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**Vacuum technology — Vacuum gauges  
— Procedures to measure and report  
outgassing rates**

*Technique du vide — Manomètres à vide — Méthodes de mesurage et  
de rapport du taux de dégagement de gaz*

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## Foreword

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## Introduction

Outgassing from the inner wall of a vacuum chamber and from components in a vacuum chamber limit the achievable lowest pressure in a vacuum system and its cleanliness. The lowest achievable pressure is usually important in research facilities as accelerators, in facilities that need to ensure a clean surface, e.g. molecular beam epitaxy, or in devices that need to ensure high vacuum without pump for long times, such as transmitters or X-ray tubes, medical instruments, surface analytical instrumentation or insulation panels. Cleanliness of a vacuum, i.e. the absence or sufficiently low partial pressure of specific gas species or vapours, is important in many different industrial applications such as coating, EUV lithography, catalysis, drying processes in the pharmaceutical or food industry but also in accelerators, fusion reactors, etc. The measurement of outgassing rates is therefore an important tool of quality assurance in vacuum technology. This document recommends well-defined procedures with the possibility of getting traceability of the results of an outgassing rate measurement.

[Annex A](#) lists schemes of principles of measurement systems.

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