



Fraunhofer

**TESTED[®]
DEVICE**

item Industrietechnik
Hinge 8 AI PP0

Report No. IT 2207-1335

DUPLICATE

Statement of
Qualification

Single product
Outgassing Behavior
VOC/SVOC

Customer	item Industrietechnik GmbH Friedenstrasse 107-109 42699 Solingen Germany
Component tested	
Category:	Cleanroom facilities
Subcategory:	Wall/Ceiling/Floor/Door
Product name:	Hinge 8 Al PPO, light (manufacturing date: 2022; color: grey; article number: 0.0.488.90)

Emission measurements with purge-and-trap thermodesorption method and gas chromatography combined with mass spectrometry (TD-GC/MS)	
Standards/Guidelines:	ISO 14644-8, -15; ISO 16000-6, -9, -11, -25 The norms stated generally refer to the version valid at the time of the tests.
Testing equipment:	Measuring station:PerkinElmer Clarus 600, Clarus SQ8, ATD 650
Test procedure parameters:	<ul style="list-style-type: none">Retention range (VOC): C6 to C16Outgassing test temperatures: 23 °CDuration of preconditioning:> 10hFlow rate sampling gas: 10l/hDuration of sampling:..... 1 hVolume of the emission cell: 10lEmission cell material:.....stainless steel

Test result / Classification	The outgassing behavior of the Hinge 8 Al PPO, light at the stated temperatures was investigated according to ISO 14644-15. Based on the outgassing rates determined for the specific equipment, the following material classification was made for the corresponding Contaminant Category:
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Contaminant Category (x)	SER _u ¹⁾ 23 °C [g/unit · s]	ISO ACC _e Class (x) based on 23° C
VOC	< 2.8 x 10 ⁻¹³	< - 12.6
SVOC	< 2.8 x 10 ⁻¹³	< - 12.6
Amines	< 2.8 x 10 ⁻¹³	--
Organophosphates	< 2.8 x 10 ⁻¹³	--
Siloxanes	< 2.8 x 10 ⁻¹³	--
Phthalates	< 2.8 x 10 ⁻¹³	--

¹⁾SER_u: Unit-specific emission rate

The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

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

Fraunhofer Institute for Manufacturing Engineering and Automation IPA	IT 2207-1335 Report No. first document	Stuttgart, January 25, 2023 Place, date of first document issued
Department of Ultraclean Technology and Micromanufacturing	-- Report No. current document	-- Place, current date
Nobelstrasse 12 70569 Stuttgart Germany	on behalf of Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA	