



valid until: November 26, 2030

IPA

Cleanroom (atmospheric)

Single product Outgassing Behavior VOC/SVOC

This document only applies to the named product in its original state and is valid for a period of 5 years from the current date the 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.

Fraunhofer

TESTED[®]
DEVICE

Ziehl-Abegg SE
HF C27021 14 black
Report No. ZI 2507-1655

Qualification Certificate

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

Ziehl-Abegg SE
Künzelsau, Germany

has been awarded a Fraunhofer certificate TESTED DEVICE bearing the report number ZI 2507-1655.

The outgassing behavior of the HF C27021 14 black (color: black) at the stated temperature was investigated according to ISO 14644-15, ISO 16000-25 and VDI 2083 Part 17. 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 ¹⁾ 23 °C [g/m ² ·s]	ISO-ACC ^m Class (x)
VOC	3.1 x 10 ⁻⁹	-8.5
SVOC ²⁾	3.0 x 10 ⁻⁹	-8.5
Sum VOC + SVOC	6.1 x 10 ⁻⁹	--
Refractories ³⁾	1.0 x 10 ⁻⁹	--
Siloxanes ⁴⁾	1.0 x 10 ⁻⁹	--

¹⁾ The emission rate is calculated using the detected mass based on the response of the standard, the analyzed unit and the sampling duration. ²⁾ According to ISO 16000-25, SVOC is the sum of airborne and condensable SVOC. ³⁾ Refractories are compounds containing elements other than C, H and O (for example S, P, N, Si,...). ⁴⁾ Siloxanes and other organic substances containing silicon. Siloxanes are also classified as refractories.

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Stuttgart, November 26, 2025
Place, current date

on behalf of 
Dr.-Ing. Frank Bürger, head of business unit Testing and Certification



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