product Testing A/S received a sample of an adhesive with the product name:

### CHEMFIX PURE EPOXY RESINS

supplied by

### Chemfix Products Ltd

The sample was supplied as being representative of the manufactured product, and it has been tested as a multipurpose construction adhesives in accordance with the relevant ISO 11890-1, ASTM D2369 and EPA method 24 testing standards (See test report no. 392-2014-00095701A/Rev1).

**The test results of the tested adhesive indicate that the product qualifies for LEED 2009 and/or LEED v4 specifications on VOC content by complying with:**

**VOC content specifications in LEED EQ credit "Low-emitting products":**

- the requirements of SCAQMD rule 1168 (2005)

17 June 2014



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Søren Ryom Villadsen  
Analytical Service Manager

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Date  
 17 July 2013

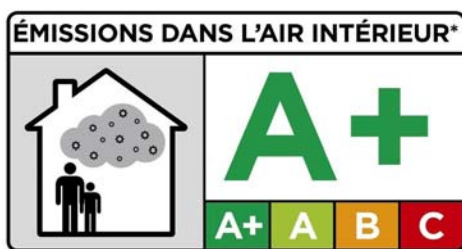
# Testing Report emission rate of VOC (volatile organic compounds)

## 1. 1. Information on the sample

Identification of the sample	Chemfix Epoxy Resin
Product type	Joint, adhesive
Batch Number	-
Date of production	-
Date of receipt	11/03/2013
Testing period (start-end)	14/03/2013 - 11/04/2013

## 2. Conclusion regarding the classification of the labeling of emission rate of VOC

This recommendation is based on the French regulations of 23rd March 2011 (prescription DEVL1101903D) and of 19th April 2011 (regulation DEVL1104875A). For further information kindly visit our homepage [www.eurofins.com/france-voc](http://www.eurofins.com/france-voc).



\*Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).

The classification of the emission rate of VOC of the product has been indicated without explicitly considering the uncertainty linked to the result. According to the regulation No. 2011-321 of 23rd March 2011, the indication of the classification of the emission rate of VOC is the sole responsibility of the person – natural person or juristic person – placing the product at the disposal of the French market.

The results do only concern the sample or the samples which has/have been tested.

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### 3. Testing procedure

Procedure	Principle	Parameters	Quantification Limit	Incertitude	
ISO 16000 parts -3, -6, -9, -11 Internal procedures used: 9810, 9811, 9812, 2808, 8400	GC/MS HPLC/UV	VOC Aldehydes Volatiles	2 µg/m <sup>3</sup> 3 µg/m <sup>3</sup>	22% (RSD) Um = 2 x RSD = 45 %	
<b>Parameters of testing in the room of emission</b>					
Volume of the room, L	119	Temperature, °C	23±1	Relative humidity, %	50±5
Rate of regeneration of the air, 1/h	0,5	Consumption factor, m <sup>2</sup> /m <sup>3</sup>	0,007		
<b>Testing conditions: The sample remains in the emission room during the whole 28 days of the testing period.</b>					
<b>Preparation of the sample</b>					
Thickness in mm:	3				

## 4. Results

	Concentration After 28 days $\mu\text{g}/\text{m}^3$	C	B	A	A+
VOC Rate	<2	>2000	<2000	<1500	<1000
Formaldehyde	<3	>120	<120	<60	<10
Acetaldehyde	<3	>400	<400	<300	<200
Toluol	<2	>600	<600	<450	<300
Tetrachloroethylene	<2	>500	<500	<350	<250
Methylbenzene	<2	>1500	<1500	<1000	<750
Xylene	<2	>400	<400	<300	<200
Styrene	<2	>500	<500	<350	<250
2-Butoxyethanole	<2	>2000	<2000	<1500	<1000
1,2,4- Trimethylbenzene	<2	>2000	<2000	<1500	<1000
1,4-Dichlorobenzene	<2	>120	<120	<90	<60

< Means below  
> Means above



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