



# Fraunhofer

## TESTED<sup>®</sup> DEVICE

HEIN Ind.-Schilder  
GEM-MARK

Report No. HE 2209-1349

Single product  
Outgassing Behavior  
VOC/SVOC

## Qualification Certificate

This is to certify that the product mentioned above, provided by

**HEIN Industrieschilder GmbH**  
Sinsheim, Germany

has been awarded a Fraunhofer certificate TESTED DEVICE  
bearing the report number HE 2209-1349.

The outgassing behavior of the Cleanroom label „GEM-MARK“  
(color: cyan, magenta, yellow, black, white) at the stated  
temperatures was investigated according to VDI 2083 Part 17 and  
ISO 14644-15. Based on the outgassing rates determined for the  
specific surfaces, the following material classification was made  
for the corresponding Contaminant Category:

Contaminant Category (x)	SER <sub>a</sub> <sup>1)</sup> 23 °C [g/m <sup>2</sup> s]	SER <sub>a</sub> <sup>1)</sup> 90 °C [g/m <sup>2</sup> s]	ISO-ACC <sub>m</sub> Class (x) based on 23 °C
VOC	1.9 x 10 <sup>-9</sup>	2.6 x 10 <sup>-7</sup>	<b>-8.7</b>
SVOC	< 2.8 x 10 <sup>-10</sup>	5.0 x 10 <sup>-8</sup>	<b>&lt; -9.6</b>
Amines	< 2.8 x 10 <sup>-10</sup>	< 1.7 x 10 <sup>-9</sup>	--
Organophosphates	< 2.8 x 10 <sup>-10</sup>	< 1.7 x 10 <sup>-9</sup>	--
Siloxanes	< 2.8 x 10 <sup>-10</sup>	< 1.7 x 10 <sup>-9</sup>	--
Phthalates	< 2.8 x 10 <sup>-10</sup>	< 1.7 x 10 <sup>-9</sup>	--

<sup>1)</sup>SER<sub>a</sub>: Area-specific emission rate

HE 2209-1349  
Report No. first document

Stuttgart, December 16, 2022  
Place, date of first document issued

--  
Report No. current document

--  
Place, current date

on behalf of 

This document only  
applies to the named  
product in its original state  
and is valid for a period of  
5 years from the date the  
first document was issued.  
The document can be  
verified under  
**www.tested-device.com**.

Detailed information and  
parameters of the test  
environment can be found  
in the Fraunhofer IPA test  
report.