



Fraunhofer

TESTED[®] DEVICE

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

Single product Outgassing Behavior Inorganic Acids

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 and VDI 2083 Part 17. Based on the outgassing rates
determined for the specific surfaces, the following material classi-
fication was made for the corresponding Contaminant Category:

Contaminant Category (x)	SER _a ¹⁾ 23 °C [g/m ² s]	ISO-ACC _m Class (x)
HF	< 2.9 x 10 ⁻⁹	< -8.5
HCl	< 2.9 x 10 ⁻⁹	< -8.5
HBr	< 2.9 x 10 ⁻⁹	< -8.5
HNO ₃	< 2.9 x 10 ⁻⁹	< -8.5
H ₃ PO ₄	< 2.9 x 10 ⁻⁹	< -8.5
H ₂ SO ₄	< 2.9 x 10 ⁻⁹	< -8.5

¹⁾The emission rate is calculated using the detected concentration based on the
external standard calibration, the analyzed sample surface area or number of samples,
the volume of the impingement solution and the sampling duration. the impingement
solution and the sampling duration

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Stuttgart, May 25, 2020
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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

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.