

1. Record Nr.	UNINA9910454830203321
Titolo	Assessment of planetary protection requirements for Mars sample return missions [[electronic resource] /] / National Research Council of the National Academies
Pubbl/distr/stampa	Washington, D.C., : National Academies Press, c2009
ISBN	1-282-13034-X 9786612130342 0-309-13074-3
Descrizione fisica	1 online resource (91 p.)
Disciplina	629.45
Soggetti	Space flight to Mars - Planning Space microbiology Mars surface samples Microbial contamination - Prevention Electronic books. Mars (Planet) Exploration
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- The potential for past or present habitable environments on Mars -- Advances in microbial ecology -- The potential for finding biosignatures in returned Martian samples -- The potential for large-scale effects -- Sample containment and biohazard evaluation -- Sample-receiving facility and program oversight.
Sommario/riassunto	NASA maintains a planetary protection policy to avoid the forward biological contamination of other worlds by terrestrial organisms, and back biological contamination of Earth from the return of extraterrestrial materials by spaceflight missions. Forward-contamination issues related to Mars missions were addressed in a 2006 National Research Council (NRC) book, Preventing the Forward Contamination of Mars. However, it has been more than 10 years since back-contamination issues were last examined. Driven by a renewed interest in Mars sample return missions, this book reviews, updates, and replaces the planetary protection conclusions and

recommendations contained in the NRC's 1997 report Mars Sample Return: Issues and Recommendations. The specific issues addressed in this book include the following: the potential for living entities to be included in samples returned from Mars; scientific investigations that should be conducted to reduce uncertainty in the above assessment; the potential for large-scale effects on Earth's environment by any returned entity released to the environment; criteria for intentional sample release, taking note of current and anticipated regulatory frameworks; and the status of technological measures that could be taken on a mission to prevent the inadvertent release of a returned sample into Earth's biosphere.
