



LEAK RATES

Overview leak rates / applications / leak detectors

LEAK RATES

Applications	Micro-Flow	Mass Extraction	Integrity test	Portable	Sniffing leak detectors
	sccm	mbar l/s	Pa m ³ /s		
 Ventilation in cleanrooms	1 · 10 ⁸	1 · 10 ⁷	1 · 10 ⁶		
 Ventilation in large offices	1 · 10 ⁷	1 · 10 ⁶	1 · 10 ⁵		
 Flow rate „Manneken Pis“ in Brussels; 2 l/s	1 · 10 ⁶	1 · 10 ⁴	1 · 10 ³		
 Open water tap, 0.1 l/s	1 · 10 ⁵	1 · 10 ³	1 · 10 ²		
 Average amount of breath of an adult; 10,000 l/d	1 · 10 ⁴	1 · 10 ²	1 · 10 ¹		
 Dripping water tap	1 · 10 ³	1 · 10 ¹	1 · 10 ⁰		
 Maximum gas flow rate of a small turbopump	1 · 10 ²	1 · 10 ⁰	1 · 10 ⁻¹		
 Tightness of an automotive engine	1 · 10 ¹	1 · 10 ⁻¹	1 · 10 ⁻²		
 Waterproof	1 · 10 ⁰	1 · 10 ⁻²	1 · 10 ⁻³		
 Blister packaging	1 · 10 ⁻¹	1 · 10 ⁻³	1 · 10 ⁻⁴		

Products

Micro-Flow



VE2

Mass Extraction



ME2

Integrity test



AMI

Portable



Sniffing leak detectors

MiniTest 300

AMI Integrity test

Mass Extraction

Micro-Flow



Gas pipeline, 1 l/h

1 · 10⁻²
1 · 10⁻⁴ 1 · 10⁻⁵



Air conditioning, 5 g/a

1 · 10⁻³
1 · 10⁻⁵ 1 · 10⁻⁶



Airbag igniter

1 · 10⁻⁴
1 · 10⁻⁶ 1 · 10⁻⁷



Pacemaker

1 · 10⁻⁵
1 · 10⁻⁷ 1 · 10⁻⁸

1 cm² stainless steel surface, untreated, after 10 h pumping

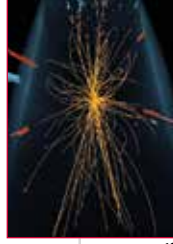


1 · 10⁻⁶
1 · 10⁻⁸ 1 · 10⁻⁹



KATRIN experiment

1 · 10⁻⁷
1 · 10⁻⁹ 1 · 10⁻¹⁰



X-ray tubes

1 · 10⁻⁸
1 · 10⁻¹⁰ 1 · 10⁻¹¹



Leak rates of big science cavities

1 · 10⁻⁹
1 · 10⁻¹¹ 1 · 10⁻¹²

1 cm² UHV surface, baked out at 400 °C, after 10 h of pumping



1 · 10⁻¹⁰
1 · 10⁻¹² 1 · 10⁻¹³

Detection limit of pressure bearing testing according to MIL-STD-8833



1 · 10⁻¹¹
1 · 10⁻¹³ 1 · 10⁻¹⁴

Detection limit of outgassing measurement systems

1 · 10⁻¹²
1 · 10⁻¹⁴ 1 · 10⁻¹⁵

MiniTest

Sniffing leak detectors

Helium leak detectors



ASM 102 S

Portable



ASM 310

Multipurpose



ASM 340
ASM 340 D
ASM 340 I

High performance – Mobile



ASM 380

Modular



ASI 35

5 · 10⁻⁵ Pa m³/s

Smallest detectable leak rate Micro-Flow

5 · 10⁻⁷ Pa m³/s

Smallest detectable leak rate Mass Extraction

5 · 10⁻¹³ Pa m³/s

Smallest detectable leak rate for helium leak detectors (Vacuum leak detection)

5 · 10⁻¹⁰ Pa m³/s

Smallest detectable leak rate for helium leak detectors (Sniffing leak detection)



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